

Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects

Outline Operational Drainage Strategy (Revision C) (Tracked)

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Glossary of Acronyms

| AOD | Above Ordnance Datum |
|------------|---|
| BS | British Standard |
| DCO | Development Consent Order |
| DEL | Dudgeon Extension Limited |
| DEP | Dudgeon Offshore Wind Farm Extension Project |
| EIA | Environmental Impact Assessment |
| ES | Environmental Statement |
| <u>FoS</u> | Factor of Safety |
| HDD | Horizontal Directional Drill |
| HVAC | High-Voltage Alternating Current |
| Km | Kilometre |
| NG | National Grid |
| ODS | Outline Drainage Strategy |
| SEL | Scira Extension Limited |
| SEP | Sheringham Shoal Offshore Wind Farm Extension Project |

Glossary of Terms

| Dudgeon Offshore Wind Farm Extension Project (DEP) | The Dudgeon Offshore Wind Farm Extension site as well as all onshore and offshore infrastructure. |
|---|---|
| Onshore export cables | The cables which would bring electricity from the landfall to the onshore substation. 220 – 230kV. |
| Onshore Substation | Compound containing electrical equipment to enable connection to the National Grid. |
| Outline ODP | Outline Operational Drainage Plan |
| Order limits | The area subject to the application for development consent, including all permanent and temporary works for SEP and DEP. |
| Sheringham Shoal Offshore Wind Farm Extension Project (SEP) | The Sheringham Shoal Offshore Wind Farm Extension onshore and offshore sites including all onshore and offshore infrastructure. |
| The Applicant | Equinor New Energy Limited |



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1 OUTLINE OPERATIONAL DRAINANGE STRATEGY (ONSHORE SUBSTATION)

1.1 Background

- 1. Equinor New Energy Limited ('the Applicant') is seeking a Development Consent Order (DCO) for the Sheringham Shoal Offshore Wind Farm Extension Project (SEP) and Dudgeon Offshore Wind Farm Extension Project (DEP) (hereafter collectively referred to as 'the Project' or 'SEP and DEP').
- 2. As the owners of SEP and DEP, Scira Extension Limited (SEL) and Dudgeon Extension Limited (DEL) are the named undertakers that have the benefit of the DCO. References in this document to obligations on, or commitments by, 'the Applicant' are given on behalf of SEL and DEL as the undertakers of SEP and DEP.
- 3. The SEP and DEP wind farm sites are located in the southern North Sea, 15.8 kilometres (km) and 26.5km from the coast respectively at their closest point. SEP and DEP will be connected to the shore by offshore export cables to a landfall point at Weybourne, on the North Norfolk coast. From there onshore export cables will transport power over approximately 60km to a new high voltage alternating current (HVAC) onshore substation near the existing Norwich Main substation. The onshore substation will be constructed to accommodate the connection of both SEP and DEP to the transmission grid. A full project description is given in the Environmental Statement (ES), Chapter 4 Project Description (document reference 6.4)(Revision B) [document reference 6.1.4].

1.2 Introduction

- 4. This Outline Operational Drainage Strategy (ODS) forms part of a set of documents that support the DCO application submitted by the Applicant to the Planning Inspectorate for consent to construct and operate the Project.
- 5. This Outline ODS is provided as part of the DCO application to define the basis of design for the operational drainage required at the onshore substation site associated with SEP and DEP.
- 6. A final ODS will be produced prior to construction of SEP and DEP and will be in accordance with the content of this Outline ODS and the final design of the Project. The ODS is secured by Requirement 17 of the **Draft DCO** (document reference 3.1), which states:

"In the event of scenario 1 or scenario 2, each of Work Nos. [15A and 15B] must not commence until a written plan for drainage during operation of the relevant work, has been submitted to and approved by the relevant planning authority, following consultation with the relevant sewerage and drainage authorities, lead local flood authority and the Environment Agency.

In the event of scenario 3 or scenario 4, Work No. [15C] must not commence until a written plan for drainage during operation of the relevant work, has been submitted to and approved by the relevant planning authority, following consultation with the relevant sewerage and drainage authorities, lead local flood authority and the Environment Agency. Each operational drainage plan must accord with the principles for the relevant work set out in the outline operational drainage plan, and must include a timetable for implementation.

Each operational drainage plan must be implemented as approved"

- 7. This Outline ODS should be read in conjunction with the other following documents:
 - Flood Risk Assessment (Appendix 18.2 to ES Chapter 18 Water Resources and Flood Risk (document reference 6.18)); and
 - Onshore Substation Drainage Strategy (Annex 1 to the Flood Risk Assessment described above).
- 8. The Onshore Substation Drainage Strategy (Rev B) concluded that drainage at the onshore substation site would be managed with attenuation combined with infiltration.
- 9. To determine the areas where surface water can be captured and collected in the drainage system lit has been conservatively assumed that half of the total 61,000m² (6.1Ha) onshore substation platform will be finished with impermeable surfacing, Aan area of 30,500m² has therefore been adopted within the calculations. Preliminary onshore substation layouts indicate the actual impermeable areas from which surface water can be collected in a drainage system will be less than 50%.
- 10. To provide a worst-case the longest potential access road that could be accommodated at the <u>onshore substation</u> site has been adopted. The impermeable <u>area from the access road</u> <u>surface</u> has been taken as the <u>full length of the</u> 6.0m wide bitumen bound running surface <u>over the full length of the road</u> from where it ties into the existing National Grid (NG) access road to the proposed onshore <u>substation platform</u>, <u>on this basis</u> an area of 4,500m² has been adopted <u>within the calculations</u>.
- **10.**<u>11.</u> The total area of impermeable surfacing from 50% of the onshore substation platform (30,500m²) and 100% of the bitumen bound road surfacing (4,500m²) where water can be collected and discharged into a drainage system has been taken as 35,000m².
- 11. The bridleway midway along the access road is the highest elevation. It is anticipated water from the access road south of the bridleway will be collected in a filter drain running south along the road verge and tie into a catch pit immediately upstream of the oil separator.
- 12. North of the bridleway two options are possible. Option 1 collects water from the access road in a filter drain, running north along the road verge, connecting into an oil separator before passing under the existing NG access road and connecting into the existing NG substation site drainage for discharge through their outfall. Alternatively, Option 1 could have an independent outfall, which discharges into the same location as NG's existing outfall but does not require any connection into NG's existing drainage system.



- 13. NG's drainage system (or outfall location) would need to accommodate water drained from approximately 2,340m² of access road that runs north of the bridleway. As a worst-case scenario, if a 1 in 5 year storm is considered for a 5 minute period then the NG system would need to accommodate an additional 78.6 l/s and 23.5m³ over a 5 minute period. Paved areas under 4,000m² can be designed using a flat rate of rainfall method to BS EN 16933-2. Refer to Appendix B for calculations associated with anticipated surface water run off flows/volumes for the section of access road north of the bridleway.
- 14. Option 2 collects water from the access road in a filter drain which runs to the south towards to the new substation drainage system; to accommodate the changes in elevation the drain will need to be laid at a deeper elevation.

1.3 Infiltration

1.3.1 Basis of outline design

- **15.12.** Soakaway testing undertaken in trial pits during the Phase 1 ground investigations reported very low permeability rates which suggested an infiltration solution may not be possible.
- 16.13. To explore the full potential of a drainage solution by infiltration a Geophysical survey was undertaken in the <u>onshore</u> substation field and in surrounding fields as shown in <u>Figure 1Figure 1</u>.



Figure 1 – Extent of Geophysical Survey Key to Figure 1: Transparent Light Blue Shade = Electromagnetic Survey Area White Lines = Electrical Resistivity Survey

17.14. The results of the survey identified a historic river channel that had been infilled with granular deposits to a depth of approximately 10m as shown by the brown polygon in Figure 2Figure 2 Figure 2 below:



Figure 2 – Area Indicating Granular Deposits (Brown)

- 18.15. As part of Phase 2 ground investigation, three boreholes BH21-71, BH21-72 & BH21-73 shown in Figure 2Figure 2Figure 2 were bored to ground truth the geophysical surveys. Each borehole had a groundwater monitoring installation which monitors the granular horizon. In each borehole falling head permeability tests along with -borehole soakaway tests in groundwater monitoring installations were undertaken to determine ground permeability and infiltration rates. The results from these tests will be used to calculate the soakaway storage volumes for the <u>onshore</u> substation platform.
- 19.16. The footprint of the <u>onshore</u> substation <u>platform</u> will be approximately 6.1Ha. Figure <u>3Figure 3</u> below shows the footprint. <u>It is important to note that this a</u> <u>conservative assessment as t</u> This footprint accommodates an <u>onshore</u> substation <u>layout which can be</u> orientated either north-south or east-west, <u>as described in</u> <u>Annex 18.2.2: Onshore Substation Hydraulic Modelling Report (Revision B)</u> [document reference 14.34].



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Figure 3 – Substation Footprint

- 20.17. The anticipated volume of water to be managed during the 1 in 100 year storm flood event over the <u>onshore</u> substation and access road surface area has been calculated using Tekla® Tedds software which is based on the methods outlined in BRE Digest 365 and the Wallingford Procedure (Volume 4). Rainfall parameters in Tedds are based on those stated in the Wallingford Procedure. using FEH13 (2013) rainfall data from the FEH Web service.
- 21.18. A 45% allowance for climate change has been allowed and a conservative soil infiltration rate of 1x10⁻⁴ m/s has been used. Actual permeability rates recorded during soakaway tests ranged from 4.84x10⁻⁴ m/s to 5.4x10⁻⁴ m/s.
- 22.19. It has been assumed that 50% of 100% of the bitumen bound surface of the substation access road and 50% of the onshore substation platform surface area is impermeable and will accumulate water for discharge through the surface water drainage system during the storm event.
- 20. A soakaway design has been developed which indicates two 60m long x 15m wide x 1.6m deep soakaways with a total storage volume per soakaway of 1,368m³ assuming 95% porosity. A t-Total storage volume 2,736m³ at 95% porosity has been provided, as depicted on drawing C282-MU-Z-XD-00118-01 F04 included in Appendix B.
- 21. -Verification calculations have been undertaken using MicroDrainage to determine if the proposed storage volume is sufficient for the worst case storm event.
- 22. Calculations have been undertaken in accordance with the CIRIA SuDs Mmanual C753 with a factor of safety (FoS) of 5.0 adopted, which is in accordance with Table 25.2 of the CIRIA SuDS Manual C753.



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- 23. A FoS of 5.0 has been adopted as the size of the area to be drained is in excess of <u>1,000m³</u> and the critical infrastructure on the onshore substation platform will have additional protection measures included as standard within the design. Critical elements will either be bunded or be positioned on raised upstands ensuring any effects from a flood event will be minimal and only result in minor damage to external areas or inconvenience.
- 24. It is also noted that CIRIA SuDS Manual C753 suggests that care should be taken when allowing for base infiltration, especially where the infiltration rates of the surrounding strata is greater than 1 x 10⁻⁵ m/s as in this situation. Therefore Equinor the Applicant commits to the inclusion and maintenance of catch pits / silt traps within the drainage system to minimise the silting of the soakaway bases. The sizing and locations of silt traps will be developed during the detailed design process.
- 25. and a required storage volume calculated to manage surface water from the substation and access road. In preparing the verification calculations it has been assumed that half of the total impermeable area (17,500m²) will be directed to each soakaway.
- 26. For the worst case 480min winter storm a soakaway storage volume of 1,192.7m³ per soakaway is indicated to be required which confirms that each soakaway shown on drawing C282-MU-Z-XD-00118-01 F04 included in Appendix B is oversized by 175m³ giving a total site storage 350m³ greater than required. –Please refer to Appendix A for the MicroDrainage verification calculations soakaway volume calculation
- 23.27. and drawing C282-MU-Z-XD-00118-01_F03 for the soakaway layout and cross section included in **Appendix C**.
- 24. Secondary verification of the calculations undertaken in Tekla® Tedds has been undertaken by RHDHV using MicroDrainage. Two verification scenarios have been analysed as follows:
- 25. Option 1 is in accordance with BRE 365 and NCC LLFA Statutory Consultee for Planning Guidance Document, Version 6.1. The results from this option are in general agreement with the Tekla® Tedds output with slight differences in the rainfall parameters. An additional total storage volume of 320m³ above the total volume indicated by Tekla® Tedds is indicated to be required. This larger volume has been included in the design and is shown on drawing C282-MU-Z-XD-00118-01_F03.
- 26. Option 2 is not in compliance with BRE365 and proposes a 50% reduction in the base infiltration coefficient and a global factor of safety of 2, the results of this analysis indicate that the storage volume could be reduced to 1073m³, an overall reduction of 352.5m³. Following development of the substation layout and drainage maintenance plan this option will be given greater consideration at detailed design.
- 27. The results of the RHDHV analysis are included as **Appendix C.**



1.3.2 Description of solution

- 28. The soakaway solution works by collecting the surface water drainage in a modular crate system, buried under the <u>onshore substation</u> platform. The outfall drainage pipe is connected to the inlet of the soakaway crates and water is allowed to accumulate in the voids that exist within the crates. At the same time as water accumulates, it is also infiltrated into the surrounding ground as all sides of the crates are open. The crates are sized to ensure the open voids that exist within them have sufficient volume to accommodate the water that will accumulate during a 1 in 100 year storm event whilst taking consideration of infiltration rates.
- 29. Initial sizing of the soakaway volume is based on an assumed soil infiltration rate of 1x10⁻⁴ m/s however initial results from the site tests indicate <u>actual permeability rates</u> recorded during soakaway tests ranged from 4.84x10⁻⁴ m/s to 5.4x10⁻⁴m/s, the expected infiltration rate will be higher at a value closer to 5x10⁻⁴ m/s, which means the soakaway crate volume will be on the conservative side.-
- 30. Soakaway testing to BRE Digest 365 will be required once the <u>onshore</u> substation platform is constructed to confirm the initial results and assumptions used in the design are acceptable.
- 31. Pollution control will be managed by incorporating a class 1 oil separator upstream of the soakaway crate inlet. Class one separators are designed to achieve a concentration of less than 5mg/l of oil under standard test conditions and are suitable for discharging to the environment. Any water collected from car parks, access roads and hard standing areas with potential for oil contamination will be required to connect into the oil separator before flowing into the soakaway.
- 32. In a storm event, water collected from roof tops may bypass the oil separator and connect downstream into the next catch pit before flowing into the soakaway.
- 33. The platform level is 28.23m Above Ordnance Datum (AOD). The finished ground level (formation level) following any earthworks is 475mm lower at 27.775m AOD. It is anticipated that the soakaway crates will be buried with a minimum cover of 1.2m to platform level to ensure any vehicles/equipment located above do not adversely impact the structure.
- 34. To ensure heavy loads (from transformers etc) are not directly located above the soakaway units, they will be positioned adjacent to (and within) the site boundary limits where there is higher potential for an access road to be located once the final site layout is confirmed. To maintain the required soakaway volume and keep to the site boundary limits, the soakaway crates have been positioned on the east and west sides of the site. The drainage design within the <u>onshore</u> substation will ensure 50% of water collected is routed to the east soakaway and 50% to the west. A single soakaway may be possible once <u>the onshore</u> substation layout <u>has s have</u> been confirmed later in the Project.



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35. Access will be maintained to all catch pits <u>and silt traps</u> located upstream of the soakaway to ensure any silt/deposits can be removed as part of a maintenance programme. Access will be maintained to the oil separator unit so routine maintenance can be performed. A detailed maintenance plan will be developed during detailed design once the drainage design is finalised. An indicative layout of the soakaway design and upstream treatment is indicated on drawing C282-MU-Z-XD-00118-01 F034, which is i-Included in Appendix BD.



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Appendix A – <u>MicroDrainage Onshore Drainage Solution – Hydraulic Verification</u> <u>Calculations</u> <u>Soakaway Volume Calculations</u>

REPORT

Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects

Onshore Substation Drainage Solution - Hydraulic Verification Calculations

Client: Equinor New Energy Limited

Reference:PC4239-ZZ-XX-RP-D-0001Status:S0/P04.01Date:25 April 2023





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i.

Document title:Sheringham Shoal and Dudgeon Offshore Wind Farm Extension ProjectsDocument short title:OnSS Hydraulic Verification CalculationsReference:PC4239-ZZ-XX-RP-D-0001Status:P04.01/S0Date:25 April 2023Project name:Sheringham Shoal and Dudgeon Offshore Wind Farm Extension ProjectsProject name:PC4239Author(s):Iyiola OjoDrafted by:Iyiola OjoChecked by:Benga Ajayi/Helena WicksDate / initials:25/04/2023Approved by:Dean Johnson

Date / initials: 25/04/2023

Classification

Project related

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Royal HaskoningDHV has undertaken a hydraulic design verification of the proposed Onshore Substation (OnSS) surface water drainage design calculations in support of Equinor New Energy Limited who are seeking a Development Consent Order (DCO) for the Sheringham Shoal (SEP) and Dudgeon (DEP) Offshore Wind Farm Extension Projects.

The design verification sought to carry out a review of the third party (J Murphy & Sons Ltd) proposed surface water drainage strategy, specifically by checking the adequacy of the proposed geocellular soakaway (infiltration) units intended for infiltrating the site surface water runoff into the underlying ground strata.

The proposed surface water drainage strategy as contained on **Drawing No. C282-MU-Z-XD-00118-01-Substation Outline Drainage Plan Infiltration Method** [APP-307] consists of a soakaway solution which involves collecting the surface water drainage in a modular crate system, to be located under the proposed OnSS platform.

The proposed surface water drainage design indicates that the outfall drainage pipe connects into the inlet of the soakaway crates and water is allowed to accumulate in the voids that exist within the crates. As water accumulates, it is infiltrated into the surrounding ground through the sides and base.

Royal HaskoningDHV, took the approach of applying 50% of the effective catchment area to the proposed geometry of each of the geocellular tanks. The effective catchment area for each of the geocellular tank is 1.75Ha. (Overall area is 3.5Ha). This provides a more accurate means of determining the actual wetted area (internal area) of the soakaway. The design verification applies to one tank, the result is exactly applicable to the second tank.

The proposed volume of each geocellular tank as proposed by **Drawing No. C282-MU-Z-XD-00118-01-Substation Outline Drainage Plan Infiltration Method** [APP-307] is approximately 1,368m³ (i.e. total storage volume of approximately 2,736m³). This represents the actual geometry of the tank factoring in a porosity ratio of 95%.

Norfolk County Council (NCC) LLFA Statutory Consultee for Planning Guidance Document Version 6.1, dated October 2022 has been consulted in the preparation of the design verification exercise. Section 13 Infiltration Constraints states:

'One uncertainty for the design of infiltration systems is the infiltration rate, which may reduce over time, particularly if there is no pre-treatment or there is poor maintenance. To account for this, we expect a safety factor to be incorporated into the design, where the factor used is a judgement based on the consequence of failure of the drainage system. Table 25.2 of CIRIA SuDS Manual (C753) should be consulted and used. If the drainage system within a new development is to be offered to NCC Highways Authority to be considered for adoption, the calculations should use at least the middle column of Table 25.2. The safety factors can only be discounted if the infiltration feature is designed in accordance with BRE365 design procedure. For the avoidance of doubt, BRE365 design does not allow infiltration through the base, only the sides of the feature. This must be demonstrated in the supporting information submitted. Design of infiltration features via the SuDS Manual does allow infiltration through the base and sides of the feature and hence the extra factor of safety must be incorporated into the designs'.



Table 25.2 of CIRIA SuDS Manual 2015 (C753) is captured below for reference:

| TABLE | E Suggested factors of safety, F, for use in hydraulic design of infiltration systems (designed | | | | | |
|----------|---|-------------------------------|---|---|--|--|
| 25.2 | using Bettess (1996). Note: not relevant for BRE method) | | | | | |
| | Size of area to | to Consequences of failure | | | | |
| be drain | be drained | No damage or inconvenience | Minor damage to external areas or inconvenience (eg surface water on car parking) | Damage to buildings or structures, or major inconvenience (eg flooding of roads) | | |
| | < 100 m ² | 1.5 | 2 | 10 | | |
| | 100–1000 m ² | 1.5 | 3 | 10 | | |
| | > 1000 m ² | 1.5 | 5 | 10 | | |

The design verification considered the storage capacity of the geocellular structure prescribed in the CIRIA SuDs Manual C753 when designing an infiltration system. This was evaluated using the MicroDrainage Source Control module. The MicroDrainage simulations check the adequacy of the proposed geometry of the tank to attenuate surface water flow during the critical rain fall period of the 1 in 100-year storm event plus 45% climate change allowance.

The MicroDrainage simulation was modified to mimic the requirements of the CIRIA methodology, specifically changing the default Source Control Factor of Safety from 2 to 5. This simulation allows infiltration over the full depth of the proposed geometry of the tank and the base, with the Factor of Safety applied to the infiltration coefficient over the internal surface area of the tank.

The factor of safety in Table 25.2 of the CIRIA C753 safeguards against the long-term performance of the base infiltration coefficient in the design of infiltration systems. The method prescribed in CIRIA C753 considers that the base area of the geocellular system contributes to the infiltration when disposing surface water runoff. It however recognises that the effect of siltation is more pronounced when the infiltration rate of the soil is high when compared with that of the silt.

This highlights the clogging effect and the negative impact on the void ratio of the surrounding strata. CIRIA C753 suggest that care should be taken when allowing for base infiltration especially in cases where infiltration rates of the surrounding strata is greater than 1×10^{-5} m/s, as above this the impact of silt on the performance of the infiltration system becomes more significant. This can be mitigated where silt traps/catch pits and other sedimentation structures are situated upstream of the geocellular structure. The maintenance requirement of both the geocellular structure and the silt traps can be detailed in a maintenance management schedule as prescribed by CIRIA C753.

The size of the catchment area is 1.75Ha and the consequence of failure is deemed as minor damage to the external areas, therefore the factor of safety adopted in the MicroDrainage simulation is 5



Design Parameters:

- Total impermeable catchment area = 3.5Ha, it is assumed that each of the geocellular units receives a contribution of 50% of this total impermeable area
- Climate change allowance 45%
- Rainfall data Utilises FEH13 (2013) from the FEH Web Service
- Porosity ratio = 95% free volume assumed in tank
- Soil Infiltration Rate = 1×10^{-4} m/s
- Plan area of both soakaways = 15m x 60m = 900m²
- Depth of the soakaway = 1.6m
- Minimum depth of embedment (cover) = 1.2m
- Finished ground (cover level) = 27.775mAOD
- Side infiltration Coefficient = 1 x 10⁻⁴ m/s (0.36m/hr)
- Base infiltration Coefficient =. 1 x 10⁻⁴ m/s (0.36m/hr)
- Factor of Safety = 5 (safeguard against the long-term performance of the base infiltration coefficient in the design of infiltration systems)

The results of the hydraulic verification analysis, using the parameters highlighted above, have been provided in **Appendix 1**. The MicroDrainage simulation suggests that the proposed geometric volume of the tank is sufficient. The peak volumetric rate of infiltration with this approach is approximately 22.2l/s.

The Applicant notes that the above hydraulic verification analysis has been undertaken based on the information presented in **Document No C282-RH-Z-GA-00128 Outline Operational Drainage Strategy** (onshore substation) (Revision B) [REP2-029].

The above document is to be resubmitted to the Examining Authority with a few revisions, reflecting the Applicant's confirmation of the adoption of CIRIA C753 with FoS of 5 instead of the original BRE 365 method. The document will be resubmitted as **Outline Operational Drainage Strategy (onshore substation) (Revision C)** [document reference 9.20] and this Technical Note will be included as an appendix to it.



APPENDIX 1

| Bightwell House PC4239-RRD-ZZ-XX-CA-D-0500 Bretton, Peterborough HYDRAULIC DESIGN CHECK Surrey, PE3 60W PC4239-SRD-DEP Date 25/04/2023 Designed by IO File Cellular Tank - CIRIA C Checked by OA Innovyre Source Control 2020.1.3 Max Max Max Max Status Breen Max Max Max Max Status Breen Max Max Max Max Status Source Control 2020.1.3 Innovyre Mate Status Status Source Control 2020.1.3 Innovyre Max Max Max Max Max Status Source Control 2020.1.3 Innovyre Source Control 2020.1.3 Innovyre Source Control 2020.1.3 Innovyre Source Control 2020.1.3 Innovyre Source Control 2020.1.3 Innovre Max Max Max Max Max Status Source Control 2020.1.3 Innovre Innovre <td colspan="2</th> <th colspan="6">HaskoningDHV UK Limited</th> <th>Page 1</th> | HaskoningDHV UK Limited | | | | | | Page 1 |
|---|-----------------------------------|------------------------|------------------------|----------------------|------------|----------|----------|
| Bretton, Peterborough HYDRAULIC DESIGN CHECK PC4239-SEP-DEP Surrey, PE3 8DW PC4239-SEP-DEP Designed by IO File Cellular Tank - CIRIA C Checked by OA Innovyze Source Control 2020.1.3 Surmary of Results for 100 year Return Period (+45%) Haif Drain Time : 480 minutes. Source Control 2020.1.3 Surmary of Results for 100 year Return Period (+45%) Name 25.509 0.534 19.6 657.0 0 K Source Control 2020.1.3 Source Control 2020.1.3 Surmary of Results for 100 year Return Period (+45%) Numer 25.699 0.534 19.6 657.0 0 K Source Control 2020.1.3 Source Control 2020.1.3 <td>Rightwell House</td> <td colspan="3">Rightwell House</td> <td>-CA-D-05</td> <td>500</td> <td></td> | Rightwell House | Rightwell House | | | -CA-D-05 | 500 | |
| Surrey, FE3 8DN PC4239-SEP-DEP Date 25/04/2023 Pile Callular Tank - CTRIA C Deckeded by 0A Innovyze Source Control 2020.1.3 Summary of Results for 100 year Return Period (+45%) Half Drain Time : 480 minutes. Storm Max Max Max Max Status Frent Level Depth Infiltration Volume (n) (1/0) (n²) Si min Summer 25.682 0.707 Si min Summer 25.483 0.686 20.6 742.1 0 K 30 min Summer 25.483 0.686 20.6 742.1 0 K 30 min Summer 25.483 0.686 20.6 742.1 0 K 30 min Summer 25.483 0.686 20.6 742.1 0 K 30 min Summer 25.483 0.688 20.6 742.1 0 K 30 min Summer 26.411 1.166 21.5 997.3 0 K 400 min Summer 26.411 1.166 21.5 997.3 0 K 400 min Summer 26.412 1.109 Summary Si Summer 26.411 1.166 Summary Si Summer 26.411 1.166 Summary Si Summer 26.411 Summer 26.411 1.166 Summary Si Summer 26.411 SUMMER SUMMER 25.411 SUMMER SUMMER 25.411 SUMMER SUMMER 25.411 SUMMER SUMMER 25.41 SUMM | Bretton, Peterborough | HYDRAULIC DESIGN CHECK | | | | | |
| Date 25/04/2023 Designed by 10 File Cellular Tank - CIRLA C Checked by 0A Source Control 2020.1.3 Source Control 2020.1.3 Summary of Results for 100 year Return Period (+458) Balf Drain Time : 400 minutes. Storm Max Max Max Status From Level Depth Infiltration Volume (m) (m) 0.1/s) 15 min Summer 25.509 0.334 91.6 657.0 0 K 10 min Summer 25.682 0.70 20.1 604.6 0 K 120 min Summer 25.682 0.70 20.1 604.6 0 K 120 min Summer 26.682 0.70 20.1 604.6 0 K 120 min Summer 26.682 0.70 20.1 604.6 0 K 120 min Summer 26.682 1.13 21.3 931.6 0 K 120 min Summer 26.688 1.13 21.2 91.6 0 K 120 min Summer 26.162 1.187 21.6 1012.6 0 K 120 min Summer 26.162 1.187 21.4 92.9 0 K 120 min Summer 25.1788 < | Surrev, PE3 8DW | PC4239-SEP-DEP | | | | Micco | |
| Base By Info Description Description Description File Cellular Tank - CIRIA C Checked by OA Description Description Innovyse Source Control 2020.1.3 Source Control 2020.1.3 Mark Max Max Max Status New Note New New Status Source Control 2020.1.3 New New New New Status New New New New New Status New New New New Status New New New New New Status New New New Status New New New New Status New New Status New New New Status | Date 25/04/2023 | | Designer | d by TO | | | |
| Source Control 2020.1.3 Source Control 2020.1.3 Summary of Results for 100 year Return Period (+45%) Haft Drain Time : 480 minutes. Storm Max Max Max Max Status Event Level Depth Infiltration Volume (n) Isomorphic for the state of the state | Filo Collular Tank - CIRIA C | | Chockod | $h_{V} \cap \lambda$ | | | Drainage |
| Source Control 2020.1.3 Source 25.080 0.534 19.6 O K Control 2020.1.3 Source Control 2020.1.0 Control 2020.1.2 Source 20.2 Source 25.080 0.052 Control 2020.1.2 Source Control 2020.1.2 <td>FILE CELLUIAL TAIK - CIKIA C</td> <td>•••</td> <td>Checked</td> <td>AU YUA</td> <td>000 1 0</td> <td></td> <td></td> | FILE CELLUIAL TAIK - CIKIA C | ••• | Checked | AU YUA | 000 1 0 | | |
| Summary of Results for 100 year Return Period (+45%) Half Drain Time : 400 minutes. Storm Max Max Max Status Front Town town town town town town town town t | Innovyze | | source (| Lontrol 2 | .020.1.3 | | |
| Summary Of Results for 100 year Recurs refloct (+203) Half Drain Time : 480 minutes. Storm Max Max Max Max Status Event Level Depth Infiltration Volume (m) (m) (l/s) (a*) 15 min Summer 25.509 0.534 19.6 457.0 0 K 30 min Summer 25.682 0.707 20.1 604.6 0 K 60 min Summer 25.682 0.707 20.1 604.6 0 K 120 min Summer 25.968 0.993 21.0 848.9 0 K 120 min Summer 26.0401 1.065 21.2 911.0 0 K 240 min Summer 26.151 1.166 21.5 997.3 0 K 480 min Summer 26.152 1.187 21.6 1014.5 0 K 720 min Summer 26.152 1.180 21.5 1008.6 0 K 720 min Summer 25.162 1.180 21.2 902.9 0 K 2160 min Summer 25.088 0.893 20.7 763.4 0 K 2800 min Summer 25.088 0.893 20.7 1 0 K 1440 min Summer 25.080 0.033 20.2 677.1 0 K 1260 min Summer 25.039 0.064 19.2 4.5 0 K 7200 min Summer 25.039 0.064 19.8 516.7 0 K 135 min Summer 10.355 0.0 6 1 10.0 140 1000 min Summer 17.823 0.0 6 140 120 min Summer 17.823 0.0 6 140 120 min Summer 17.823 0.0 6 140 | | | 100 | Datio | Dowio | | |
| Half Drain Time : 480 minutes. Storm Max Max Max Max Max Max Status Event logo logo logo logo status status 15 min Summer 25.680 0.534 logo ft logo ott ott 10 min Summer 25.680 0.933 21.0 848.9 ott ott 120 min Summer 26.040 1.065 21.2 911.0 ott ott 240 min Summer 26.159 1.184 21.6 1012.6 ott 360 min Summer 26.159 1.180 21.5 1008.6 ott 960 min Summer 26.152 1.180 21.5 1008.6 ott 9140 min Summer 25.308 0.733 20.2 0.8 2163 1440 min Summer 25.308 0.460 19.4 93.0 ott 1430 min Summer 25.309 0.64 18.2 54.5 ott 1400 min Summer 25.309 0.64 18.2 54.5 ott 1400 min Summer 25.309 0.64 19.8 516.7 ott 120 min Summer 25.309 | Summary of Resul | LS IC | <u>or 100 Y</u> e | ear Retui | in Period | 1 (+433) | |
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| Storm Max Max Max Max Max Max Status Is min Summer 25.680 0.534 19.6 457.0 0 K 30 min Summer 25.680 0.707 20.1 604.6 0 K 30 min Summer 25.680 0.695 21.10 848.9 0 K 120 min Summer 26.040 1.065 21.21 911.0 0 K 240 min Summer 26.141 1.146 21.6 1012.6 0 K 360 min Summer 26.152 1.180 21.5 907.3 0 K 440 min Summer 26.162 1.187 21.6 1012.6 0 K 960 min Summer 26.163 1.60 21.5 1008.6 0 K 2160 min Summer 25.010 0.133 11.4 93.0 0 K 2160 min Summer 25.039 0.60 13.4 393.0 0 K | 11411 | L DIUI | | 100 1011000 | | | |
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| 7200 min Summer 25:039 0.643 16.2 54.5 0 K 10080 min Summer 25:022 0.047 17.0 39.8 0 K 15 min Winter 25:579 0.604 19.8 516.7 0 K Storm Rain Flooded Time-Peak Event (mm/hr) Volume (mins) (m ³) 15 min Summer 153.845 0.0 48 30 min Summer 101.355 0.0 61 60 min Summer 63.293 0.0 88 120 min Summer 23.390 0.0 140 180 min Summer 17.823 0.0 428 600 min Summer 12.600 0.0 492 720 min Summer 12.600 0.0 492 720 min Summer 4.705 0.0 1372 2860 min Summer 4.705 0.0 1372 2860 min Summer 3.607 0.0 1372 2860 min Summer 1.978 0.0 3184 7200 min Summer 1.978 0.0 3184 | 5760 min Summer | 25.23 | 0.262 | 18 | .8 224.3 | ОК | |
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| 15 min Winter 25.579 0.604 19.8 516.7 ОК Storm Rain Flooded Time-Peak (mins) Event (mm/hr) Volume (mins) 15 min Summer 153.845 0.0 48 30 min Summer 101.355 0.0 61 60 min Summer 38.008 0.0 140 180 min Summer 23.390 0.0 250 360 min Summer 17.823 0.0 362 480 min Summer 12.600 0.0 492 720 min Summer 12.600 0.0 492 720 min Summer 11.083 0.0 558 960 min Summer 3.677 0.0 1372 2880 min Summer 3.677 0.0 1372 2880 min Summer 1.612 0.0 3832 8640 min Summer 1.612 0.0 3832 8640 min Summer 1.612 0.0 3832 8640 min Summer 1.185 0.0 43 | 10080 min Summer | 25.02 | 2 0.047 | 17 | .0 39.8 | 0 K | |
| Storm Rain Flooded Time-Peak (mins) 15 min Summer 153.845 0.0 48 30 min Summer 101.355 0.0 61 60 min Summer 38.008 0.0 140 180 min Summer 38.008 0.0 140 180 min Summer 23.390 0.0 250 360 min Summer 11.083 0.0 428 600 min Summer 11.083 0.0 558 960 min Summer 8.983 0.0 692 1440 min Summer 3.677 0.0 1372 280 min Summer 3.677 0.0 1374 720 min Summer 1.612 0.0 3832 8640 min Summer 1.364 0.0 4432 10080 min Summer 1.364 <td< td=""><td>15 min Winter</td><td>25.57</td><td>9 0.604</td><td>19</td><td>.8 516.7</td><td>O K</td><td></td></td<> | 15 min Winter | 25.57 | 9 0.604 | 19 | .8 516.7 | O K | |
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| Storm Rain (mm/hr) Flooded Volume (m³) Time-Peak (mins) 15 min Summer 153.845 0.0 48 30 min Summer 101.355 0.0 61 60 min Summer 63.293 0.0 88 120 min Summer 28.521 0.0 140 180 min Summer 28.521 0.0 362 480 min Summer 12.600 0.0 428 600 min Summer 12.600 0.0 492 720 min Summer 11.083 0.0 692 1440 min Summer 8.983 0.0 692 1440 min Summer 3.677 0.0 1372 2880 min Summer 3.677 0.0 1372 2880 min Summer 1.978 0.0 3184 7200 min Summer 1.612 0.0 3832 8640 min Summer 1.364 0.0 4432 100 | | | | | | | |
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| Intervent (ma), in/, in/, in/, in/, in/, in/, in/, in/ | Stor | m + | Rain (mm/hr) | Volume | (mins) | | |
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| 120 min Summer 38.008 0.0 140 180 min Summer 28.521 0.0 194 240 min Summer 23.390 0.0 250 360 min Summer 17.823 0.0 362 480 min Summer 14.689 0.0 428 600 min Summer 12.600 0.0 492 720 min Summer 11.083 0.0 558 960 min Summer 8.983 0.0 692 1440 min Summer 3.677 0.0 1372 2880 min Summer 3.677 0.0 1760 4320 min Summer 2.565 0.0 2504 5760 min Summer 1.978 0.0 3184 7200 min Summer 1.364 0.0 4432 10080 min Summer 1.364 0.0 4432 10080 min Summer 1 | 30 min 60 min | Summe | r 63 203 | | 61 88 | | |
| 180 min Summer 28.521 0.0 194 240 min Summer 23.390 0.0 250 360 min Summer 17.823 0.0 362 480 min Summer 14.689 0.0 428 600 min Summer 12.600 0.0 492 720 min Summer 11.083 0.0 558 960 min Summer 8.983 0.0 692 1440 min Summer 6.564 0.0 966 2160 min Summer 3.677 0.0 1372 2880 min Summer 3.677 0.0 1760 4320 min Summer 1.978 0.0 3184 7200 min Summer 1.612 0.0 3832 8640 min Summer 1.364 0.0 4432 10080 min Summer 1.185 0.0 5112 15 min Winter 153.845 0.0 48 | 120 min | Summe | er 38.008 | 0.0 | 140 | | |
| 240 min Summer 23.390 0.0 250 360 min Summer 17.823 0.0 362 480 min Summer 14.689 0.0 428 600 min Summer 12.600 0.0 492 720 min Summer 11.083 0.0 558 960 min Summer 8.983 0.0 692 1440 min Summer 6.564 0.0 966 2160 min Summer 4.705 0.0 1372 2880 min Summer 3.677 0.0 1760 4320 min Summer 1.978 0.0 3184 7200 min Summer 1.612 0.0 3832 8640 min Summer 1.364 0.0 4432 10080 min Summer 1.185 0.0 5112 15 min Winter 153.845 0.0 48 | 180 min | Summe | er 28.521 | 0.0 | 194 | | |
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| 720 min Summer 11.083 0.0 558 960 min Summer 8.983 0.0 692 1440 min Summer 6.564 0.0 966 2160 min Summer 4.705 0.0 1372 2880 min Summer 3.677 0.0 1760 4320 min Summer 2.565 0.0 2504 5760 min Summer 1.978 0.0 3184 7200 min Summer 1.612 0.0 3832 8640 min Summer 1.364 0.0 4432 10080 min Summer 1.185 0.0 5112 15 min Winter 153.845 0.0 48 | 400 min 600 min | Summe | er 12.600 |) 0.0 | 428 492 | | |
| 960 min Summer 8.983 0.0 692 1440 min Summer 6.564 0.0 966 2160 min Summer 4.705 0.0 1372 2880 min Summer 3.677 0.0 1760 4320 min Summer 2.565 0.0 2504 5760 min Summer 1.978 0.0 3184 7200 min Summer 1.612 0.0 3832 8640 min Summer 1.364 0.0 4432 10080 min Summer 1.185 0.0 5112 15 min Winter 153.845 0.0 48 | 720 min | Summe | er 11.083 | 0.0 | 558 | | |
| 1440 min Summer 6.564 0.0 966 2160 min Summer 4.705 0.0 1372 2880 min Summer 3.677 0.0 1760 4320 min Summer 2.565 0.0 2504 5760 min Summer 1.978 0.0 3184 7200 min Summer 1.612 0.0 3832 8640 min Summer 1.364 0.0 4432 10080 min Summer 1.185 0.0 5112 15 min Winter 153.845 0.0 48 | 960 min | Summe | er 8.983 | 0.0 | 692 | | |
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| 10080 min Summer 1.185 0.0 5112 15 min Winter 153.845 0.0 48 | 8640 min | Summe | er 1.364 | 0.0 | 4432 | | |
| | 10080 min | Summe Winto | er 1.185 er 153 945 | | 5112 1° | | |
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| HaskoningDHV UK Limited Pa | | | | | Page 2 |
|--|------------------------|--------------|------------------|------------------|----------|
| Rightwell House PC4239-RHD-ZZ-XX-CA-D-0500 | | | | | |
| Bretton, Peterborough | HYDRAULIC DESIGN CHECK | | | | |
| Surrey, PE3 8DW | PC4239-SEP-DEP | | | | Micco |
| Date 25/04/2023 | Designed | d by IO | | | |
| File Cellular Tank - CIRIA C | Checked | by OA | | | Dialnage |
| Innovyze | Source (| Control 20 | 20 1 3 | | |
| | 504100 | 201101 20 | 20.1.0 | | |
| Summary of Results f | or 100 v | ear Return | Perio | 1 (+4.5%) | |
| | 01 100 1 | | 1 101100 | <u>a († 100)</u> | |
| Storm Max | c Max | Max | Max | Status | |
| Event Leve | el Depth : | Infiltration | Volume | | |
| (m) | (m) | (1/s) | (m³) | | |
| 30 min Winter 25.7 | 74 0.799 | 20.4 | 683.2 | ОК | |
| 60 min Winter 25.9 | 58 0.983 | 20.9 | 840.4 | ΟK | |
| 120 min Winter 26.1 | 07 1.132 | 21.4 | 967.8 | O K | |
| 180 min Winter 26.1 | 98 1.223 | 21.7 | 1045.7 | O K | |
| 360 min Winter 26.3 | 01 1.200 39 1.364 | 21.9 | 1166.6 | 0 K 0 K | |
| 480 min Winter 26.3 | 70 1.395 | 22.2 | 1192.7 | O K | |
| 600 min Winter 26.3 | 69 1.394 | 22.2 | 1191.5 | O K | |
| 720 min Winter 26.3 | 57 1.382 | 22.1 | 1181.7 | ОК | |
| 960 min Winter 26.3 1440 min Winter 26.1 | 13 1.338 76 1 201 | 22.0 | 1143.9 1026 4 | 0 K | |
| 2160 min Winter 25.9 | 34 0.959 | 20.9 | 820.1 | ОК | |
| 2880 min Winter 25.7 | 02 0.727 | 20.2 | 621.9 | ΟK | |
| 4320 min Winter 25.3 | 22 0.347 | 19.0 | 296.9 | ОК | |
| 5760 min Winter 25.0 7200 min Winter 25.0 | 81 0.106 21 0.046 | 18.3 | 5 90.3 5 38 9 | O K | |
| 8640 min Winter 25.0 | 14 0.039 | 14.1 | 33.0 | 0 K | |
| 10080 min Winter 25.0 | 09 0.034 | 12.3 | 28.7 | ΟK | |
| | | | | | |
| | | | | | |
| Storm | Pain | Elooded Ti | mo-Posk | | |
| Event | (mm/hr) | Volume | (mins) | | |
| | | (m³) | | | |
| 30 min Wint | er 101 355 | 5 0 0 | 61 | | |
| 60 min Wint | er 63.293 | 0.0 | 88 | | |
| 120 min Wint | er 38.008 | 3 0.0 | 140 | | |
| 180 min Wint | er 28.521 | 0.0 | 196 | | |
| 240 min Wint 360 min Wint | er 23.390 er 17.823 | | 250 360 | | |
| 480 min Wint | er 14.689 | 0.0 | 468 | | |
| 600 min Wint | er 12.600 | 0.0 | 560 | | |
| 720 min Wint | er 11.083 | 3 0.0 | 592 | | |
| 960 min Wint | er 8.983 er 6.567 | | 744 1050 | | |
| 2160 min Wint | er 4.705 | 5 0.0 | 1480 | | |
| 2880 min Wint | er 3.677 | 7 0.0 | 1888 | | |
| 4320 min Wint | er 2.565 | 5 0.0 | 2612 | | |
| 5760 min Wint | er 1.978 | | 3192 | | |
| 8640 min Wint | er 1.364 | 1 0.0 | 4304 | | |
| 10080 min Wint | er 1.185 | 5 0.0 | 5104 | | |
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| ©198 | 32-2020 I | nnovyze | | | |

| HaskoningDHV UK Limited | HaskoningDHV UK Limited Page 3 | | | | |
|---|---|----------|--|--|--|
| Rightwell House | PC4239-RHD-ZZ-XX-CA-D-0500 | | | | |
| Bretton, Peterborough | HYDRAULIC DESIGN CHECK | | | | |
| Surrey, PE3 8DW | PC4239-SEP-DEP | Micco | | | |
| Date 25/04/2023 | Designed by IO | | | | |
| File Cellular Tank - CIRIA C | Checked by OA | Digiliga | | | |
| Innovyze | Source Control 2020.1.3 | | | | |
| File Cellular Tank - CIRIA C Checked by OA Innovyze Source Control 2020.1.3 Rainfall Details Rainfall Model FEH Return Period (years) 100 FEH Rainfall Version 2013 Site Location GB 652500 307500 TG 52500 07500 Data Type Data Type Point Summer Storms Yes Winter Storms Yes Cv (Summer) 0.750 Cv (Summer) 0.840 Shortest Storm (mins) 15 Longest Storm (mins) 10080 Climate Change % +45 Time Area Diagram Total Area (ha) 1.747 Time (mins) Area Time (mins) Area From: To: Time (mins) Area | | | | | |
| 0 6 0.292 | 12 18 0.291 24 30 0.291 10 24 20 26 201 | | | | |
| ©19 | 82-2020 Innovyze | | | | |

| HaskoningDHV UK Limited | Page 4 | |
|------------------------------|----------------------------|----------|
| Rightwell House | PC4239-RHD-ZZ-XX-CA-D-0500 | |
| Bretton, Peterborough | HYDRAULIC DESIGN CHECK | |
| Surrey, PE3 8DW | PC4239-SEP-DEP | Mirro |
| Date 25/04/2023 | Designed by IO | Dcainago |
| File Cellular Tank - CIRIA C | Checked by OA | Drainage |
| Innovyze | Source Control 2020.1.3 | |

Model Details

Storage is Online Cover Level (m) 27.775

Cellular Storage Structure

Invert Level (m) 24.975 Safety Factor 5.0 Infiltration Coefficient Base (m/hr) 0.36000 Porosity 0.95 Infiltration Coefficient Side (m/hr) 0.36000

Depth (m) Area (m²) Inf. Area (m²) Depth (m) Area (m²) Inf. Area (m²)

| 0.000 | 900.0 | 900.0 | 1.601 | 0.0 | 1140.0 |
|-------|-------|--------|-------|-----|--------|
| 1.600 | 900.0 | 1140.0 | | | |



Royal HaskoningDHV is an independent, international engineering and project management consultancy with over 138 years of experience. Our professionals deliver services in the fields of aviation, buildings, energy, industry, infrastructure, maritime, mining, transport, urban and rural development and water.

Backed by expertise and experience of 6,000 colleagues across the world, we work for public and private clients in over 140 countries. We understand the local context and deliver appropriate local solutions.

We focus on delivering added value for our clients while at the same time addressing the challenges that societies are facing. These include the growing world population and the consequences for towns and cities; the demand for clean drinking water, water security and water safety; pressures on traffic and transport; resource availability and demand for energy and waste issues facing industry.

We aim to minimise our impact on the environment by leading by example in our projects, our own business operations and by the role we see in "giving back" to society. By showing leadership in sustainable development and innovation, together with our clients, we are working to become part of the solution to a more sustainable society now and into the future.

Our head office is in the Netherlands, other principal offices are in the United Kingdom, South Africa and Indonesia. We also have established offices in Thailand, India and the Americas; and we have a long standing presence in Africa and the Middle East.



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Appendix B – Discharge Calculations for North Section of Access Road

Appendix C – MicroDrainage Soakaway Volume Validation Calculations

Appendix **BD** – Drawings

C282-MU-Z-XD-00118-01_F0<u>4</u>3 – Substation Outline Drainage Strategy – Infiltration Method



NOTES:

- 1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
- 2. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM.
- 3. EXISTING GROUND LEVELS ARE TAKEN FROM 2014 LIDAR SURVEY DATA.
- 4. RECESSED STEEL MANHOLE COVERS TO COMPLY WITH BS EN1449:1991 AND GALVANISED TO COMPLY WITH BS EN ISO 1461.
- 5. ALL BELOW GROUND PIPEWORK TO BE Ø225 NOMINAL SIZE POLYPIPE 'POLYSEWER' TO WIS 4-35-01. TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
- 6. FUEL / OIL INTERCEPTOR TO BE OPERATED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
- 7. SOAKAWAY UNIT LOCATIONS ARE INDICATIVE AND WILL BE CONFIRMED IN CONJUNCTION WITH THE FINAL SUBSTATION LAYOUTS AT DETAILED DESIGN.

LEGEND:

| PROPOSED SURFACE WATER PIPEWORK |
|-------------------------------------|
| PROPOSED SURFACE WATER MANHOLE |
| PROPOSED FUEL / OIL PIPEWORK |
| PROPOSED FUEL / OIL INTERCEPTOR |
| PROPOSED GEOCELLULAR SOAKAWAY UNIT |
| EXISTING GRANULAR SOILS |
| PROPOSED CUT |
| PROPOSED FILL |
| DCO BOUNDARY |

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| | Project: | SHERINGH | AM SHOAL & DUDGEON WINDFARM ONSHORE CABLE FEED |
| | Revision: | F04 | Dwg Title: SUBSTATION OUTLINE DRAINAGE STRATEGY |
| | Suitabilit | y: _ | INFILTRATION METHOD |
| | @ A1: | 1:2000 | Dwg No: C282-MU-Z-XD-00118-01 |
| | Sheets: | 1 OF 1 | Purpose of Issue: FOR INFORMATION |
| | Internal Proj.Ref: | 1002-000591 | Client Ref Number: |
| | | | |