

Title	Drainage Technical Note
Job Name	Stoneshollow Solar Farm, Barlestone
Job number	23-309
Date	16/03/2026

1 INTRODUCTION

- 1.1.1 This Technical Note has been prepared to support proposed amendments to the Stoneshollow Solar Farm planning application 21/01395/FUL which was consented in August 2022.
- 1.1.2 The amendments are to be considered under Section 73 of the Town and Country Planning Act (hereafter referred to as the 'Section 73' application).
- 1.1.3 The note is supported by plans and typical details of the features, enclosed with this note.
- 1.1.4 The planning application was supported by a Flood Risk Assessment produced by RPS Group (v001, November 2021), which should be read in conjunction with this note.
- 1.1.5 This note also reflects a similar technical note produced by Calibro in support of a Discharge of Condition application ref: 23/00347/DISCON, which was discharged in June 2023. The 2023 technical note is enclosed with this note.
- 1.1.6 The FRA included a concept drainage strategy, with mitigation comprising the use of gravel bases to accommodate roof runoff from containerised infrastructure, allowing water to percolate into the ground. The subsequent 2023 technical note explained the process of producing more detailed designs based on the FRA concepts. This note explains how these details have been amended in accordance with the revised site designs.

2 SITE GEOLOGY AND PROPOSALS

2.1 Geology

- 2.1.1 The site is approximately 106ha of agricultural land which is predominantly used for arable and grazing.
- 2.1.2 According to British Geological Survey (BGS) data the site is underlain by mudstone geology which typically has poor permeability. The SoilScapes website defines the soils beneath the site to have impeded drainage.

2.2 Proposals and Amendments

- 2.2.1 The site proposals include solar panels and associated containerised infrastructure (such as hybrid energy storage and inverter units as well as spares containers, switchgear or similar). The containers are proposed to be sited on gravel bases and dispersed across the site.
- 2.2.2 According to the FRA, the combined area of the dispersed containers will measure approximately 0.29ha, which equates to approximately 0.27% of the total site area. The remaining site will be permeable, covered either by grass or access tracks, which will be constructed from permeable materials.
- 2.2.3 The specific amendments that are the subject of the Section 73 application, and therefore this note, are:
- Realigning some access tracks; and
 - Relocating and amending the layout and therefore footprint of hybrid energy storage/inverter units.
- 2.2.4 The amended hybrid energy storage and inverter units would be in two arrangements, as shown on the layout enclosed with this note.
- 2.2.5 It should be noted that the subterranean arrangements differ between the infrastructure within the battery inverter stations. The battery and transformer units are proposed to be sited on solid concrete slabs and the inverter units are proposed to be sited on narrow concrete columns. The would sit on a subterranean concrete slab which itself would be overlain by a gravel base. .
- 2.2.6 For infrastructure with solid concrete slabs, it is proposed to utilise the permeable track area surrounding the infrastructure for storing runoff.
- 2.2.7 For the inverters, it is proposed to utilise the voids in between the concrete plinths and the surrounding permeable track for storing runoff.
- 2.2.8 Figure 2-1 and Figure 2-2 below shoes the subterranean arrangements of the infrastructure proposed within the battery inverter stations scattered across the site.

Figure 2-1 Battery Unit and Transformer Unit Subterranean Arrangements

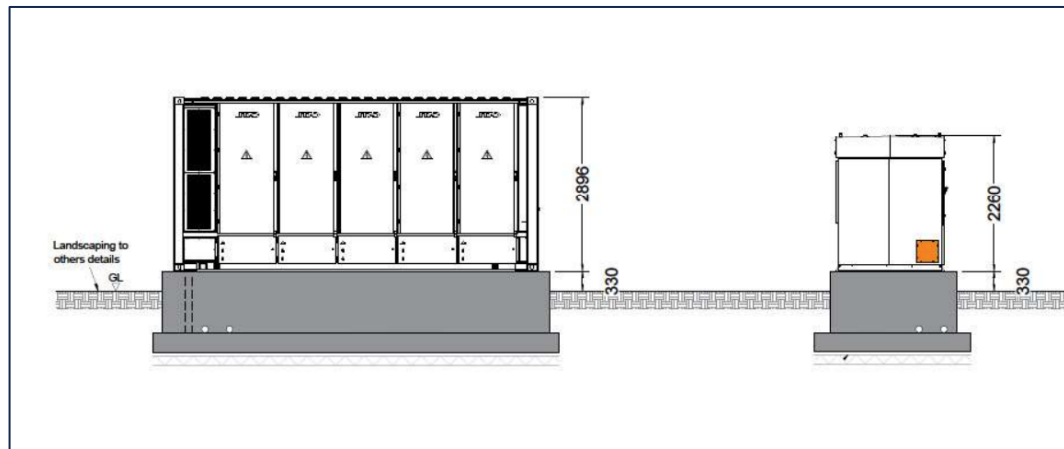
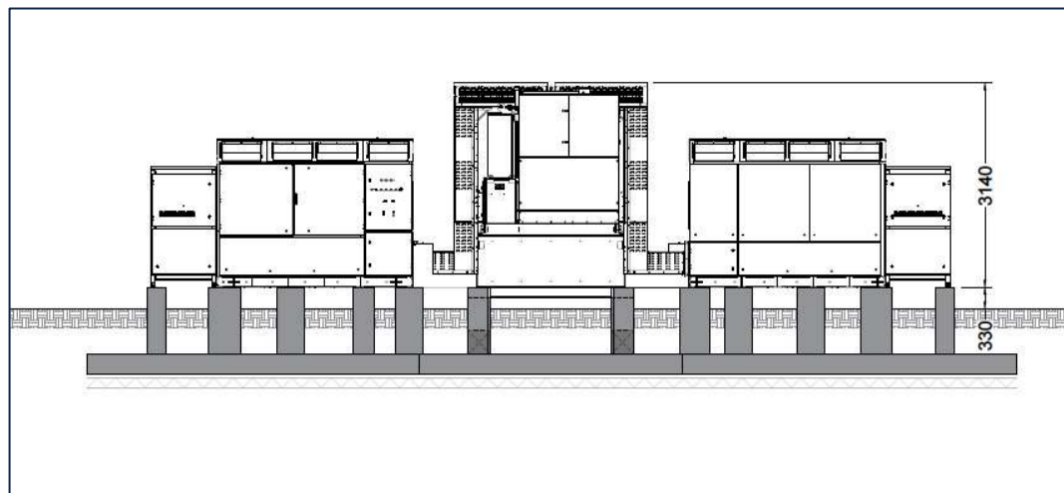


Figure 2-2 Inverter Unit Subterranean Arrangement



2.2.9 As explained in the previous documentation referred to above, the access tracks would be permeable and allow rainwater to percolate through them. Therefore, a minor relocation of them would have negligible impacts on drainage. Consequently, amendments to the access tracks have not been explored further by this report.

2.2.10 The site layout plan is enclosed with this note.

2.2.11 As with the main application, the anticipated lifetime of the proposed infrastructure is 40 years.

3 SECTION 73 DRAINAGE AMENDMENTS

3.1.1 The gravel bases beneath the infrastructure and the permeable access tracks surrounding the infrastructure within the inverter and battery stations across the site would discharge water via natural soakage rather than a fitted outfall. However, as discussed above, it is assumed that infiltration rates in the underlying ground would be

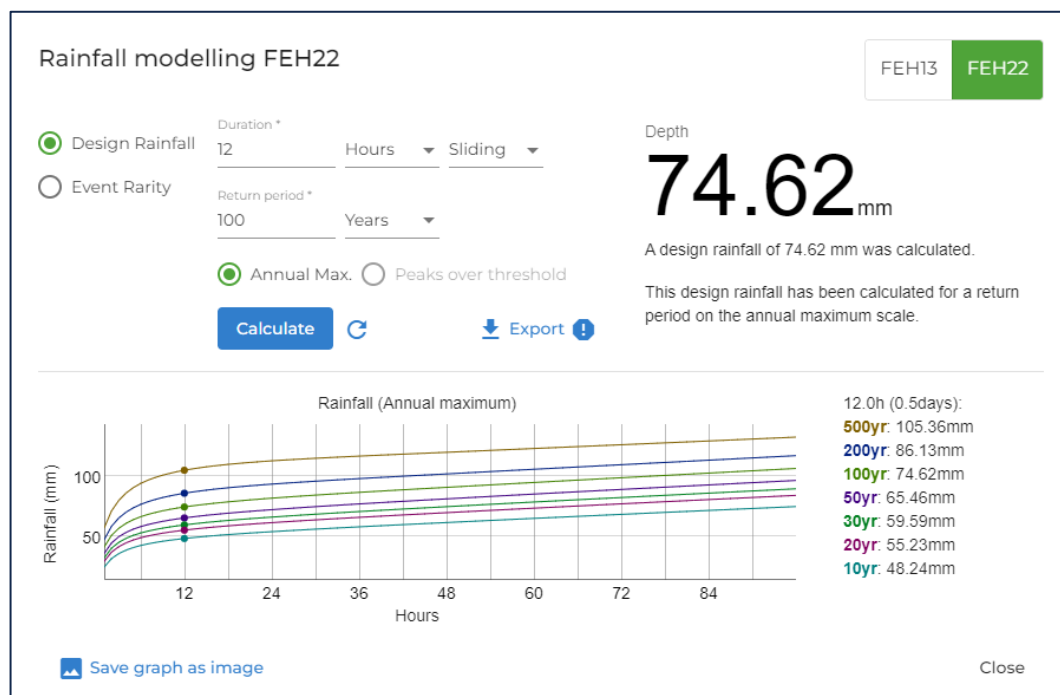
very low. Therefore, the gravel bases have been sized to store runoff generated during a 1 in 100 year, 12 hour storm, inclusive of climate change and with no infiltration or outflow allowance in the calculations.

- 3.1.2 If infiltration is higher than expected on the site, then the proposed gravel bases and permeable access tracks would provide further capacity.
- 3.1.3 This approach was utilised in the condition discharge application, which was subsequently accepted and discharged.

3.2 Storage Requirements

- 3.2.1 To calculate the volume of runoff generated from the containers during the 1 in 100 year, 12 hour storm, the Depth-Duration-Frequency model in the Flood Estimation Handbook (FEH) was used. The FEH predicted rainfall depth for the present day is 74.62mm, as shown in Figure 3-1.

Figure 3-1 Depth-Duration Curve Model Results



- 3.2.2 In accordance with the NPPF and the Flood Risk and Coastal Change PPG, an allowance for climate change must be applied to the design rainfall. The proposed site is estimated to have an anticipated lifetime of 40 years. The site lies within the Tame Anker and Mease Management Catchment. For a development with a 40-year lifetime, the central allowance for the 2070s epoch is applied. This equates to a 25% uplift in rainfall rates. Therefore, the 1 in 100 year, 12 hour + 25% (the design event) rainfall depth is 93.3mm.

- 3.2.3 The footprint areas for the various infrastructure, together with the calculated runoff and storage capacity of their gravel bases/permeable track surrounds are summarised in Table 3-1.

Table 3-1 Infrastructure Runoff and Storage

Containerised Infrastructure	Gravel Base/Permeable Track Area (m ²)	Runoff Generated (m ³)	Depth (m)	Gravel Base/Permeable Track Storage (m ³)
Spare parts	27.4	2.6	0.4	3.3
Customer Switchgears	45.1	4.2	0.4	5.4
Battery Units	65.0	6.1	0.5	7.8
Transformers	56.8	5.3	0.5	6.8
Inverter Units (Twin Skid Arrangement)	63.3	5.9	0.4	7.6
Inverter Units (Single Skid Arrangement)	39.0	3.6	0.4	4.7
Miscellaneous Infrastructure	19.3	1.8	0.4	2.3

- 3.2.4 It should be noted that the gravel bases would extend at least 300mm from each container edge and be at least 400mm deep.
- 3.2.5 The calculations have reflected the solid concrete foundations beneath the battery and transformer units by taking the footprint area of the concrete foundations away from the gravel base/permeable track area.
- 3.2.6 For the inverter units, spare parts container, customer switchgear and miscellaneous infrastructure, the entirety of the gravel base/permeable track areas have been made available for storage to represent the voids in between the concrete columns under the inverter units and the lack of subterranean arrangements underneath the spare parts container, customer switchgears and miscellaneous infrastructure. However, the calculations ensure a surplus of storage provision to account for the volume lost from the columns.
- 3.2.7 The gravel bases for the customer switchgears and spare parts container will extend 300mm from all edges of the containers and be at least 400mm deep
- 3.2.8 Figure 3-2 and Figure 3-3 below shows the arrangement of the permeable access track surrounds at the battery inverter stations scattered across the site.

Figure 3-2 Battery Inverter Stations (Twin Skid Arrangement) Permeable Surround Tracks

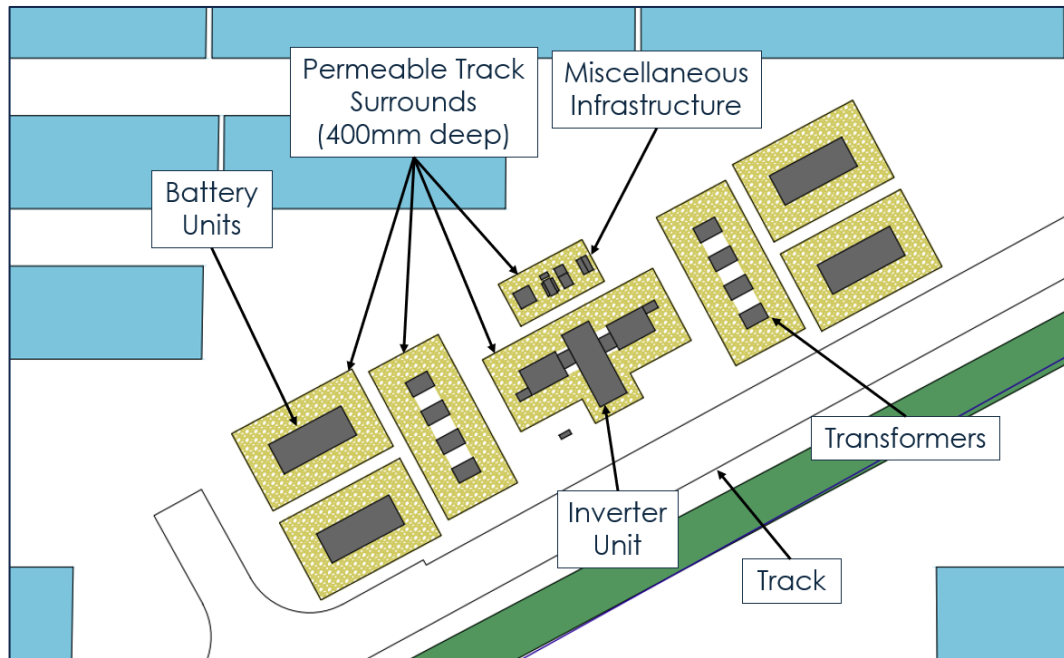
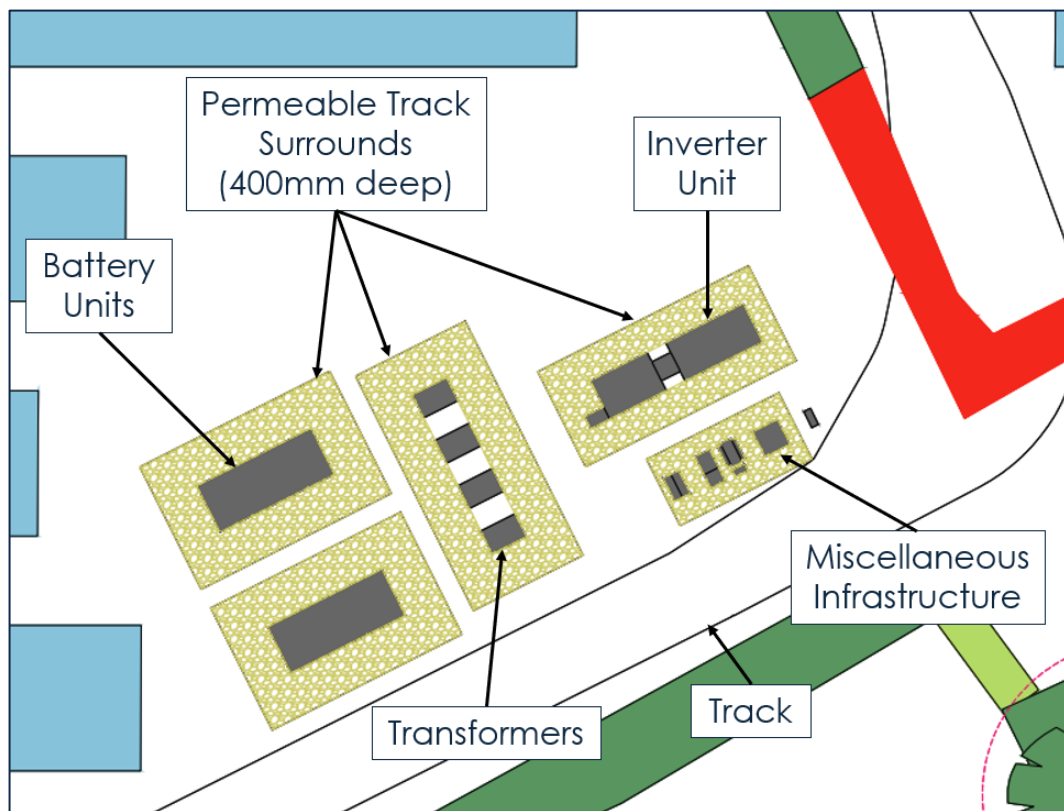


Figure 3-3 Battery Inverter Stations (Single Skid Arrangement) Permeable Surround Tracks



- 3.2.9 The entire gravel base/permeable track area has been utilised for the above runoff calculations to ensure that they account for water falling on the gravel bases/permeable tracks themselves as well as the containers.
- 3.2.10 Where relevant, the storage calculations have discounted solid concrete foundation bases.
- 3.2.11 The above approach was agreed in principle with the Lead Local Flood Authority (LLFA) as part of the previous condition discharge process, relevant correspondence is enclosed with this note.

3.3 Design for Exceedance

- 3.3.1 As demonstrated above, the storage capacity of the gravel bases and permeable track surrounds would exceed the volume of runoff in a design event, providing some additional capacity for an exceedance event.
- 3.3.2 In the unlikely event the capacity of the beds and the permeable track surrounds were exceeded, water would slowly dissipate overland onto surrounding grassed areas, where it would absorb into the ground as per the existing site.
- 3.3.3 The proposed infrastructure could be raised on plinths or pads which would prevent flood damage in an exceedance event.

3.4 Water Quality

- 3.4.1 The SuDS Manual (CIRIA C753) states that the design of surface water drainage should consider minimising contaminants in surface water runoff discharged from the site. The level of treatment required depends on the proposed land use, according to the pollution hazard indices. To provide adequate treatment, the SuDS mitigation indices for the development must be equal to, or exceed, the pollution hazard indices.
- 3.4.2 Surface water runoff from the containerised infrastructure is likely to have an extremely low sediment and pollution content. The closest equivalent considered by Table 26.2 of the SuDS Manual is residential roofs, which present a Very Low hazard to water quality.
- 3.4.3 The closest SuDS type to gravel beds/permeable tracks considered by Table 26.4 is an infiltration trench. As demonstrated in Table 3-2, the proposed gravel bases (infiltration trench) are more than sufficient to mitigate the likely low levels of pollutants expected.

Table 3-2 Water Quality Indices (as per C753 The SuDS Manual)

		Pollution Hazard Level	Total suspended solids	Metals	Hydrocarbons
Land Use	Residential roofs	Very Low	0.2	0.2	0.05

Infiltration trench	Mitigation Indices	-	0.4	0.4	0.4
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3.5 Maintenance Regime

3.5.1 Maintenance of SuDS features is essential for the operation of the surface water drainage system.

3.5.2 An indicative maintenance schedule is included as

3.5.3 Table 3-3. Maintenance would be the responsibility of the site operator. A full maintenance regime should be produced as part of the detailed design to ensure that the drainage system remains operational.

Table 3-3 Proposed Drainage System Maintenance Plan

Drainage Component	Required Action	Typical Frequency
Subbase storage	Remove litter and debris from subbase storage	As required
	Inspect surface for blockages, clogging, standing water and structural damage	Monthly
	Inspect for silt accumulation and establish appropriate silt removal frequencies	Six monthly, or as required
	Replacement of gravel	As required

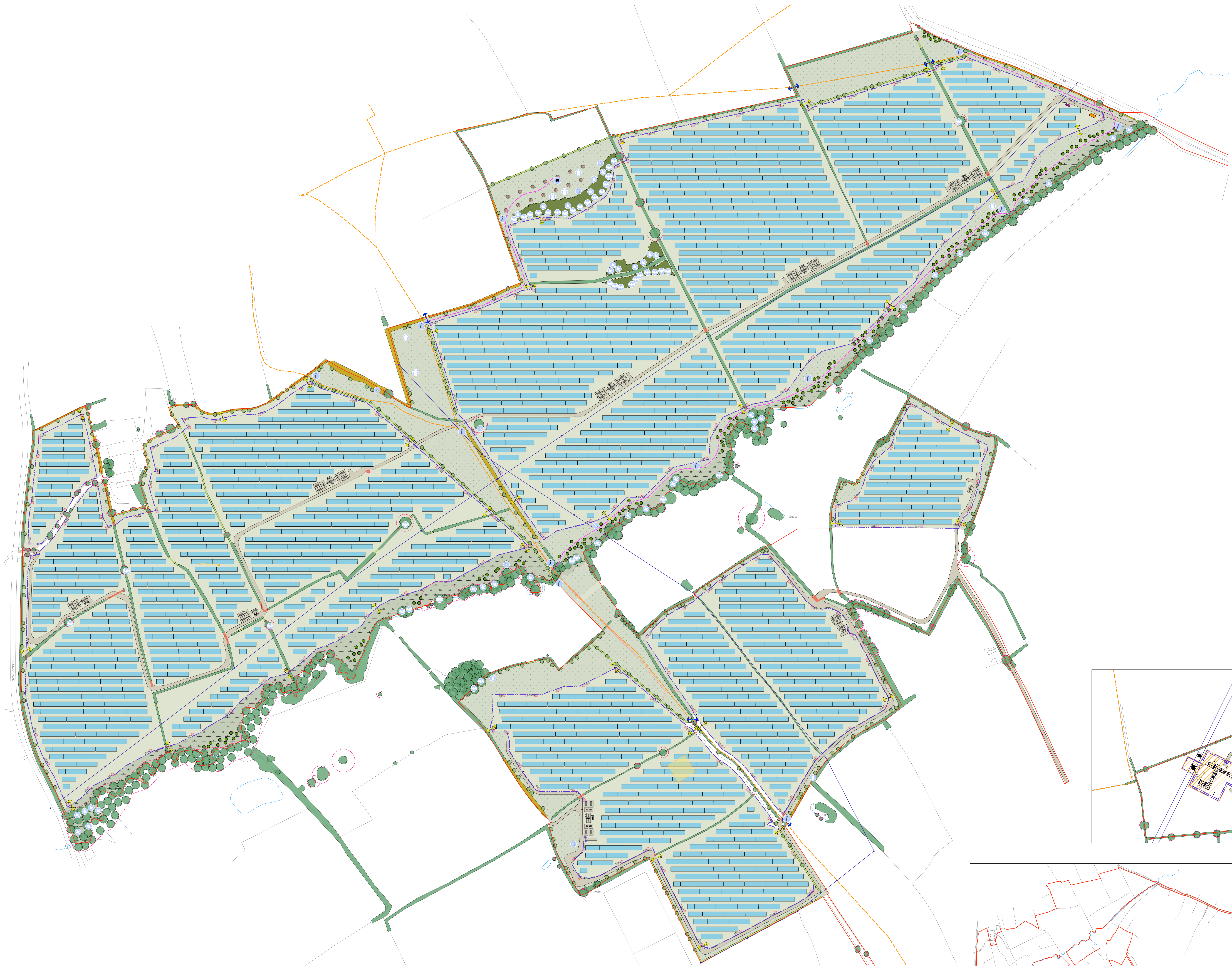
4 SUMMARY

- 4.1.1 Minor amendments to the solar farm proposals are to be considered under a Section 73 application.
- 4.1.2 Calibro has been appointed to promote a drainage approach for the amendments that aligns with the drainage strategies proposed at application (21/01395/FUL) and condition discharge (23/00347/DISCON) stages, both of which were consented.
- 4.1.3 Due to the underlying ground conditions, it is presumed that the infiltration rates on the site would be very low. Therefore, the methodology used to address the conditions takes a conservative approach and makes no allowance for infiltration in the calculations. As a result, no soakage testing is required.
- 4.1.4 The vast majority of the site will be grass covered with solar arrays. The arrays will allow rainwater to fall onto the grass and absorb into the ground. The cessation of intensive agricultural practices, including ploughing of arable fields, will result in a betterment in terms of runoff and soil erosion.
- 4.1.5 The access tracks and temporary construction compound will be formed from permeable gravel and therefore allow rainfall to percolate into the ground as per the existing site. Minor amendments to the locations of these would therefore not require re-assessment.
- 4.1.6 The only hardstanding on site will be dispersed containerised infrastructure such as battery units, transformers, inverter units, spare parts container, customer switchgears and miscellaneous infrastructure. Their combined area will cover less than 0.3% of the site area. To mitigate potential impacts on surface water, runoff from their roofs will be directed to their gravel bases and permeable tracks surrounding the infrastructure within the battery inverter stations, which will be wrapped in permeable membranes to allow water to soak into the ground as per the existing site.
- 4.1.7 The gravel bases and permeable track surrounds have been sized to accommodate runoff during a design rainfall event, i.e., 1 in 100 year, 12 hour duration storm with a 25% uplift to allow for the impacts of climate change. Bases that are 400mm deep and extend at least 300mm from the edge of the containers will provide more storage than the volume of runoff generated in a design event, to allow for exceedance.
- 4.1.8 In the unlikely event the capacity of the bases and permeable tracks were exceeded, water would slowly disperse across grassed areas to soak into the ground, as per the existing site. The containers would be raised on plinths to negate the risk of damage to them.
- 4.1.9 All infrastructure will be maintained by the operator in accordance with the recommendations in the CIRIA SuDS Manual.

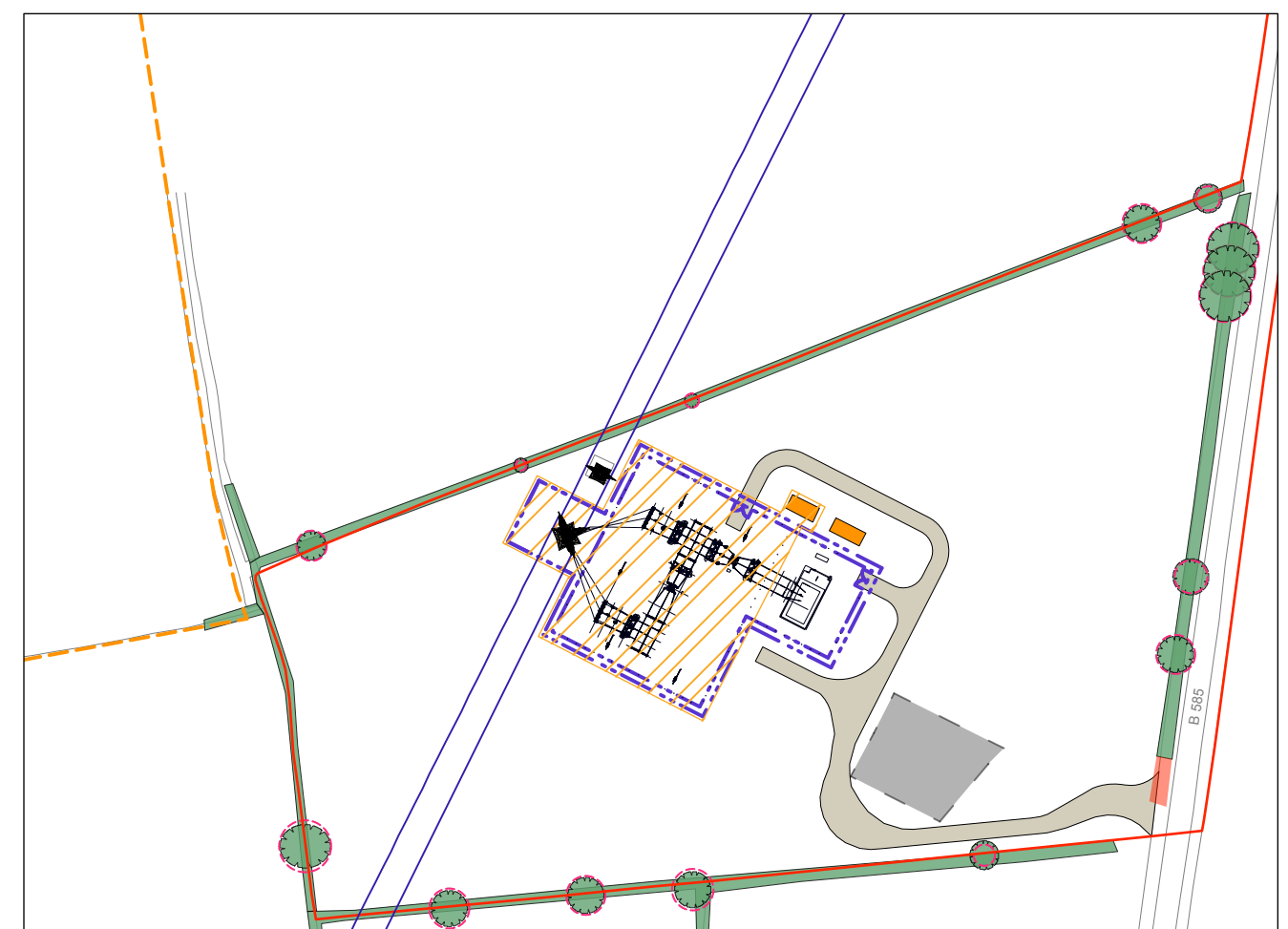
Enclosures

Section 73 Site Layout Plan

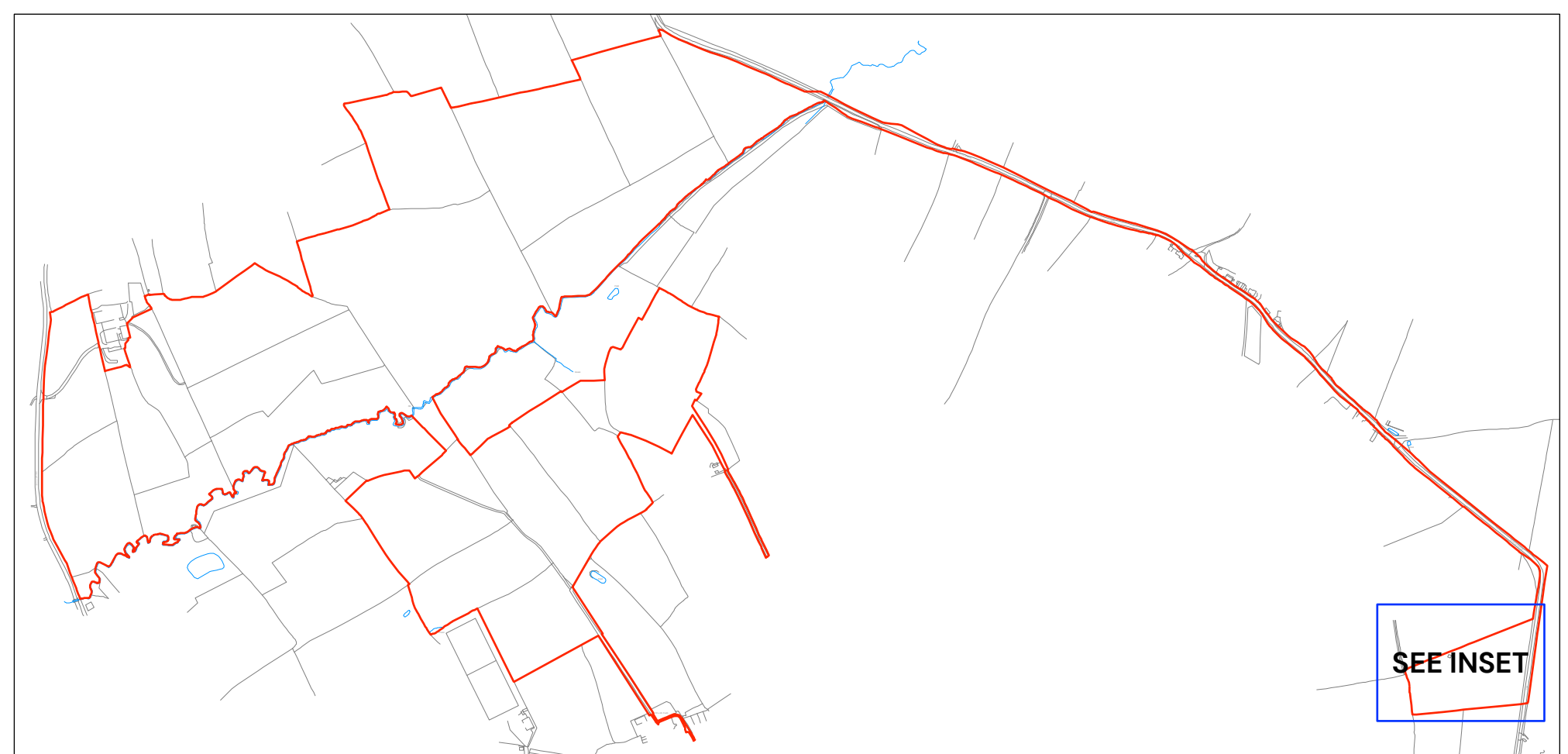
Condition Discharge Drainage Note including LLFA correspondence



- KEY**
- Site boundary
 - Vegetation to be retained
 - hedgerows within leasid land currently taller than 4m height shall be managed to maintain current height
 - hedgerows within leasid land currently shorter than 4m height shall be managed to grow up to and be maintained at 3-4m height
 - hedgerows outside of leasid land are out of applicants control
 - Vegetation to be enhanced
 - gap/thinning in hedgerows to be infilled with native hedgerow mix at approx 20% drill rate. Exact drilling to be agreed on site to work most effectively with existing vegetation to maximise screening/habitat benefit
 - Vegetation to be removed
 - 'No Category 2' trees (T24) removed to accommodate construction; short lengths of hedgerow removed to accommodate construction of fences and access tracks
 - where removed to accommodate fence construction, hedgerows shall be allowed to grow back up and be maintained around fence line
 - Public Right of Way
 - Proposed permissive footpath
 - Overhead power lines
 - Temporary construction compounds
 - NGED Operational Land
 - Archaeological mitigation zone
 - Inverter & battery station 1
 - Inverter & battery station 2
 - Customer switchgear container
 - Spare containers
 - Solar panel
 - CCTV camera
 - Substation and point of connection
 - Fencing
 - to solar compounds and associated gates
 - for operation and maintenance use only
 - Access track
 - Native woodland
 - native transplant shrub and feathered, light standard and selected standard tree mix, to be managed to allow to grow up to and be maintained at min 6m height
 - Black Poplar tree
 - planted in clusters within Black Poplar Conservation Area along brook edge
 - Native hedgerow tree
 - planted within proposed / alongside existing hedgerows
 - Orchard tree
 - species selected for their local provenance/heritage
 - Native hedgerow
 - to be managed to allow to grow up to and be maintained at 3 - 4m height
 - Grazing Mix
 - bespoke grazing meadow seed mix (to be developed with Habitat Aid), or similar sown at 4g/m²
 - Wildflower meadow
 - is Eromanga DMI Special General Purpose Meadow Mixture, or similar
 - Wet wildflower meadow
 - is Eromanga DMI Meadow Mixture for Wetlands, or similar
 - Interpretation board
 - information regarding water meadow system, Black Poplar Conservation Area or local wildlife
 - Outdoor classroom
 - information boards regarding solar energy production, species, habitats and wildlife features on site, Black Poplar Conservation Area, Sea Walk
 - informal seating opportunities, to be large log stumps (use trees to be removed from site where suitable)
 - Bird box (40no.)
 - designs suitable for Robins, Wrens, Tits (Blue, Great and Coal), Nuthatches, House Sparrows and Starlings
 - Bat box (40no.)
 - up to 3 per tree, facing in different directions
 - Barn Owl box (1no.)
 - Invertebrate box (1no.)
 - located near hedgerows and within grassland
 - Amphibian/Reptile hibernacula (5no.)
 - located within wildflower grassland meadows
 - Bee hotels (4no.)
 - to be positioned on firm ground facing south-south-east
 - to be managed by local school/keepers
 - Mammal gate/ gaps
 - locations shown indicatively. The precise number and locations will be determined during the pre-commencement badger survey
 - Kissing gate (or similar)
 - to be introduced along route of PRoW to replace existing access arrangement, to improve accessibility to all users
- NOTES**
- Panels offset from proposed and existing trees to avoid impacts upon them (including mature height overshadowing); trees within the site will be monitored and if required pruned accordingly to prevent overshadowing on the panels.



INSET



SEE INSET

Revisions:
First Issue- 10/04/2025 VK
A - (15/08/2025 IBD) Amends to clients comments
B - (14/11/2025 IBD) Amends to clients comments
C - (11/12/2025 IBD) Inverter amended

Further S73 Site Layout Plan Stoneshollow Solar Farm

Client: JBM Solar Projects 26 Ltd
DRWG No: P23-0657_EN_04 Rev: C
Drawn by : VK/IBD Approved by: IBD
Date: 11/12/2025
Scale: 1:2000 @AO
PEGASUS GROUP

Title	Drainage Technical Note
Job Name	Stoneshollow Solar Farm, Barlestone
Job number	23-309
Date	24/03/2023

1 INTRODUCTION

- 1.1.1 This Technical Note has been prepared to support the discharge of Conditions 17 (surface water drainage scheme), 18 (construction surface water management), 19 (maintenance schedule) and 20 (soakage testing) placed upon planning application 21/01395/FUL, which was consented in August 2022.
- 1.1.2 The note is supported by plans and typical details of the features, enclosed with this note.
- 1.1.3 The planning application was supported by a Flood Risk Assessment produced by RPS Group (v001, November 2021), which should be read in conjunction with this note.
- 1.1.4 The FRA included a concept drainage strategy, with mitigation comprising the use of gravel bases to accommodate roof runoff from containerised infrastructure, allowing water to percolate into the ground. This note explains the process of producing more detailed designs based on the FRA concepts.

2 SITE GEOLOGY AND PROPOSALS

2.1 Geology

- 2.1.1 The site is approximately 106ha of agricultural land which is predominantly used for arable and grazing.
- 2.1.2 According to British Geological Survey (BGS) data the site is underlain by mudstone geology which typically has poor permeability. The SoilScapes website defines the soils beneath the site to have impeded drainage.

2.2 Proposals

- 2.2.1 The site proposals include solar panels and associated containerised infrastructure. The containers are approximately 30m² each in area and are proposed to be dispersed across the site. According to the FRA, the combined area of the dispersed containers will measure approximately 0.29ha, which equates to approximately 0.27%

of the total site area. The remaining site will be permeable, covered either by grass or tracks, which will be constructed from permeable materials.

- 2.2.2 Connection to the grid will be facilitated by a sub-surface cable. As this will be a buried service that predominantly follows existing roads, it will have negligible impact on drainage once installed and likewise has not been considered by this note.
- 2.2.3 Construction will be facilitated by a temporary construction compound area. The drainage implications of which are the subject of Condition 18 and therefore included in this note.
- 2.2.4 The site layout plan is enclosed with this note.
- 2.2.5 The anticipated lifetime of the proposed infrastructure is 40 years.

3 CONDITION 20

3.1.1 Condition 20 states:

"No development approved by this planning application shall take place until such time as infiltration testing has been carried out (or suitable evidence to preclude testing) to confirm or otherwise, the suitability of the site for the use of infiltration as a drainage element, has been submitted to and approved in writing by the Local Planning Authority."

- 3.1.2 Given the permeability of the underlying ground is fundamental to the drainage methodology, Condition 20 has been addressed first by this note.
- 3.1.3 As explained above, the geology beneath the site is likely to have relatively low rates of infiltration.
- 3.1.4 The concept drainage strategy described in the FRA proposed to direct runoff to gravel bases beneath the containers, allowing water to slowly soak to the ground as per the existing situation. The methodology and calculations used in this note will account for the likely low infiltration rates and as a result will not need to be informed by specific soakage testing.
- 3.1.5 The above approach has been agreed with the LLFA, with relevant correspondence enclosed with this note.

4 CONDITION 17

4.1.1 Condition 17 states:

"No development approved by this planning permission shall take place until such time as a surface water drainage scheme has been submitted to, and approved in writing, by the Local Planning Authority"

4.1.2 The FRA proposed a drainage scheme that would encourage surface water from the very limited hardstanding across the site to be drained to ground. This replicates the existing situation and is the most preferred option by the SuDS hierarchy.

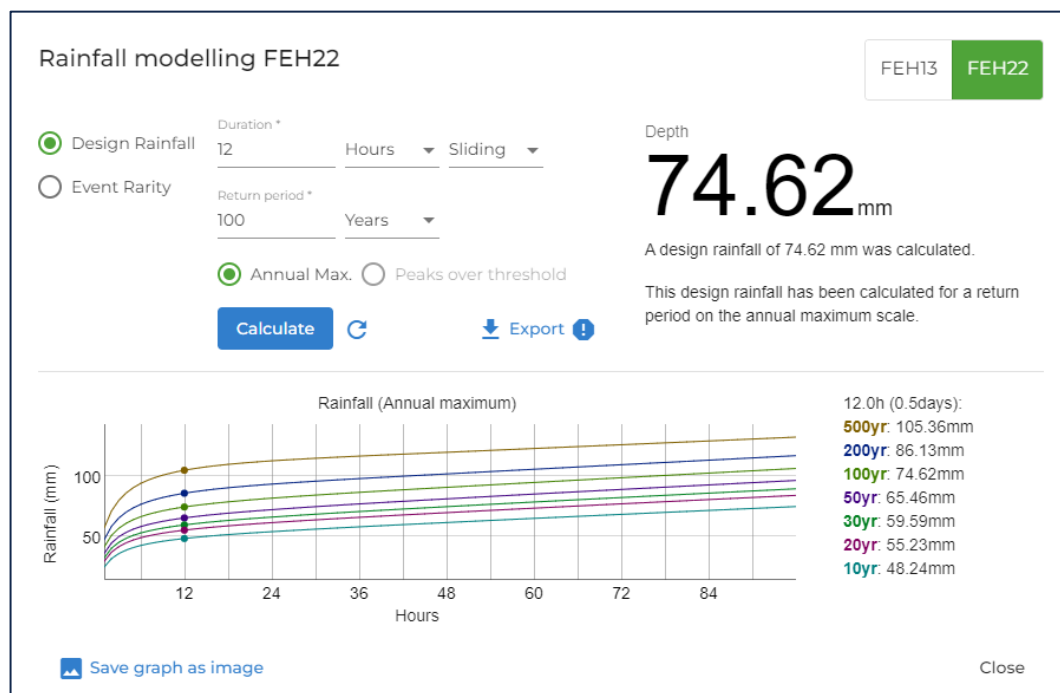
4.1.3 The gravel bases would discharge water via natural soakage rather than a fitted outfall. However, as discussed above, it is assumed that infiltration rates in the underlying ground would be very low. Therefore, the gravel bases have been sized to store runoff generated during a 1 in 100 year, 12 hour storm, inclusive of climate change and with no infiltration or outflow allowance in the calculations.

4.1.4 If infiltration is higher than expected on the site, then the proposed gravel bases would provide further capacity.

4.2 Storage Requirements

4.2.1 To calculate the volume of runoff generated from the containers during the 1 in 100 year, 12 hour storm, the Depth-Duration-Frequency model in the Flood Estimation Handbook (FEH) was used. The FEH predicted rainfall depth for the present day is 74.62mm, as shown in Figure 4-1.

Figure 4-1 Depth-Duration Curve Model Results



- 4.2.2 In accordance with the NPPF and the Flood Risk and Coastal Change PPG, an allowance for climate change must be applied to the design rainfall. The proposed site is estimated to have an anticipated lifetime of 40 years. The site lies within the Tame Anker and Mease Management Catchment. For a development with a 40-year lifetime, the central allowance for the 2070s epoch is applied. This equates to a 25% uplift in rainfall rates. Therefore, the 1 in 100 year, 12 hour + 25% (the design event) rainfall depth is 93.28mm.
- 4.2.3 The footprint areas of all containers will be 29.74m², which will result in a runoff volume of approximately 2.8m³ during a design event.
- 4.2.4 The gravel bases would be lined by a permeable geomembrane and extend at least 300mm on all sides of the infrastructure, forming a minimum area 34.22m². The bases would have depths of 300mm and porosity of 0.3, resulting in a storage capacity of 3.1m³.
- 4.2.5 Typical details of the proposed containers are enclosed with this note.
- 4.2.6 The above approach was agreed in principle with the Lead Local Flood Authority (LLFA), relevant correspondence is enclosed with this note.

4.3 Design for Exceedance

- 4.3.1 As demonstrated above, the storage capacity of the gravel beds would exceed the volume of runoff in a design event, providing some additional capacity for an exceedance event.
- 4.3.2 In the unlikely event the capacity of the beds was exceeded, water would slowly dissipate overland onto surrounding grassed areas, where it would absorb into the ground as per the existing site.
- 4.3.3 The proposed infrastructure would be raised on plinths or pads which would prevent flood damage in an exceedance event, as shown in the typical details enclosed with this note.

5 CONDITION 18

5.1.1 Condition 18 states:

"No development approved by this planning permission shall take place until such time as details in relation to the management of surface water on site during construction has been submitted to, and approved in writing, by the Local Planning Authority"

5.1.2 The proposed temporary construction compound will be formed from permeable gravel or hardcore material, similar to the proposed access tracks. Therefore, rain falling on the surface will percolate into the ground as per the existing situation. Given the compound would be a temporary measure, and would be replaced with panels and grassed following completion of construction, it is unlikely that the gravel would become significantly clogged with silt to render it ineffective. The proposed maintenance, outlined in Section 6 will further reduce this risk. As a result, no further mitigation of surface water from the compound is required.

5.1.3 During the construction of the solar farm there is potential for soil compaction and erosion through vehicular movements. It is recommended that these effects are duly considered as part of the Construction Environmental Management Plan.

5.1.4 It is recommended that following measures are considered:

- Construction, and use, of internal access tracks early in the process;
- Use of low tyre pressure machinery to reduce compaction;
- A delivery and construction schedule that minimises repeat journeys; and
- Temporary measures such as sediment traps using geotextiles, straw and temporary bunding.

5.1.5 Where the soil has been disturbed as part of the construction process it is recommended that the soil is adequately prepared for seeding. Tillage (mechanical loosening) may be advisable where the soil is compacted. This should be carried out to target the specific depth and location of any observed compaction and minimise disturbance elsewhere. A native seed mix should be used which allows for rapid establishments of ground cover. The seed mix should, where possible, include plants with a diversity of root structures. It is also recommended that consideration is given to including species that are particularly effective at breaking up compacted soil and increasing soil organic matter content.

6 CONDITION 19

6.1.1 Condition 19 states:

"Prior to first use of the development approved by this planning permission, details in relation to the long-term maintenance of the surface water drainage system within the development are to be submitted to and approved in writing by the Local Planning Authority".

6.1.2 The primary method of managing surface water on the site will be to allow water to pass through permeable gravel and soak into the ground. This will be either as the formation of access tracks and the construction compound, or as the base beneath containerised infrastructure. The infrastructure will be maintained for the duration of the design life of the development in accordance with the recommendations in the CIRIA Suds Manual (C753), summarised in Table 6-1.

6.1.3 The responsibility for undertaking the maintenance will rest with the operator.

Table 6-1 Gravel Beds Maintenance

Maintenance Schedule	Action	Frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then annually
	Remove debris from the surface where it may affect performance	Monthly
Remedial actions	Replacement of clogged geotextile (reconstruct filter bed where required)	As required

7 SUMMARY

7.1.1 Calibro has been appointed to discharge Conditions 17 – 20 placed upon planning application 21/01395/FUL, which was consented in August 2022. The conditions relate to the management of surface water drainage on the site.

7.1.2 Due to the underlying ground conditions, it is presumed that the infiltration rates on the site would be very low. Therefore the methodology used to address the conditions takes a conservative approach and makes no allowance for infiltration in the calculations. As a result, no soakage testing is required.

7.1.3 The vast majority of the site will be grass covered with solar arrays. The arrays will allow rainwater to fall onto the grass and absorb into the ground. The cessation of intensive agricultural practices, including ploughing of arable fields, will result in a betterment in terms of runoff and soil erosion.

- 7.1.4 The access tracks and temporary construction compound will be formed from permeable gravel and therefore allow rainfall to percolate into the ground as per the existing site with no further mitigation required.
- 7.1.5 The only hardstanding on site will be dispersed containerised infrastructure such as inverters, spare parts containers and batteries. Their combined area will cover less than 0.3% of the site area. To mitigate potential impacts on surface water, runoff from their roofs will be directed to gravel bases, which will be wrapped in permeable membranes to allow water to soak into the ground as per the existing site.
- 7.1.6 The gravel bases have been sized to accommodate runoff during a design rainfall event, i.e., 1 in 100 year, 12 hour duration storm with a 25% uplift to allow for the impacts of climate change. Bases that are 300mm deep and extend at least 300mm from the edge of the containers will provide more storage than the volume of runoff generated in a design event, to allow for exceedance.
- 7.1.7 In the unlikely event the capacity of the bases were exceeded, water would slowly disperse across grassed areas to soak into the ground, as per the existing site. The containers would be raised on plinths to negate the risk of damage to them.
- 7.1.8 All infrastructure will be maintained by the operator in accordance with the recommendations in the CIRIA SuDS Manual.

Enclosures

Proposed Site Layout Plan

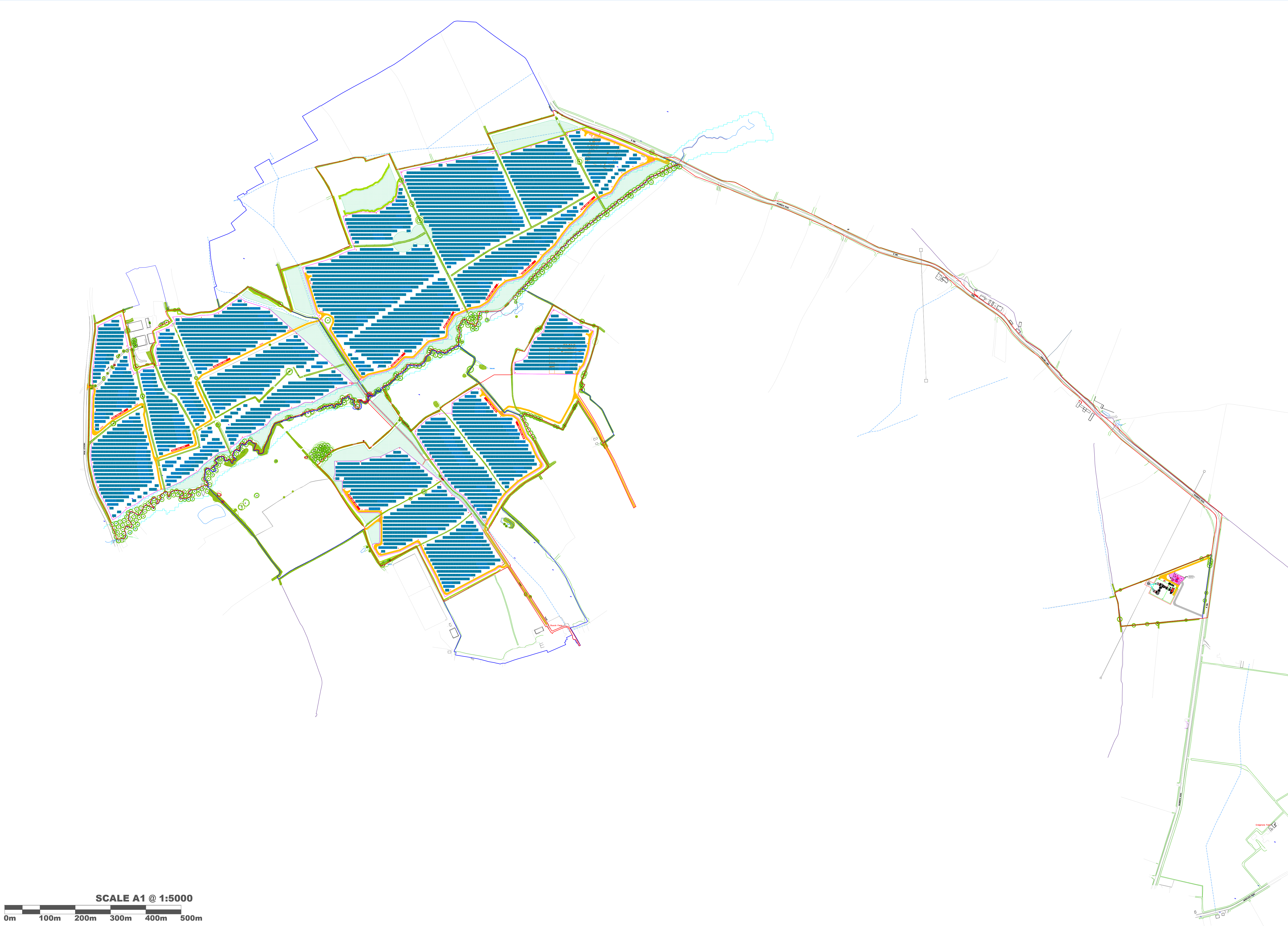
Inverter Station Typical Detail

Spares Container Typical Detail

Customer Switchgear Typical Details

Battery Station Typical Details

LLFA Correspondence



REVISIONS:

- Initial design

Legend:

- Inverter
- Battery stations
- Spare containers
- Customer switchgear container
- Solar panels
- Deer Fencing
- Water courses and water bodies
- Rights of Way
- Wildlife Enhancement Area
- Construction Compound
- CCTV Cameras
- Cable route
- Access road
- Existing road
- Temporary road
- Landholder's Property
- Access gate
- Tree Root protection areas
- Tree and hedge planting/enhancement
- Banks
- Local Authority Border
- Planning Redline



DATE: 31 May 2022

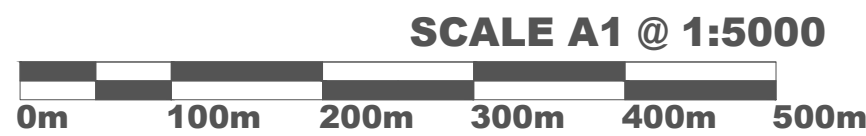
TITLE:
Stoneshollow PV layout

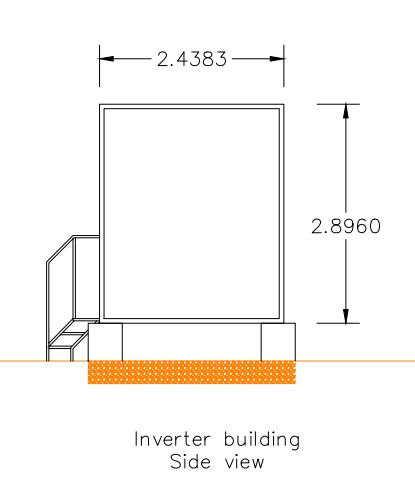
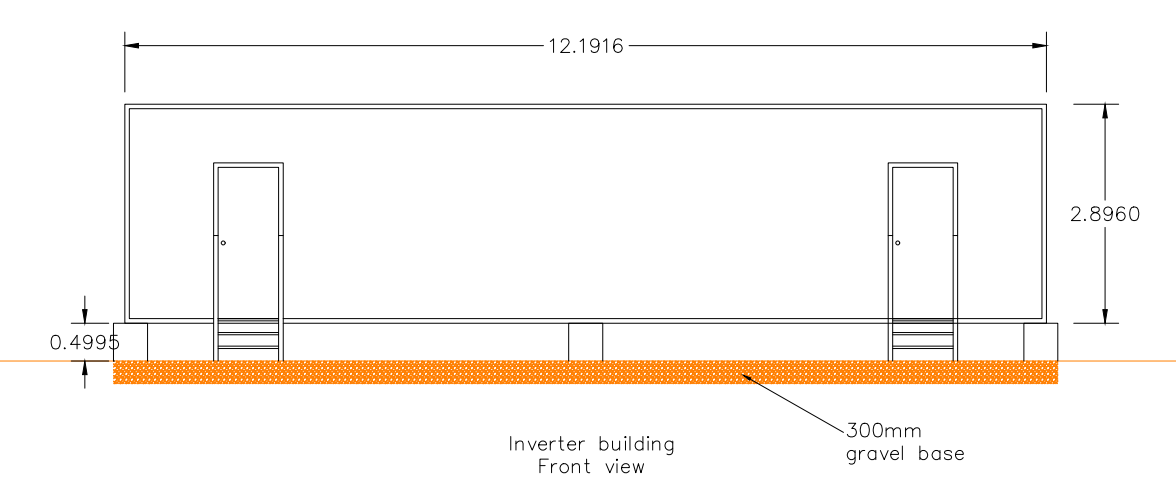
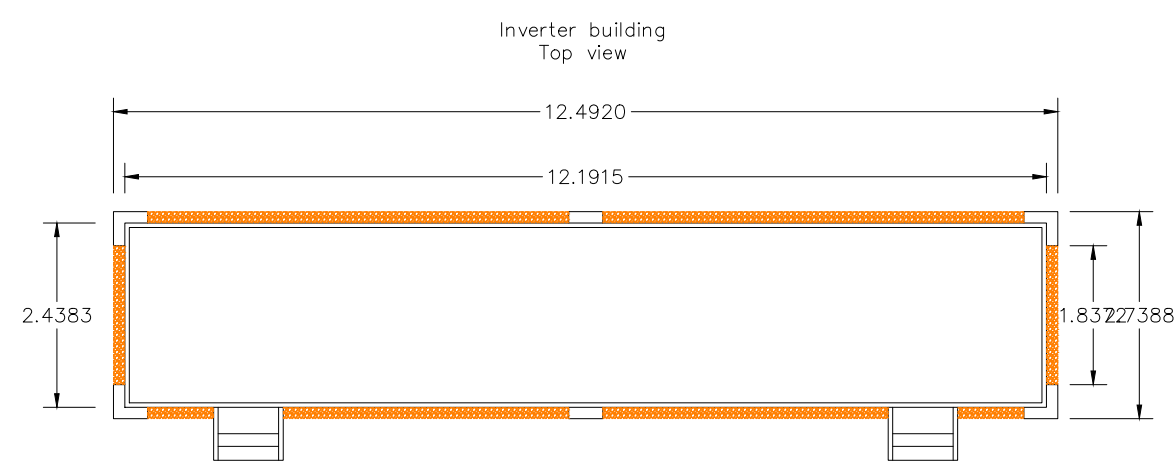
PROJECT TITLE:
Stoneshollow

LOCATION:
CV13 0EH

CONFIGURATION:
Typical fixed tilt table
49.9 MW

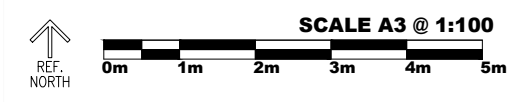
REV:	A
FILENAME: 20210906_A017_3P495.dwg	





- NOTES
1. All details are indicative only.
 2. Dimensions are in metres unless stated otherwise.

LEGEND



DETAILS	
TITLE	Battery Storage System
REVISION	A

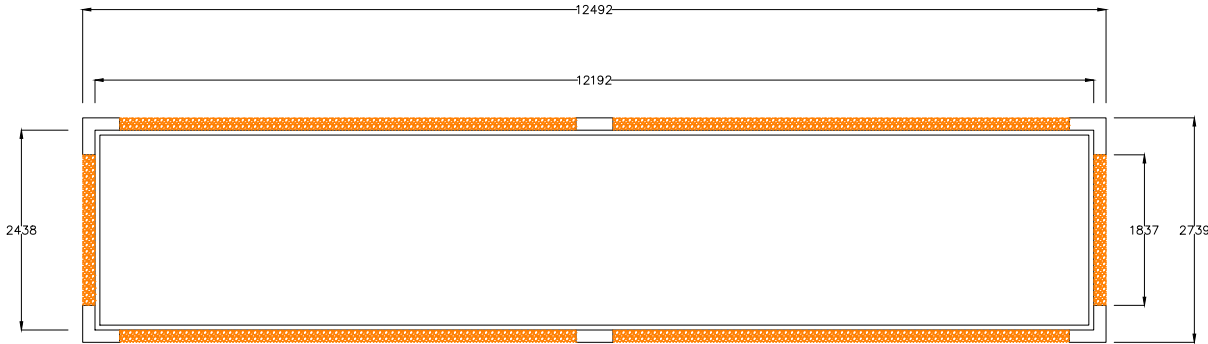
JBM
SOLAR

NOTES

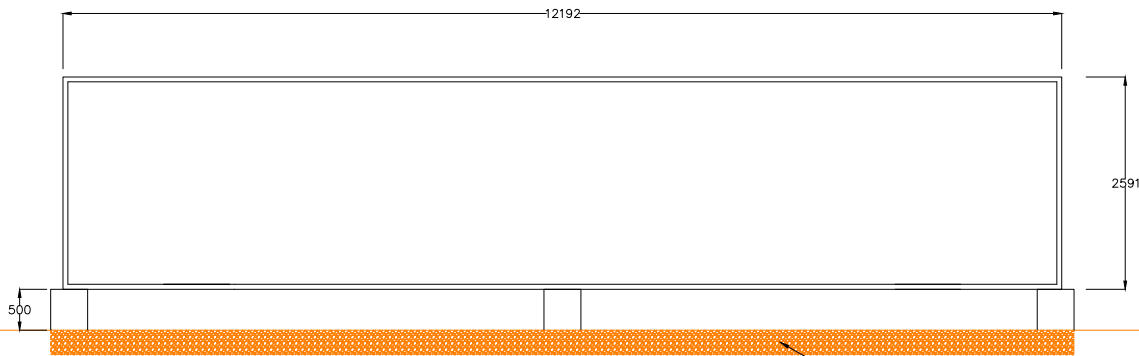
- 1. All details are indicative only.
- 2. Dimensions are in metres unless stated otherwise.

LEGEND

Spares container
Top view

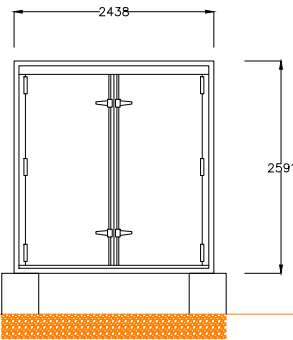


Spares container
Front view



300mm
gravel base

Spares container
Side view



SCALE A3 @ 1:100



JBM
SOLAR

DETAILS

TITLE
Typical Spares Container

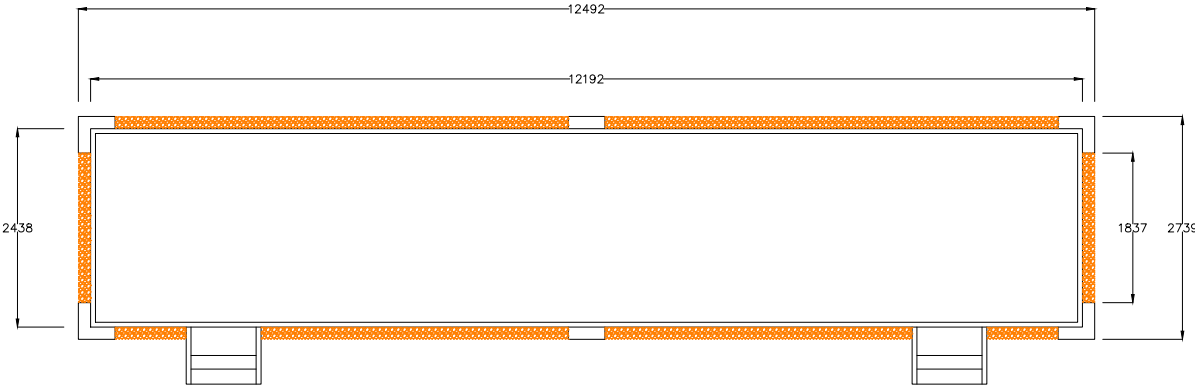
REVISION
A

NOTES

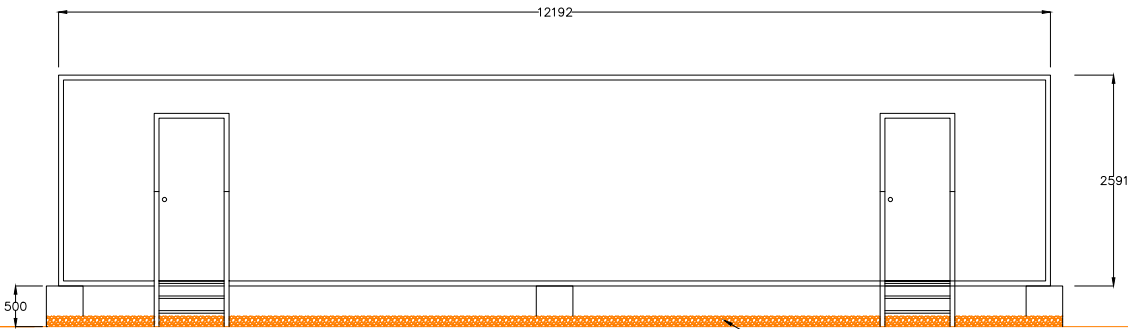
- 1. All details are indicative only.
- 2. Dimensions are in metres unless stated otherwise.

LEGEND

Customer switchgear
Top view

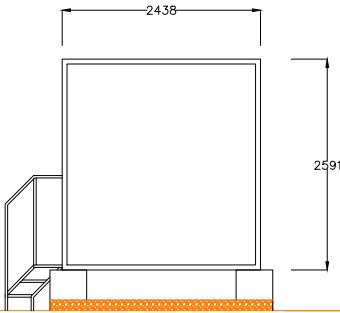


Customer switchgear
Front view



300mm
gravel base

Customer switchgear
Side view



SCALE A3 @ 1:100



JBM
SOLAR

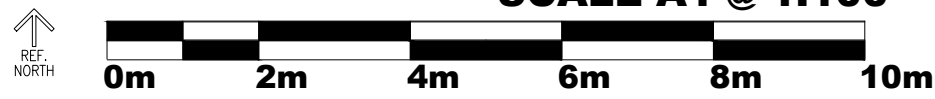
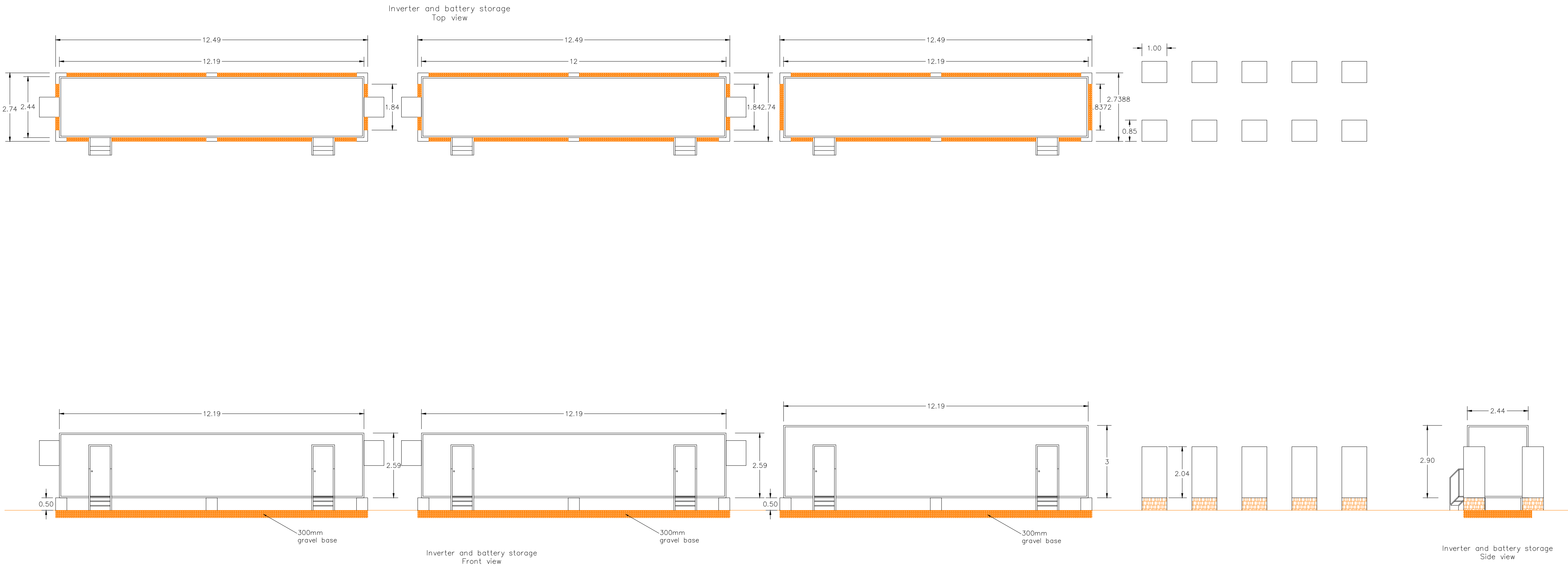
DETAILS

TITLE	typical Customer Switchgear
REVISION	A

NOTES

1. All details are indicative only.
2. Dimensions are in metres unless stated otherwise.

LEGEND



DETAILS

TITLE Typical battery station linear

REVISION A

JBM
SOLAR

Patrick Goodey

From: Jack Harriman <Jack.Harriman@leics.gov.uk>
Sent: 20 March 2023 11:39
To: Patrick Goodey
Subject: RE: [CAL: 23-309] Solar Farm - Washpit Lane, Barlestone - conditions discharge
Categories: Scanned by Gekko

Hi Patrick,

Having reviewed your email I advise that due to the nature of the development and the lack of positively drained system that the submission of material to support the design outlined above in an application to discharge condition 20 would be acceptable to the LLFA. It is presumed the design material required will be provided in the discharge of condition 17.

Jack Harriman
Technician (Flood Risk Management)
Unison Workplace Rep
Environment & Transport Department
Leicestershire County Council
Tel: 0116 305 2261

www.flooding@leics.gov.uk

www.leicestershire.gov.uk/planning-and-environment/flooding-and-drainage

From: Patrick Goodey <patrick.goodey@calibro-consultants.com>
Sent: 07 March 2023 14:38
To: Flooding <Flooding@leics.gov.uk>
Subject: [CAL: 23-309] Solar Farm - Washpit Lane, Barlestone - conditions discharge

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi,

We are supporting our client with the discharge of Conditions 17 - 20 placed upon the Hinckley and Bosworth BC decision notice for a proposed solar farm at Washpit Lane between Barlestone and Nailstone. The planning ref is 21/01395/FUL. The decision notice and your response are attached.

The FRA confirmed that the only hardstanding on site would be the dispersed containerised infrastructure (e.g., battery storage, spares containers etc.). Runoff from these is proposed to be stored in 300mm deep gravel base prior to soakage into the ground. Access tracks would be formed from permeable materials, as demonstrated in the FRA, so we wouldn't consider these in the condition application.

We propose to confirm the gravel base dimensions required by calculating the runoff from the containers during a 1 in 100 year +25% (to account for 40 years of climate change, consistent with the Tame Anker and Mease management catchment), 1 hour duration storm. We will presume a porosity of 0.3.

It is noted the soils are likely to have low soakage rates (BGS suggests mudstones and Soilscape suggests slowly permeable clays). Please confirm that reference to these datasets is sufficient to address condition 20?

Given the low permeability of the ground, we will allow for some freeboard above the design event. In the unlikely event the gravel base storage is exceeded, surcharged water would flow in a dispersed manner overland across grassed areas as per the existing site or the antecedent conditions.

Please confirm that the above approach would be acceptable to you.

I'm happy to discuss if it's easier, my numbers are provided below.

Thanks
Patrick

Patrick Goodey BSc MSc
Principal Flood Risk Consultant



81 Whiteladies Road | Bristol | BS8 2NT

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T 0117 2441 970

E patrick.goodey@calibro-consultants.com

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Bristol Property Awards
'Employer of the Year' Winner



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