

Key

- Site Boundary
- Solar Farm Zone
- Substation and BESS Compound
- Watercourse
- Contours

Modelled Flood Levels (mAOD)

Fluvial 'Credible Maximum Scenario Sensitivity Test' 1% AEP (1 in 100 BP) Fluvial Defences + Climate Change (Upper End)

Ref: AE00851_ENSD_BAS_SCENAL_Q0100_CC_UPPER_051_1_Mar-CLIPPID

4.10 - 4.20
4.20 - 4.30
4.30 - 4.40
4.40 - 4.50
4.50 - 4.60
4.60 - 4.70
4.70 - 4.80
4.80 - 4.90
4.90 - 5.00
5.00 - 5.10
5.10 - 5.20
5.20 - 5.40
5.40 - 5.50

Note: Modelled flood levels to be reviewed following Environment Agency approval of the site-specific flood model.

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For Planning
This drawing is produced for the purposes of supporting a planning application and should not be relied upon for tender, pricing, or construction purposes.

- NOTES**
1. Site Boundary based upon Order Limits Location Plan, Enso Energy Drawing No. DX-01-P01 Rev 11, dated 15/02/24.
 2. Drawing based upon Parameter Plan, Enso Energy Drawing No. DX-01-P02 Rev 11, dated 15/02/24.
 3. Flood risk data based on the results from the site-specific flood model produced by Aegre. Details contained in Hydraulic Model Technical Note (Document Ref: AE00851_Y08_EnsoEnergy_03 Rev A dated 16/05/24).
 4. Drawings should be read in conjunction with Flood Risk Assessment produced by PFA Consulting (Document Ref: E216-00001-FRA-Issue 1, June 2024).
 5. Contains public sector information licensed under the Open Government Licence v3.0.
 6. Contains OS data © Crown copyright and database right 2022.
 7. Contains third party information.
 8. Minimum equipment levels subject to detailed design and will be informed by an Environment Agency approved site-specific flood model.
 9. Minimum equipment levels rounded to nearest 0.005m.

- Summary of Flood Mitigation Measures**
- The Proposed Development extends into areas of elevated flood risk from the fluvial 'design flood'. The Proposed Development would be designed to appropriately safe in the fluvial 'design flood' without increasing flood risk elsewhere. The Proposed Development would be designed to be resilient to the fluvial 'credible maximum scenario sensitivity test' flood event with the implementation of adaptation measures where necessary at the appropriate time.
- The following design flood mitigation and adaptation measures are proposed:
- A flood warning and evacuation plan for the relevant phase of the Proposed Development would be contained in the detailed CDM, O&M or O&M and the construction contractor and operating staff would register to receive flood alerts / warnings from the EA and follow site evacuation procedures during periods of elevated flood risk.
 - During times of elevated tidal and fluvial flood risk the solar arrays within the areas of elevated flood risk would be rotated to the horizontal stop position which would be a minimum of a 0.3m above the fluvial 'design flood' level or the stop position set above the fluvial 'credible maximum scenario sensitivity test' level, whichever is greater.
 - Panel supports and security fencing in flood risk areas would be secured into the ground and designed to allow for the effect of flowing water pressures and to be resistant to inundation during a flood event.
 - Security fencing mesh size in flood risk areas (fluvial 'design flood') would be increased to 0.15m square to minimise the risk of it collecting debris.
 - Ancillary control equipment will be preferentially located in areas of very low surface water flood risk and very low fluvial flood risk in the fluvial 'design flood' and in areas affected by flood depths <0.6m in the fluvial 'credible maximum scenario sensitivity test' flood event.
 - Substation and BESS Compound will be preferentially located in areas of very low surface water flood risk and very low fluvial flood risk in the fluvial 'design flood'.
 - The level of ancillary control equipment will be raised at least 0.3m (and up to 0.6m) above existing ground level to manage residual risk.
 - As an adaptation measures the Substation and BESS Compound would be protected by a suitably designed earth flood defence bund. The height of the proposed earth flood defence bund would be raised at least +0.6m above the fluvial 'credible maximum scenario sensitivity test' flood level to protect the equipment from inundation.
 - The Flood Management Strategy for the Site will keep under review the need to implement a level for level floodplain compensation scheme for the Substation and BESS Compound to mitigate the effect of the earth flood defence bund. A preliminary floodplain compensation scheme within the O&M limits has been shown to be feasible.
 - On-site watercourses are retained and existing watercourse crossings are utilised where possible within the Proposed Development.
 - Where possible all development (including security fencing) is at least 7m from the on-site ordinary watercourses in accordance with Set-Back Area (SBA) byelaws. Additional consents may be required for watercourse crossings (site access or services) and landscape planting where this is not achieved.

Rev	Date	Description	Drawn	Check
#	13/02/24	First Issue	JS	BF
A	04/06/24	Flood mitigation and adaptation measures updated to reflect site-specific flood modelling (May 2024).	BF	SAM

Status
FOR PLANNING

Client

Enso Green Holdings D Ltd

Project

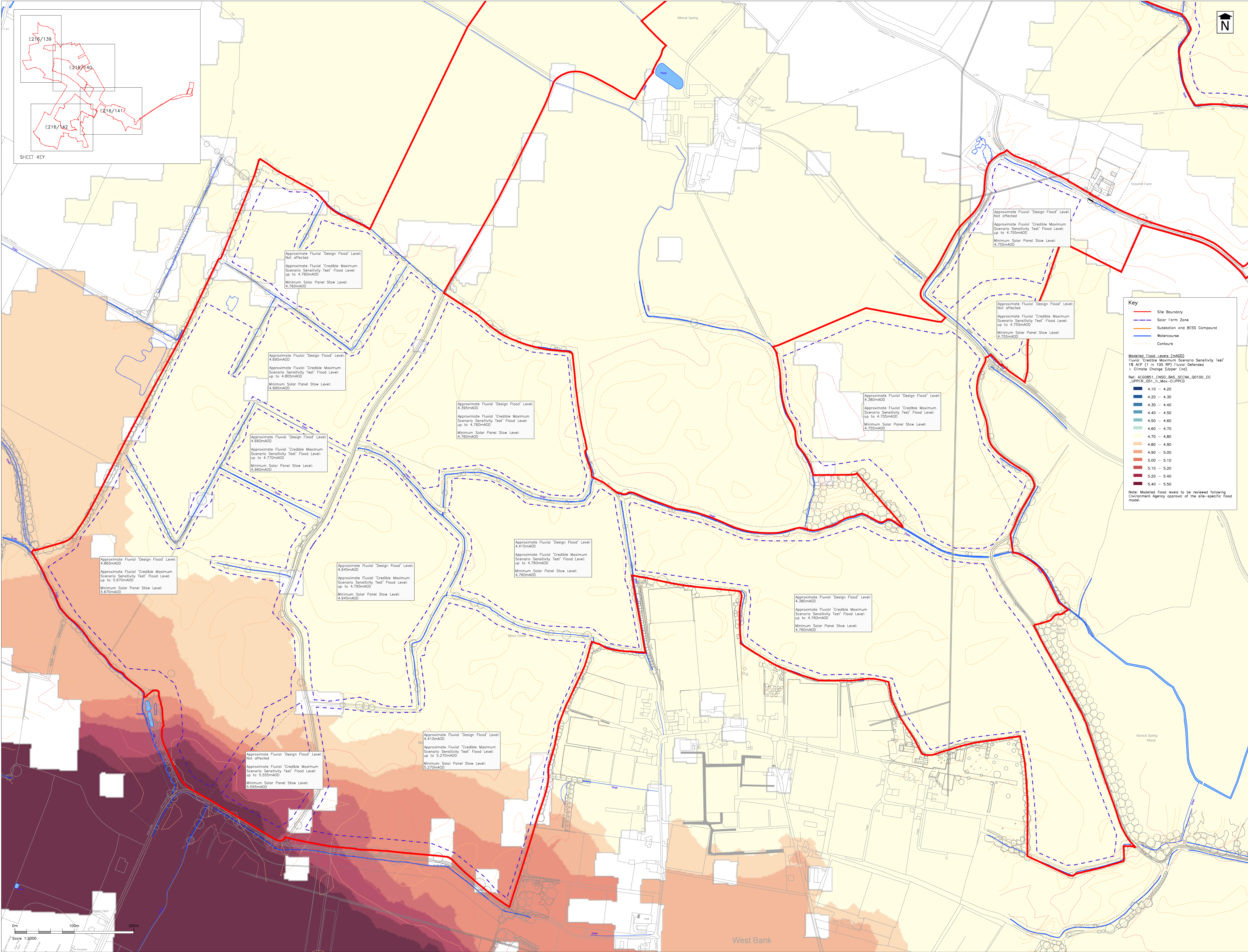
Helios Renewable Energy Project

Drawing Title

Minimum Equipment Levels Sheet 3 of 4

Drawing No. **E216/141** Rev A

Date: February 2024 Scale: 1:2000 @ A0
E-Mail: @pfapl.com



For Planning
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NOTES

1. Site Boundary based upon Order Limits Location Plan, Enso Energy Drawing No. DX-01-P01 Rev 11, dated 15/02/24.
2. Drawing based upon Parameter Plan, Enso Energy Drawing No. DX-01-P02 Rev 11, dated 15/02/24.
3. Flood risk data based on the results from the site-specific flood model produced by Aegoo. Details contained in Hydraulic Model Technical Note (Document Ref: AEQ0851_Y08_EnsoEnergy_03 Rev A dated 16/05/24).
4. Drawings should be read in conjunction with Flood Risk Assessment produced by PFA Consulting (Document Ref: E216-00001-FRA-Issue 1, June 2024).
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Summary of Flood Mitigation Measures

The Proposed Development extends into areas of elevated flood risk from the fluvial 'design flood'. The Proposed Development would be designed to appropriately safe in the fluvial 'design flood' without increasing flood risk elsewhere. The Proposed Development would be designed to be resilient to the fluvial 'credible maximum scenario sensitivity test' flood event with the implementation of adaptation measures where necessary at the appropriate time.

The following design flood mitigation and adaptation measures are proposed:

- A flood warning and evacuation plan for the relevant phase of the Proposed Development would be contained in the detailed O&M, O&M or O&M and the construction contractor and operating staff would register to receive flood alerts / warnings from the EA and follow site evacuation procedures during periods of elevated flood risk.
- During times of elevated tide and fluvial flood risk the solar arrays within the areas of elevated flood risk would be rotated to the horizontal stow position which would be a minimum of 0.3m above the fluvial 'design flood' level or the stow position set above the fluvial 'credible maximum scenario sensitivity test' level, whichever is greater;
- Panel supports and security fencing in flood risk areas would be securely fixed into the ground and designed to allow for the effect of flowing water pressures and to be resistant to inundation during a flood event;
- Security fencing mesh size in flood risk areas (fluvial 'design flood') would be increased to 0.15m square to minimise the risk of it collecting debris;
- Ancillary control equipment will be preferentially located in areas of very low surface water flood risk and very low fluvial flood risk in the fluvial 'design flood' and in areas affected by flood depths <0.6m in the fluvial 'credible maximum scenario sensitivity test' flood event.
- Substation and BESS Compound will be preferentially located in areas of very low surface water flood risk and very low fluvial flood risk in the fluvial 'design flood'.
- The level of ancillary control equipment will be raised at least 0.3m (and up to 0.6m) above existing ground level to manage residual risk.
- As an adaptation measures the Substation and BESS Compound would be protected by a multi-layered earth flood defence bund. The height of the proposed earth flood defence bund would be raised at least +0.6m above the fluvial 'credible maximum scenario sensitivity test' flood level to protect the equipment from inundation;
- The Flood Management Strategy for the Site will keep under review the need to implement a level for level floodplain compensation scheme for the Substation and BESS Compound to mitigate the effect of the earth flood defence bund. A preliminary floodplain compensation scheme within the O&M limits has been shown to be feasible.
- On-site watercourses are retained and existing watercourse crossings are utilised where possible within the Proposed Development;
- Where possible all development (including security fencing) is at least 7m from the on-site ordinary watercourses in accordance with Set-Back Area (SBA) byelaws. Additional consents may be required for watercourse crossings (site access or services) and landscape planting where this is not achieved.

Rev	Date	Description	Drawn	Check
#	13/02/24	First Issue	JS	BF
A	04/06/24	Flood mitigation and adaptation measures updated to reflect site-specific flood modelling (May 2024).	BF	SAM

Status
FOR PLANNING

Client
Enso Green Holdings D Ltd

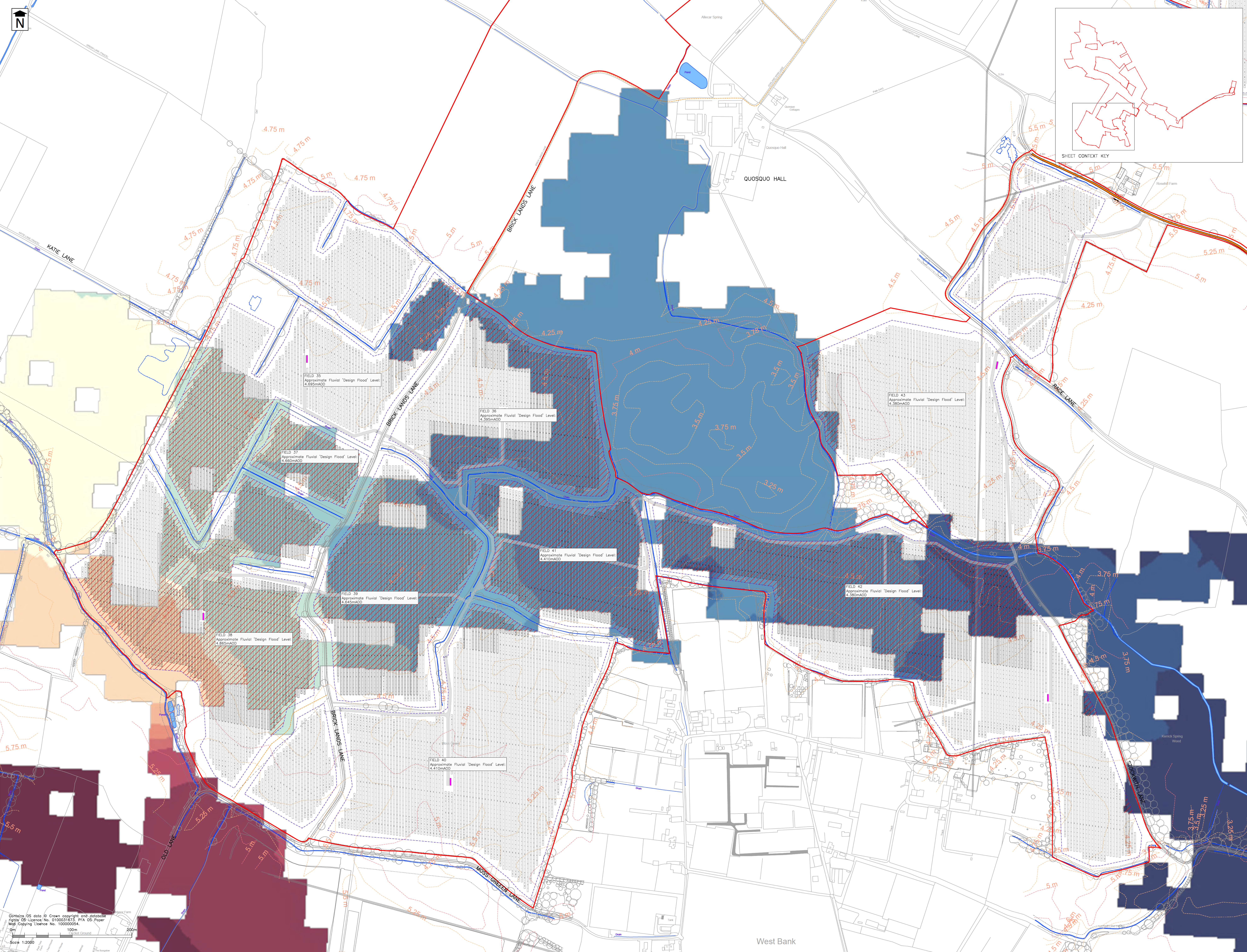
Project
Helios Renewable Energy Project

Drawing Title
Minimum Equipment Levels Sheet 4 of 4

Drawing No. **E216/142** Rev A

Date: February 2024 Scale: 1:2000 @ A0

E-Mail: info@pfapl.com



For Planning
This drawing is produced for the purposes of supporting a planning application and should not be relied upon for tender, pricing, or construction purposes.

- NOTES**
1. Site Boundary based upon Order Limits Location Plan, Enso Energy Drawing No. DK-01-P01 Rev 11, dated 15/02/24.
 2. Drawing based upon indicative Design, Enso Energy Drawing No. DK-01-P01 Rev 08, dated 15/02/24.
 3. Flood risk data based on the results from the site-specific flood model produced by Aegoo. Details contained in Hydraulic Model Technical Note (Document Ref: AEG0851_Y08_EnsoEnergy_03 Rev B dated 25/08/24).
 4. Drawing should be read in conjunction with Flood Risk Assessment produced by PFA Consulting (Document Ref: E216-00001-FRA-Issue 1, June 2024) and Water Environment Supplementary Assessment produced by PFA Consulting (Document Ref: E216-00002-Issue 1, January 2024).
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 9. Minimum equipment levels rounded to nearest 0.005m.

- Key**
- Site Boundary
 - Solar Farm Zone
 - Watercourse
 - Contours
 - Operational Area of the Site affected by Fluvial 'Design Flood'

- Modelled Flood Levels (mAOD)
- Fluvial 'Design Flood'
- 1% AEP (1 in 100 RP) Fluvial Defended
- + Climate Change (Higher Centre)
- Ref: AEG0851_ENSO_BAS_SCENA_00100_CC_HIGHER_051_h_Max-CLIPPED
- 4.10 - 4.20
 - 4.20 - 4.30
 - 4.30 - 4.40
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 - 4.70 - 4.80
 - 4.80 - 4.90
 - 4.90 - 5.00
 - 5.00 - 5.10
 - 5.10 - 5.20
 - 5.20 - 5.40
 - 5.40 - 5.50

Rev	Date	Description	Drawn	Check
#	20/12/24	First Issue	BP	MWS

Status **FOR PLANNING**

Client

Enso Green Holdings D Ltd

Project

Helios Renewable Energy Project

Drawing Title

Preliminary Solar Array Support Flood Volume Displacement Assessment Flood Extents

Drawing No. **E216/164**

Date: December 2024 Scale: 1:2000 @ A0
E-Mail: @pfapl.com