



PINS Document Number:
EN010140/APP/7.5

Flood Risk Assessment

April 2025



HELIOS RENEWABLE ENERGY PROJECT

FLOOD RISK ASSESSMENT

ENSO GREEN HOLDINGS D LIMITED

DOCUMENT REFERENCE NUMBER: 7.7

PART 6 OF 6

APPENDICES 26 - 32

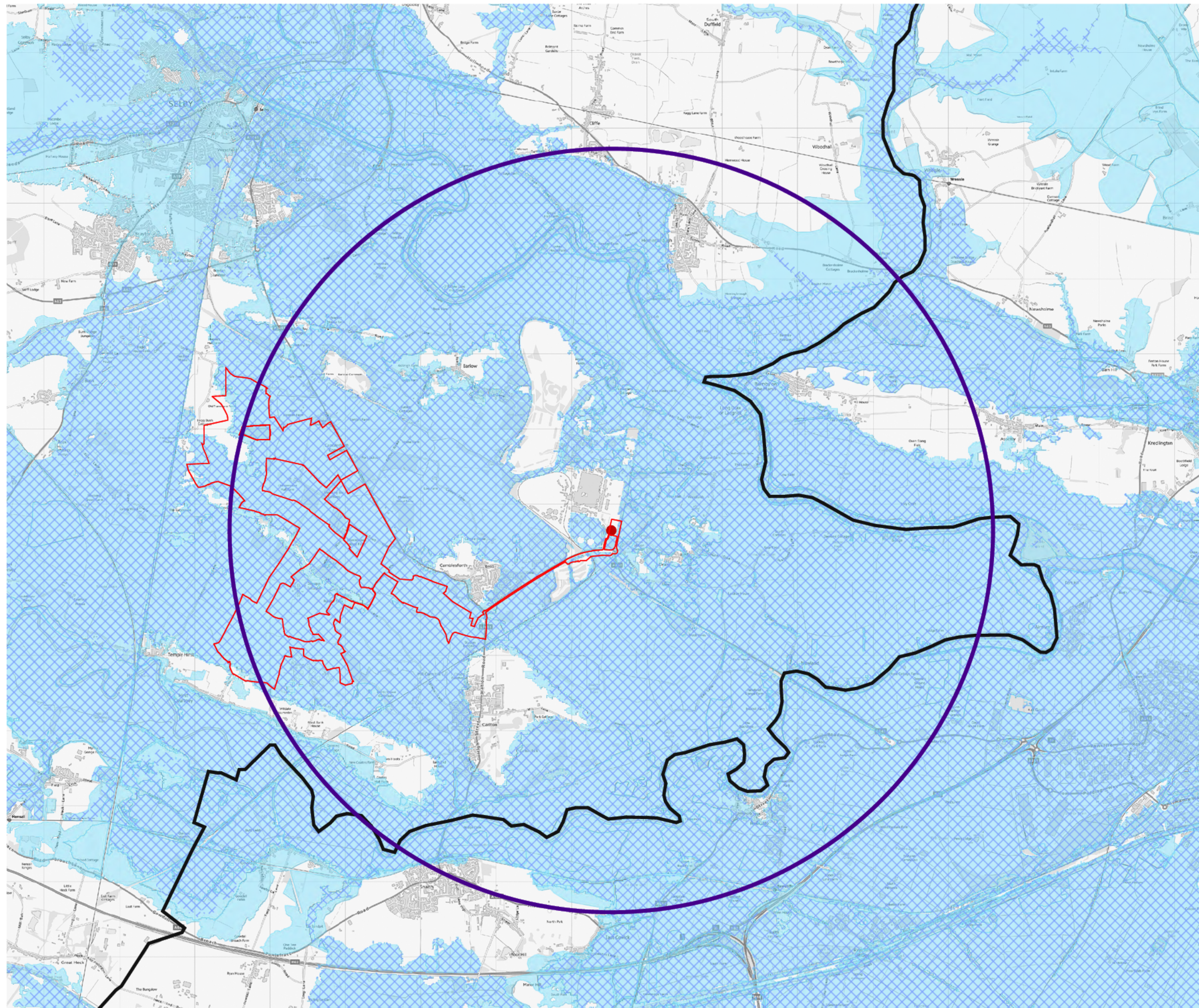
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MARCH 2025

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




engineering the future

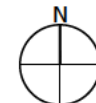


The scaling of this drawing cannot be assured

Revision	Date	Drm	Ckd
C Red Line Updated	17.06.24	KT	JG

LEGEND

-  Site Location
-  Helios Red Line Boundary
-  5km Study Area
-  Selby District Boundary
-  Flood Zone 2
-  Flood Zone 3



Project
Helios Renewable Energy Project


Drawing Title
Flood Map


Date 17.06.24	Scale 1:50,000@A3	Drawn by KT	Check by TE
Project No 33627	Drawing No BL-M-04	Revision C	



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Stratton Park House Wanborough Road Swindon SN3 4HG	E216: Helios Renewable Energy Greenfield Runoff																																											
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XP Solutions																																												
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<p style="text-align: center;"><u>IH 124 Mean Annual Flood</u></p> <p style="text-align: center;">Input</p> <table> <tr> <td>Return Period (years)</td> <td>1</td> <td>Soil</td> <td>0.300</td> </tr> <tr> <td>Area (ha)</td> <td>297.739</td> <td>Urban</td> <td>0.000</td> </tr> <tr> <td>SAAR (mm)</td> <td>625</td> <td>Region Number</td> <td>Region 3</td> </tr> </table> <p style="text-align: center;">Results l/s</p> <table> <tr> <td>QBAR Rural</td> <td>390.5</td> </tr> <tr> <td>QBAR Urban</td> <td>390.5</td> </tr> <tr> <td>Q1 year</td> <td>335.9</td> </tr> <tr> <td>Q1 year</td> <td>335.9</td> </tr> <tr> <td>Q2 years</td> <td>368.5</td> </tr> <tr> <td>Q5 years</td> <td>488.2</td> </tr> <tr> <td>Q10 years</td> <td>566.3</td> </tr> <tr> <td>Q20 years</td> <td>641.4</td> </tr> <tr> <td>Q25 years</td> <td>666.3</td> </tr> <tr> <td>Q30 years</td> <td>686.5</td> </tr> <tr> <td>Q50 years</td> <td>739.7</td> </tr> <tr> <td>Q100 years</td> <td>812.3</td> </tr> <tr> <td>Q200 years</td> <td>921.7</td> </tr> <tr> <td>Q250 years</td> <td>956.8</td> </tr> <tr> <td>Q1000 years</td> <td>1187.3</td> </tr> </table>			Return Period (years)	1	Soil	0.300	Area (ha)	297.739	Urban	0.000	SAAR (mm)	625	Region Number	Region 3	QBAR Rural	390.5	QBAR Urban	390.5	Q1 year	335.9	Q1 year	335.9	Q2 years	368.5	Q5 years	488.2	Q10 years	566.3	Q20 years	641.4	Q25 years	666.3	Q30 years	686.5	Q50 years	739.7	Q100 years	812.3	Q200 years	921.7	Q250 years	956.8	Q1000 years	1187.3
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PFA Consulting Ltd		Page 1
Stratton Park House Wanborough Road Swindon SN3 4HG	E216: Helios Renewable Energy Post Development Runoff	
Date 26/05/2023 13:54 File	Designed by BF Checked by	
XP Solutions Source Control 2020.1.3		

IH 124 Mean Annual Flood

Input

Return Period (years)	1	Soil	0.300
Area (ha)	297.739	Urban	0.001
SAAR (mm)	625	Region Number	Region 3

Results l/s

QBAR Rural	390.5
QBAR Urban	391.4
Q1 year	336.6
Q1 year	336.6
Q2 years	369.4
Q5 years	489.3
Q10 years	567.5
Q20 years	642.7
Q25 years	667.6
Q30 years	687.9
Q50 years	741.1
Q100 years	813.8
Q200 years	923.3
Q250 years	958.5
Q1000 years	1189.1

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Website

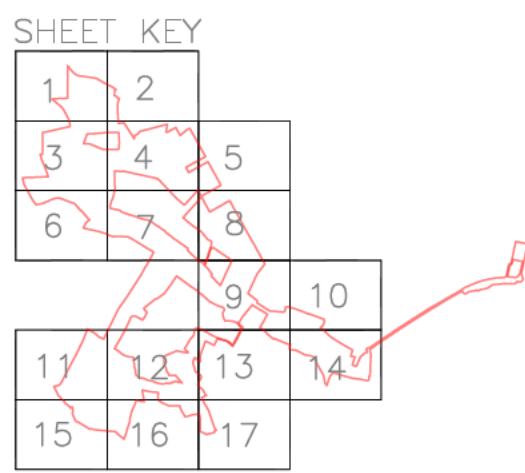
For Planning
This drawing is produced for the purposes of supporting a planning application and should not be relied upon for tender, pricing, or construction purposes.

KEY

- Site Boundary (Indicative Only)
- Ordinary Watercourse
- Ordinary Watercourse (DB Maintained)
- 7m Watercourse Buffer
- Overland Flow Route (Indicative Only)
- Archeological Mitigation Areas
- Interception Swales

NOTES

- Based on drawing DX-01-P02 Rev09 Parameter Plan by Enso Energy dated 07/02/2024
- Drawing based on Topographical Survey, produced by Above Surveying Ltd., drawing number DRAX LINEWORK ("CAD") (Dated 6th May 2022).
- Based on data from Archaeological Services WYAS Reference: XF70_HL022 Reviewed 05/05/2023
- Approximate Top of Bank based on LiDAR data at 0.1m intervals. 7m buffers based on the approximate top of bank data. Top of Bank will need to be accurately verified.
- Contains public sector information licensed under the Open Government Licence v3.0.
- 7m watercourse buffer in accordance with Selby Internal Drainage Board byelaw (Byelaw 10: No person without the previous consent of the Board shall erect any building or structure, whether temporary or permanent, or plant any tree, shrub, willow or other similar growth within 7 metres of the landward toe of the bank where there is an embankment or wall or within 7 metres of the top of the batter where there is no embankment or wall, or where the watercourse is enclosed within 7 metres of the enclosing structure).
- Total Length of swales provided = 4975m. Per metre length of swale, at 1/2 full (incorporating a 0.1m freeboard), 0.08m³ of storage is available. Therefore the total available storage provided within the swales is 398m³.



Rev	Date	Description	Drawn	Check
#	09.06.23	First Issue	SLC	SAM
A	23.06.23	Presentation updated	BF	
B	23/08/23	Layout Revision	S	
C	14/02/24	Updated parameters plan & site boundary	SLC	BF

Status

FOR PLANNING

Client

Enso Green Holdings D Limited

Project

Helios Renewable Energy Project

Drawing Title

Solar Farm Preliminary
Surface Water Drainage
Arrangements
Sheet 1 of 17

Drawing No.

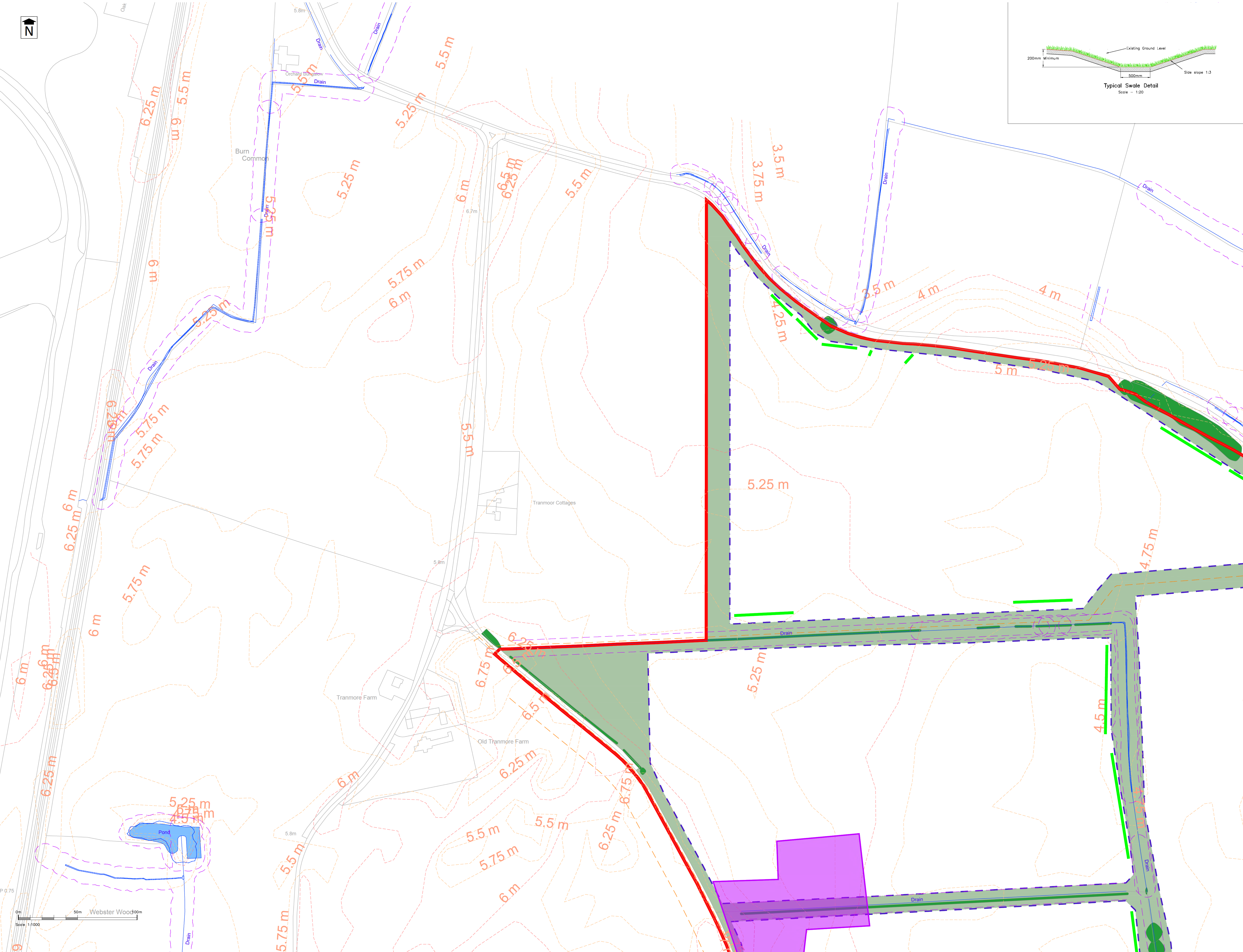
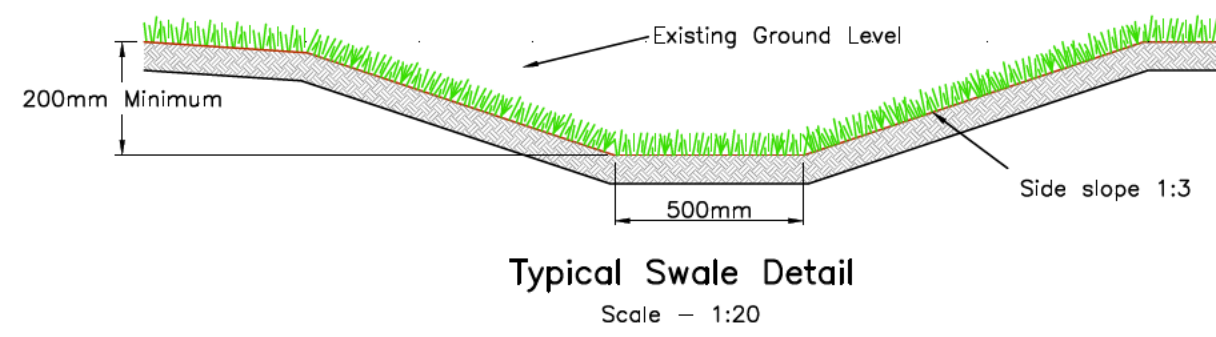
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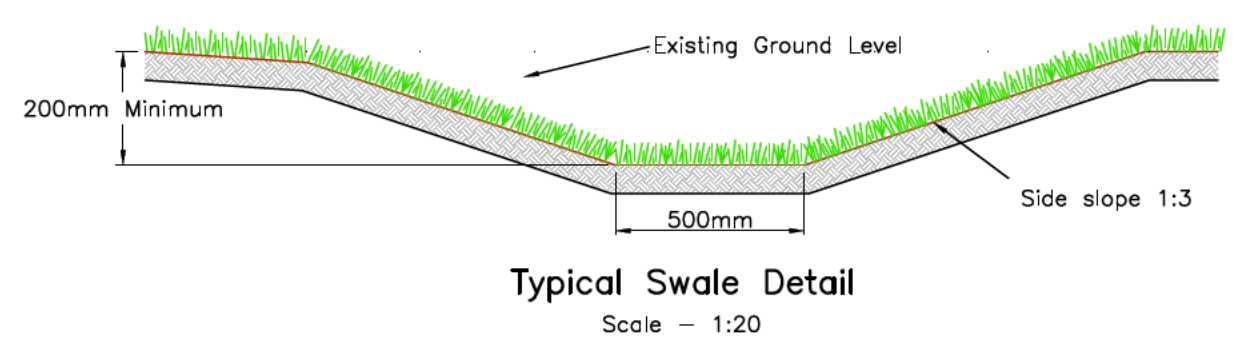
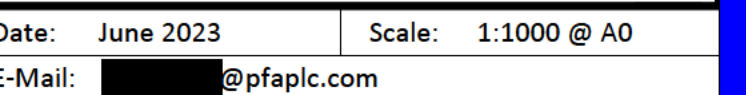
Rev C

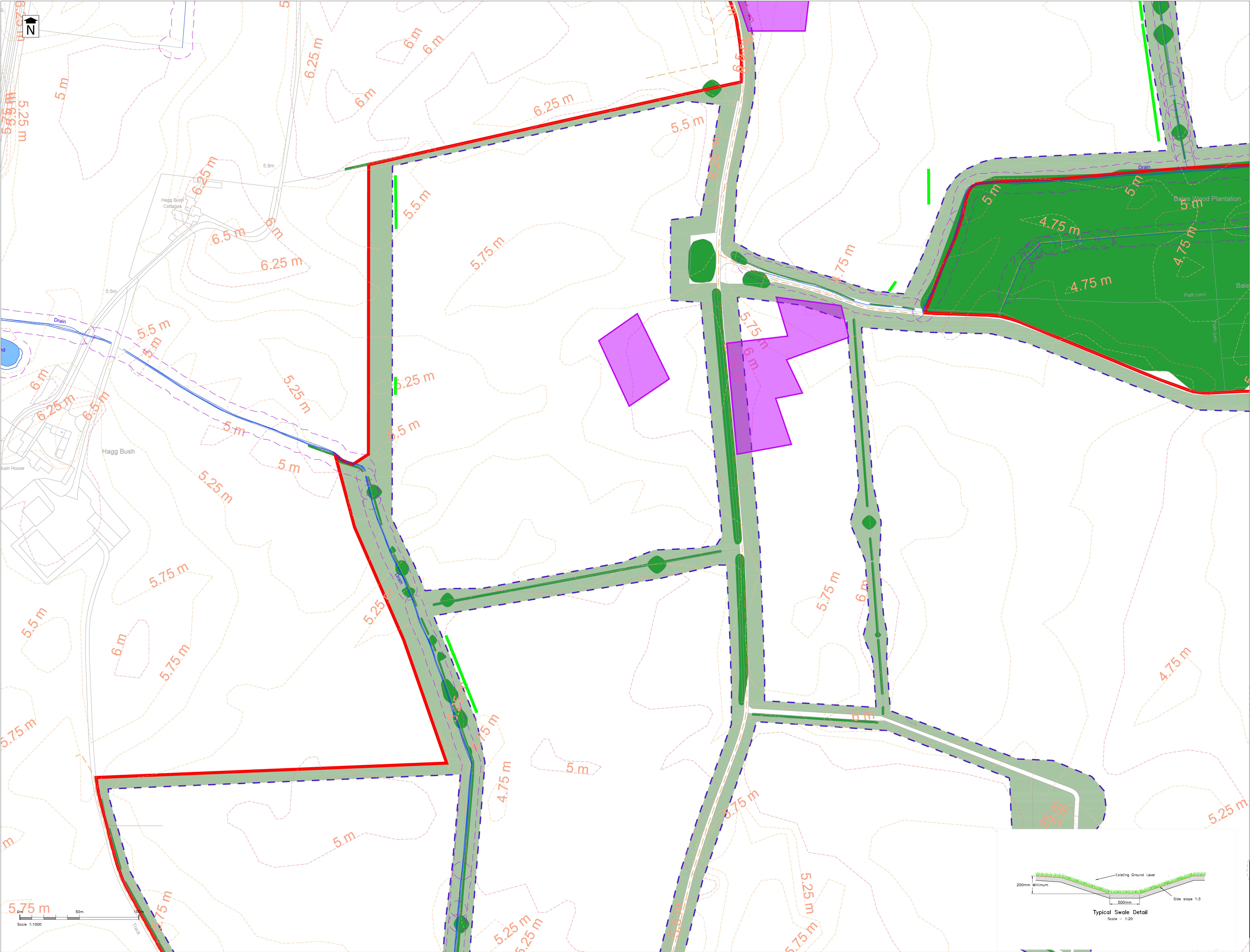
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E-Mail: info@pfapltd.com



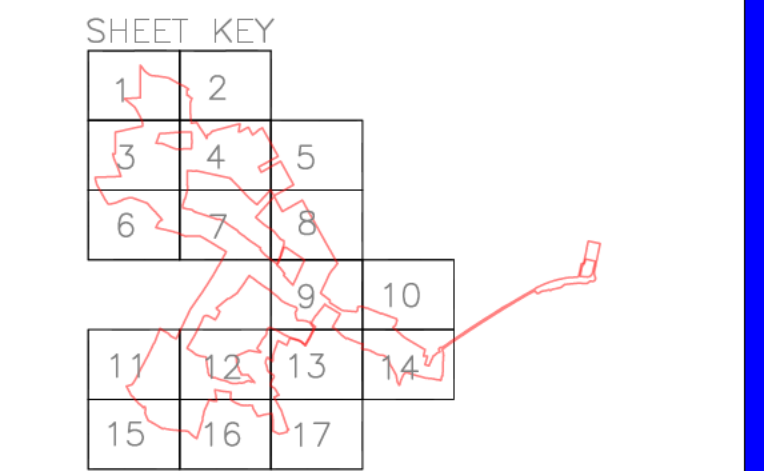




For Planning
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- KEY**
- Site Boundary (Indicative Only)
 - Ordinary Watercourse
 - Ordinary Watercourse (DB Maintained)
 - 7m Watercourse Buffer
 - Overland Flow Route (Indicative Only)
 - Archeological Mitigation Areas
 - Interception Swales

- NOTES**
- Based on drawing DX-01-P02 Rev09 Parameter Plan by Enso Energy dated 07/02/2024
 - Drawing based on Topographical Survey, produced by Above Surveying Ltd., drawing number DRAX LINEWORK ("CAD") (Dated 6th May 2022).
 - Based on data from Archeological Services WYAS Reference: X770_HLO22 Received 05/05/2023
 - Approximate Top of Bank based on LIDAR data at 0.1m intervals. 7m buffers based on the approximate top of bank data. Top of Bank will need to be accurately verified.
 - Contains public sector information licensed under the Open Government Licence v3.0.
 - 7m watercourse buffer in accordance with Selby Internal Drainage Board byelaw (Byelaw 10: No person without the previous consent of the Board shall erect any building or structure, whether temporary or permanent, or plant any tree, shrub, willow or other similar growth within 7 metres of the landward foot of the bank where there is an embankment or wall or within 7 metres of the top of the batter where there is no embankment or wall, or where the watercourse is enclosed within 7 metres of the enclosing structure).
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Rev	Date	Description	Drawn	Check
A	09/06/23	First Issue	SIC	SAM
A	23/06/23	Presentation updated		BF
B	23/08/23	Layout Revision	IS	
C	14/02/24	Updated parameters plan & site boundary	SIC	BF

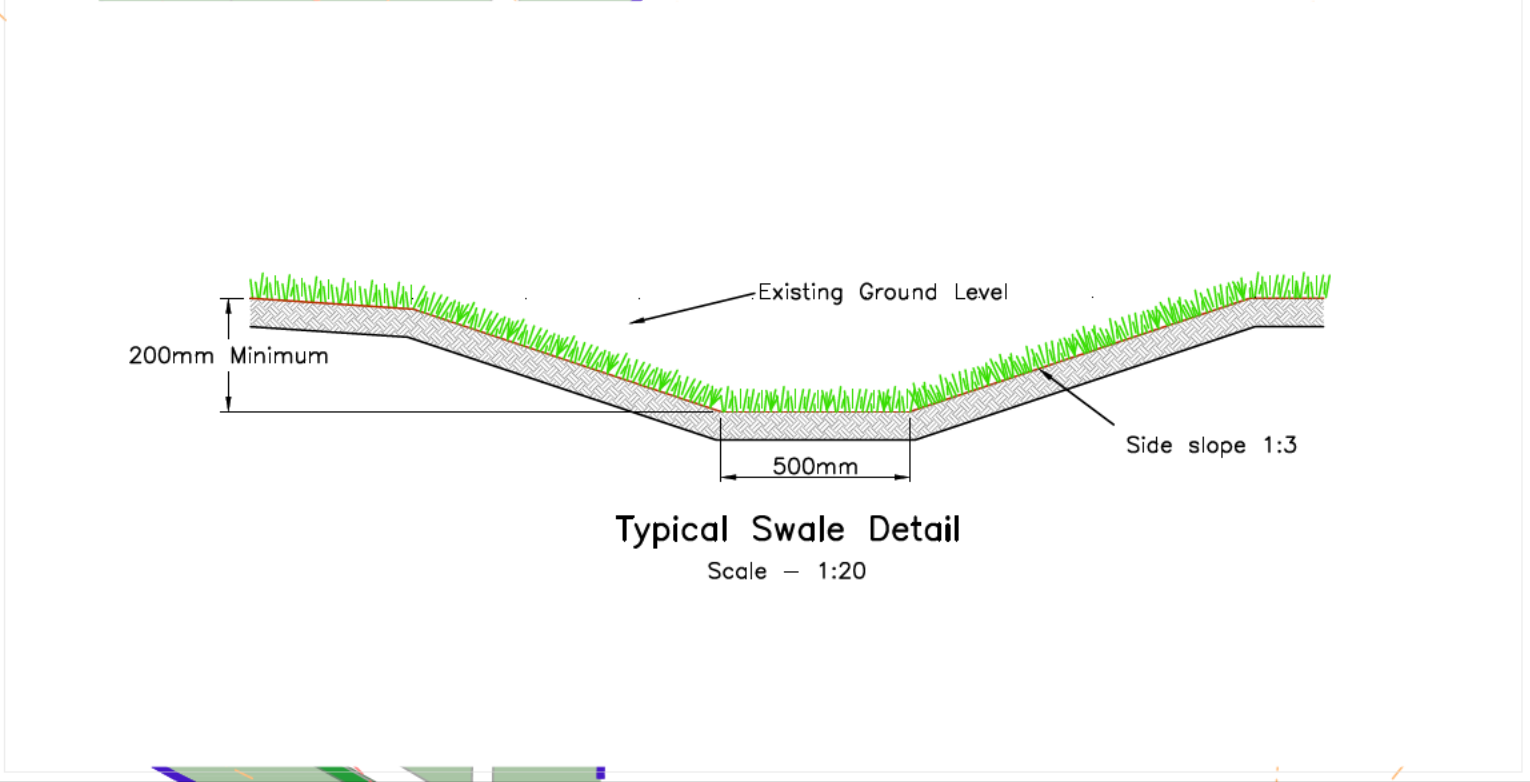
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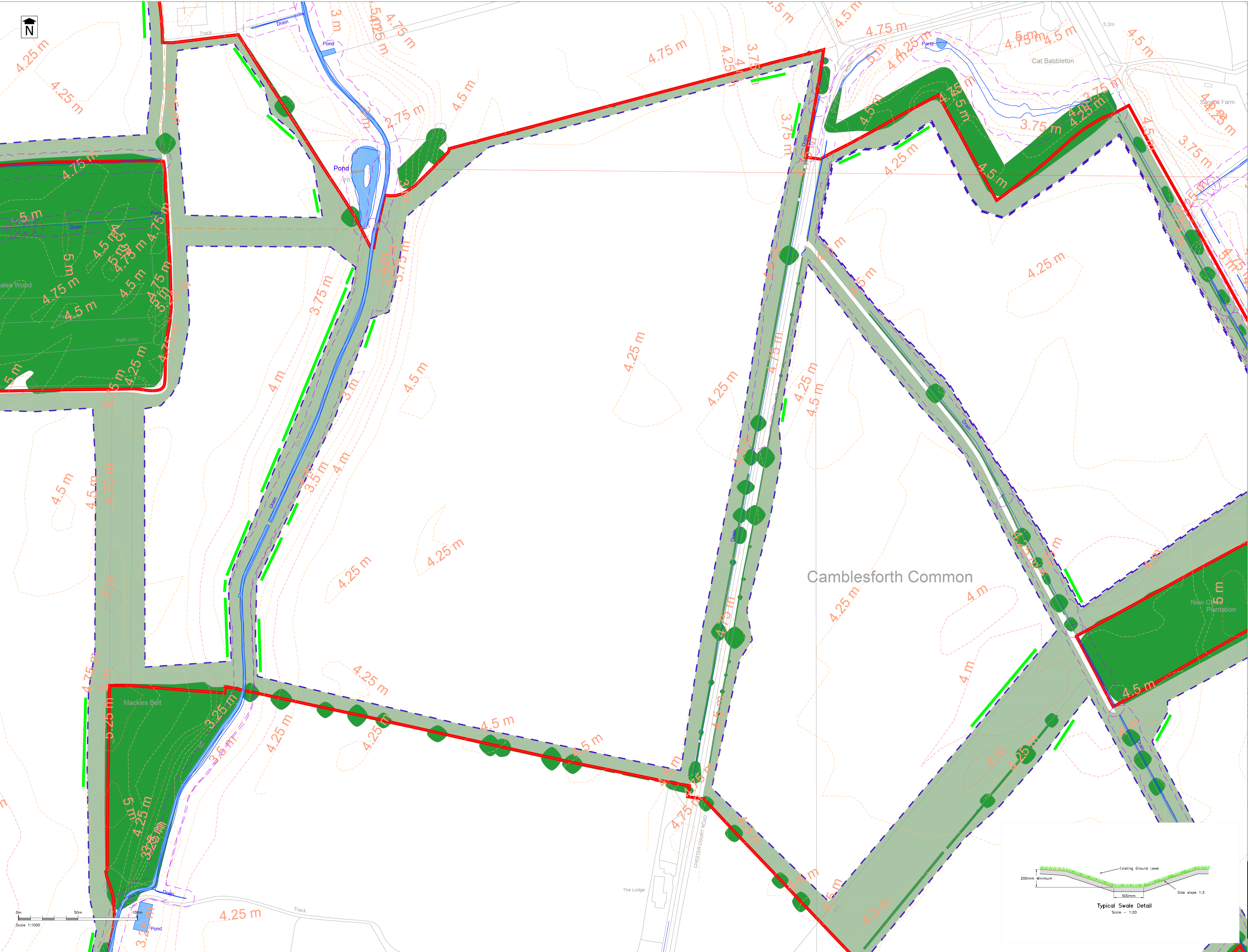
Client
Enso Green Holdings D Limited

Project
Helios Renewable Energy Project

Drawing Title
Solar Farm Preliminary Surface Water Drainage Arrangements Sheet 3 of 17

Drawing No. **E216/92** Rev C
Date: June 2023 Scale: 1:1000 @ A0
E-Mail: info@pfapl.com





For Planning
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- KEY**
- Site Boundary (Indicative Only)
 - Ordinary Watercourse
 - Ordinary Watercourse (DB Maintained)
 - 7m Watercourse Buffer
 - Overland Flow Route (Indicative Only)
 - Archaeological Mitigation Areas
 - Interception Swales

- NOTES**
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Perimeter Plan by Enso Energy dated 07/02/2024
 - Drawing based on Topographical Survey, produced by Above Surveying Ltd., drawing number DRAX LINEWORK ("CAD") (Dated 6th May 2022).
 - Based on data from Archaeological Services WAS Reference: XT70_IL022 Reviewed 05/05/2023
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SHEET KEY

1	2	3
4	5	6
7	8	9
10	11	12
13	14	15
16	17	18

Rev	Date	Description	Drawn	Check
#	09.06.23	First Issue	SLC	SAM
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B	23/06/23	Layout Revision	IS	
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Status
FOR PLANNING

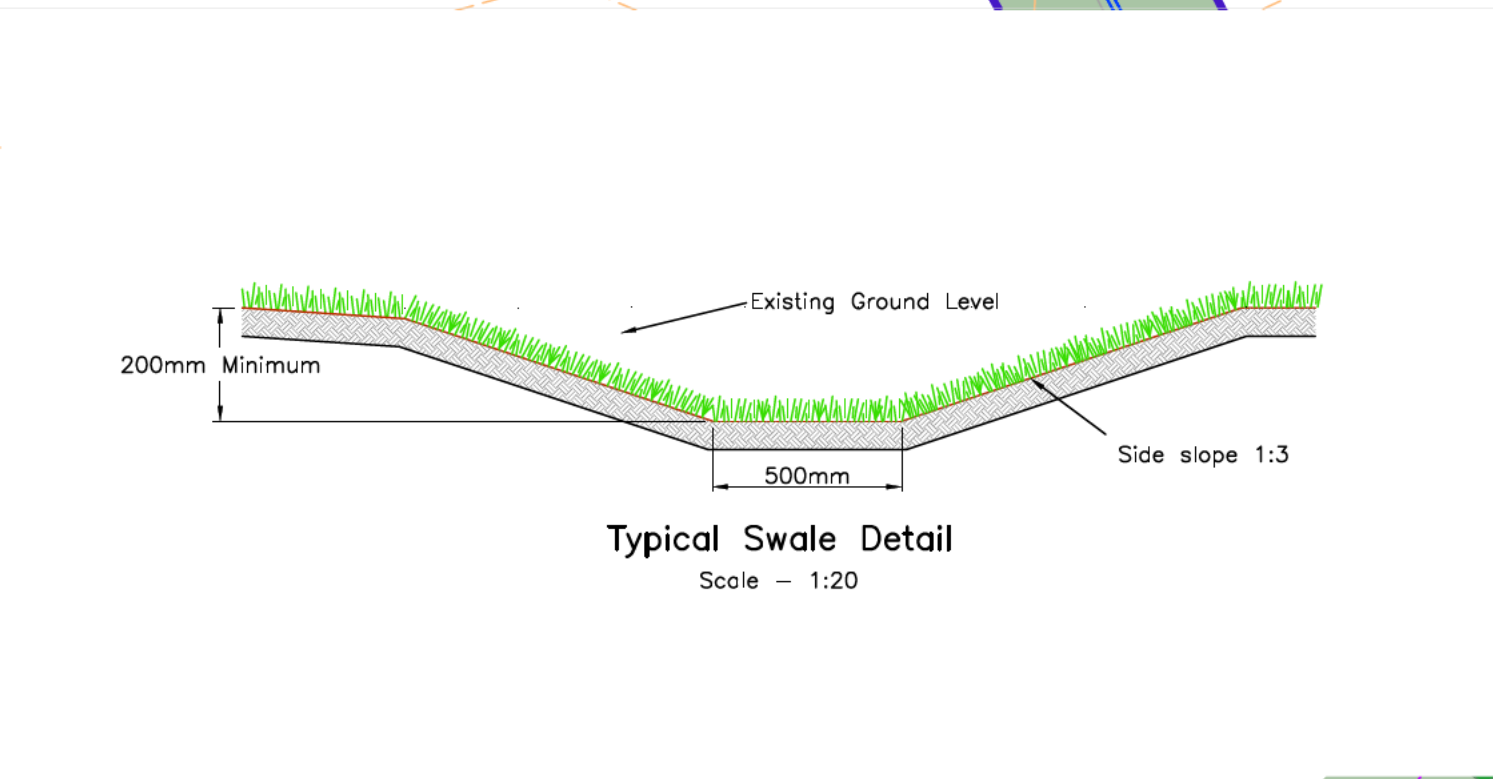
Client
Enso Green Holdings D Limited

Project
Helios Renewable Energy Project

Drawing Title
Solar Farm Preliminary Surface Water Drainage Arrangements Sheet 4 of 17

Drawing No. **E216/93** Rev C

Date: June 2023 Scale: 1:1000 @ A0
E-Mail: info@pfaplc.com

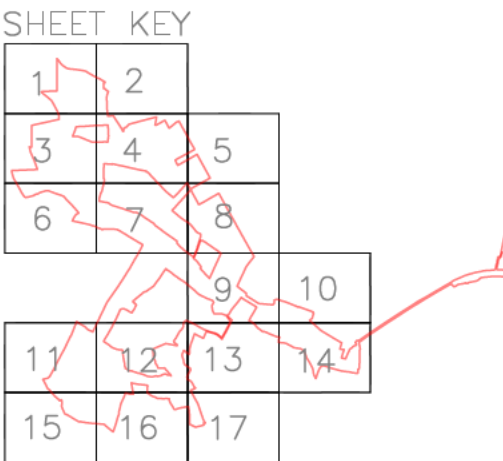




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A	23.06.23	Presentation updated	BF	
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Status **FOR PLANNING**

Client
Enso Green Holdings D Limited

Project
Helios Renewable Energy Project

Drawing Title
Solar Farm Preliminary Surface Water Drainage Arrangements Sheet 5 of 17

Drawing No. **E216/94** Rev C
Date: June 2023 Scale: 1:1000 @ A0
E-Mail: @pfapl.com