

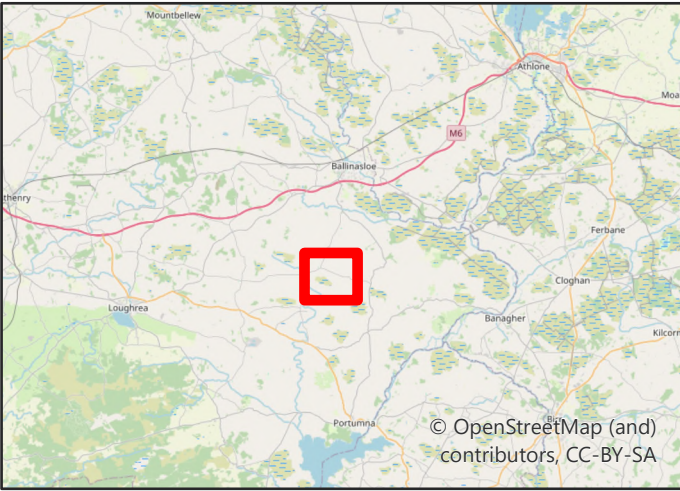
Ballydonagh Solar Farm
Watercourses and
Photo Locations
Figure 4.1

Key

- Development Boundary
- Watercourses
- Photo Locations

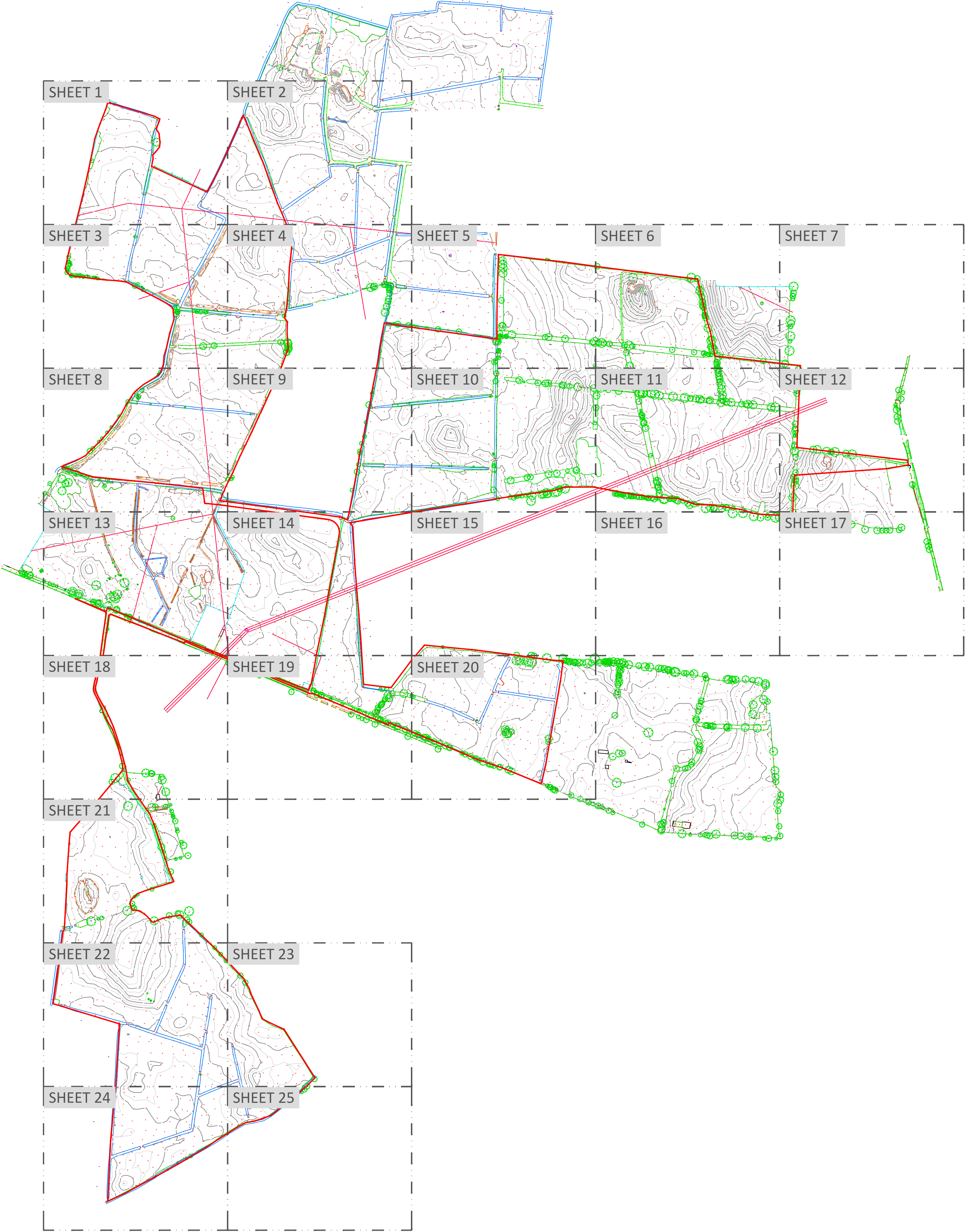


Neo Office Address:
Johnstown Business Centre, Johnstown House, Naas, Co. Kildare



Date: 10/10/2025
Drawn By: Ollie Henderson
Scale (A3): 1:18,000
Drawing No: NEO00887/035/A





Drawn By: Ollie Henderson
Address: Wright Business Centre
1 Lonmay Road
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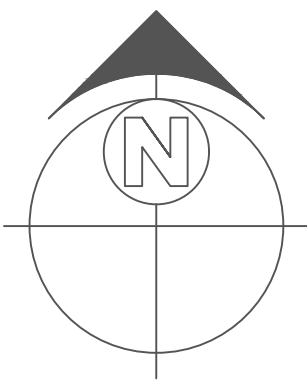
Ver.	Date	Comments
B	13/10/2025	
A	10/11/2022	



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Warrington Office: T:01925 861 716 E: info@neo-environmental.co.uk
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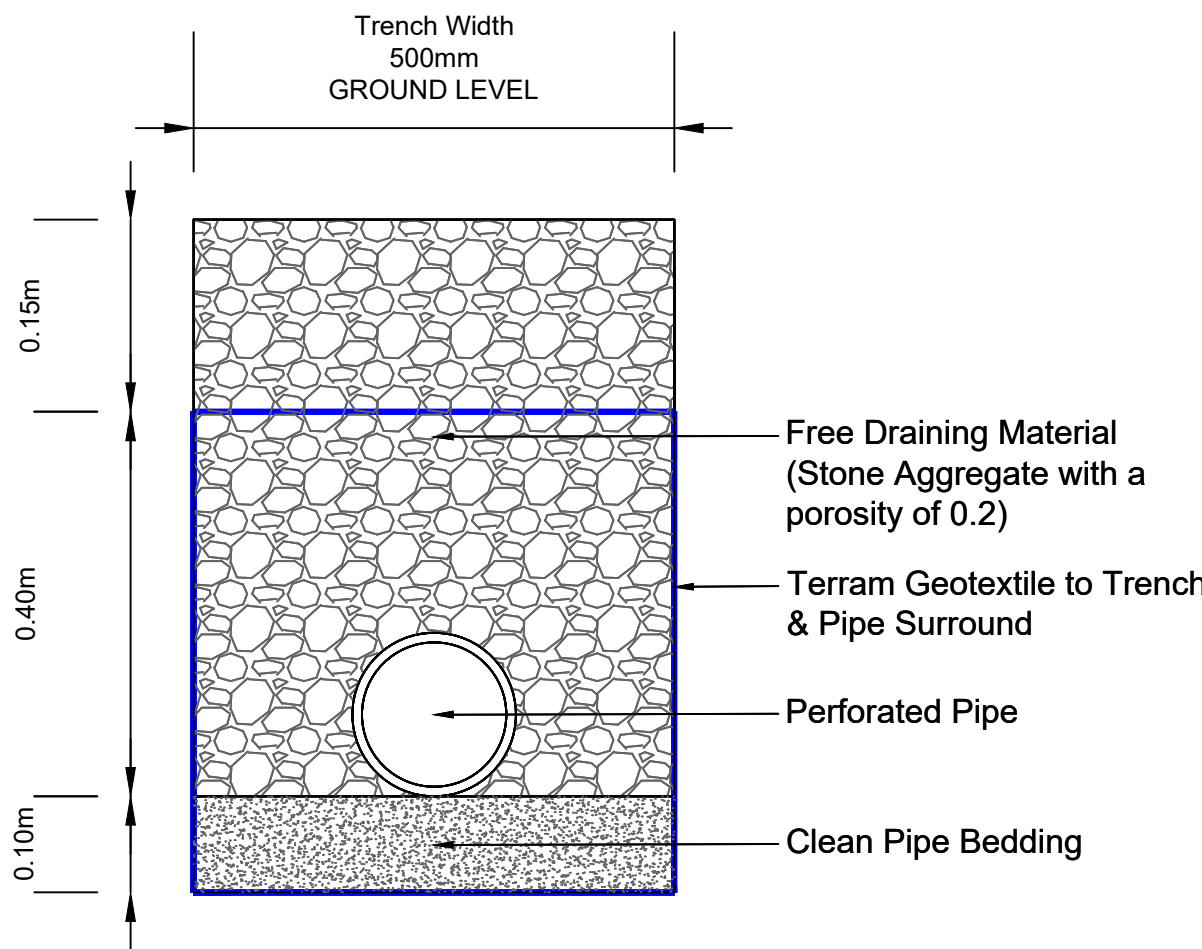
Project:	Ballydonagh Solar Farm
Client:	RES
Drawing:	Topographical Survey
Project No.:	NEO00874
Drawing No.:	NEO00874_0271_A Figure 4.2
Drawn: OH	Checked: MM Approved: PN
Scale:	1:4,500 @ A1 Revision:
Date:	13 October 2025 B



- Key
- PLANNING APPLICATION BOUNDARY (OUTSIDE LINE DENOTES BOUNDARY)
 - ACCESS TRACK
 - FENCING
 - GATE (FENCE)
 - INDICATIVE SOLAR PV ARRAY
 - HARDSTAND
 - LV/MV TRANSFORMER SUBSTATION
 - TEMPORARY CONSTRUCTION COMPOUND
 - CCTV
 - INDICATIVE DITCH CROSSING
 - INDICATIVE GATED WATERCOURSE CROSSING
 - SITE ENTRANCE
 - PROPOSED GORTNALUG 110kV SUBSTATION
 - EXISTING AGANNYGAL-SHANNONBRIDGE 110kV CIRCUIT TO BE REMOVED
 - EXISTING ESB POLE SET 162 TO BE REMOVED
 - INFILTRATION DRAINS

Infiltration Drains

Infiltration Drain (NTS)



Drawn By: Thomas Hughes
Address: Wright Business Centre
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Ver.	Date	Comments
A	03/12/2025	

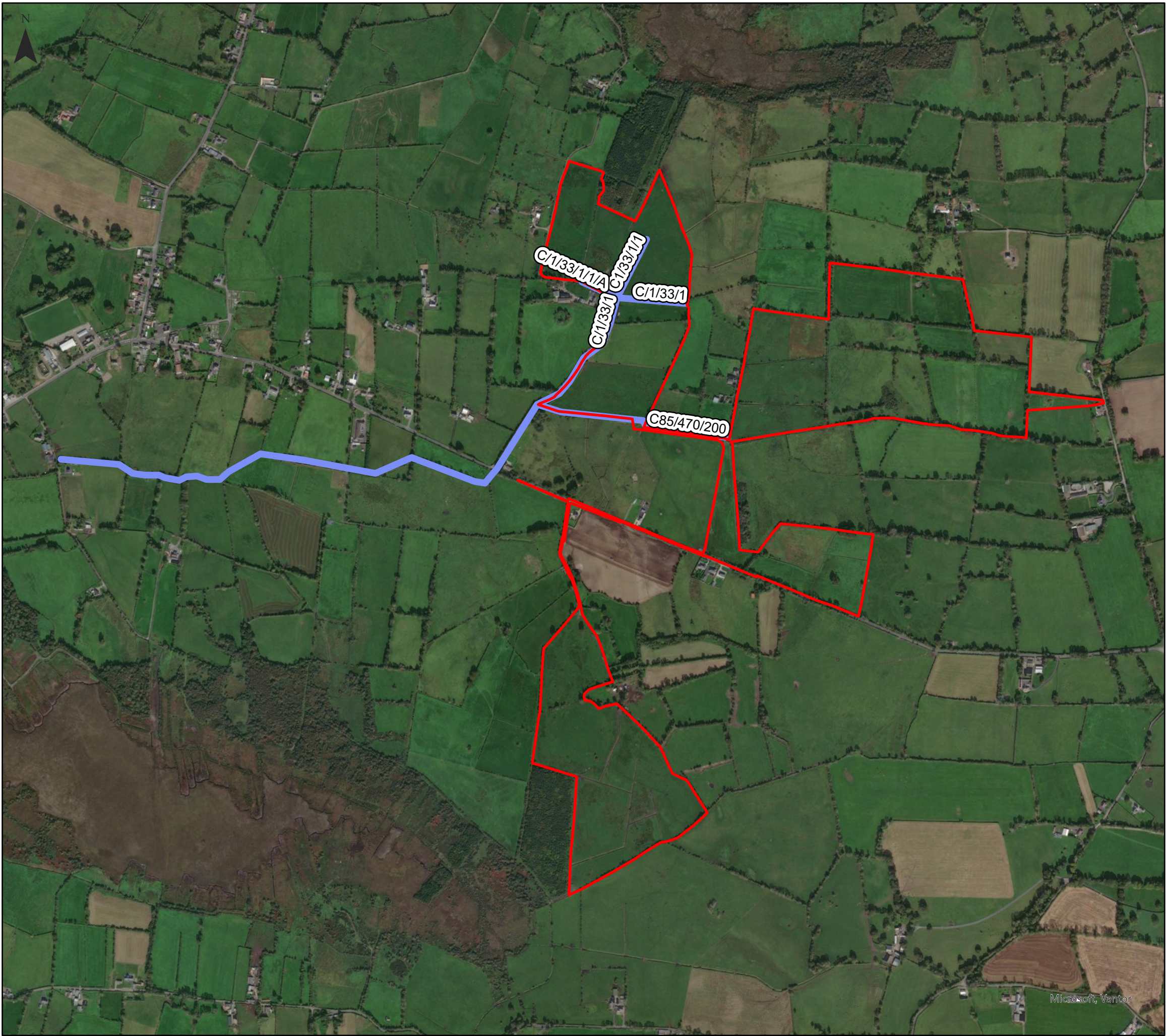


Project: Ballydonagh Solar Farm
Client: RES

Drawing: Outline Solar SuDS Design

Project No.: NEO00874
Drawing No.: NEO00874_030I_B Figure 4.4
Drawn: TH Checked: MM Approved: PN

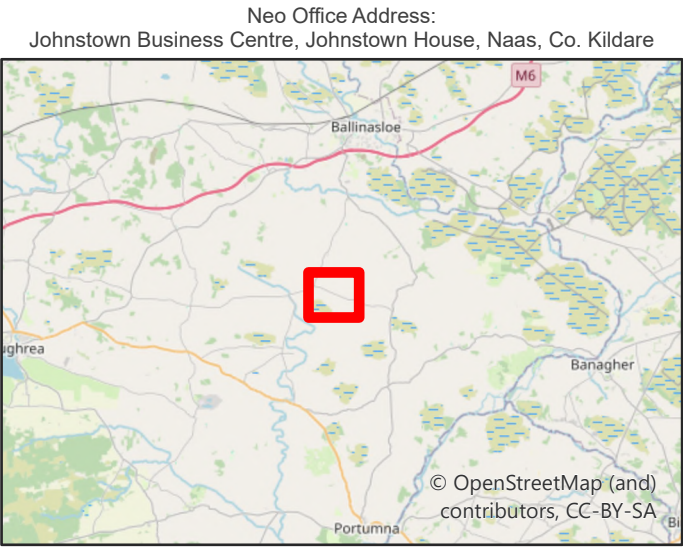
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Date: 03rd December 2025 B



Ballydonagh Solar Farm
Arterial Drainage Schemes
Figure 4.5

Key

-  Development Boundary
-  Arterial Drianage Schemes





Appendix 4B: Hydrology Photos



Photo 1 – Field drain c. 3m wide by c. 3m deep



Photo 2 – Earth bank located alongside field drain



Photo 3 – Shallow field drain, merging into where East Loughturk and West Kiltormer watercourse converge



Photo 4 – West Kiltormer Stream has steep banks and an earth bank located on eastern border



Photo 5 – Field drain c. 3m wide by c. 2m deep



Photo 6 – Ditch crossing



Photo 7 – Ditch crossing with culvert



Photo 8 – Depression in ground – possible area for surface water accumulation



Photo 9 – Overgrown field drain



Photo 10 – Flat topography in northeast direction



Photo 11 – Declining topography down the site



Photo 12 – Shallow field drain



Photo 13 – Field drain c. 1.5m deep by c. 2m wide at top



Photo 14 – Undulating topography across the site



Photo 15 – Shallow field drain



Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	30	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	Scotland and Ireland	Connection Type	Level Soffits
M5-60 (mm)	17.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.300	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Simulation Settings

Rainfall Methodology	FSR	Drain Down Time (mins)	240
Rainfall Events	Singular	Additional Storage (m³/ha)	0.0
FSR Region	Scotland and Ireland	Starting Level (m)	
M5-60 (mm)	17.000	Check Discharge Rate(s)	✓
Ratio-R	0.300	1 year (l/s)	0.0
Summer CV	0.750	30 year (l/s)	0.0
Winter CV	0.840	100 year (l/s)	0.0
Analysis Speed	Normal	Check Discharge Volume	✓
Skip Steady State	x	100 year +20% 360 minute (m³)	2

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	20	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	1.95
Greenfield Method	IH124	Growth Factor 100 year	2.48
Positively Drained Area (ha)	0.022	Betterment (%)	0
SAAR (mm)	1039	QBar	0.0
Soil Index	1	Q 1 year (l/s)	0.0
SPR	0.10	Q 30 year (l/s)	0.0
Region	11	Q 100 year (l/s)	0.0
Growth Factor 1 year	0.85		

Pre-development Discharge Volume

Site Makeup	Greenfield	Return Period (years)	100
Greenfield Method	FSR/FEH	Climate Change (%)	20
Positively Drained Area (ha)	0.022	Storm Duration (mins)	360
Soil Index	1	Betterment (%)	0
SPR	0.10	PR	0.147
CWI	125.098	Runoff Volume (m³)	2