336-005-RP1

Flood Risk Assessment

Proposed BESS - Beauly, Inverness

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1 Introduction

Haydn Evans Consulting Ltd (HEC) has been commissioned by Field Beauly Ltd (hereafter referred to as the Client) to carry out a Flood Risk Assessment (FRA) to support a planning application for the construction and operation of a Battery Energy Storage System (BESS) of up to 100 MW with associated infrastructure, access and ancillary works at Dunballoch Farm, Beauly, Inverness IV4 7AY.

1.1 Limitation

This document has been prepared for the sole use of the Client. The copyright of this report is vested in HEC and the Client. HEC accepts no responsibility whatsoever to other parties to whom this report, or any part thereof, is made known. Any such other parties that rely upon the report do so at their own risk.

The FRA should be read in conjunction with the Drainage Impact Assessment (DIA) which has been prepared for this site; HEC document reference 336-005-RP2.

1.2 Site Proposal

The Proposed Development would have a built compound that has a development footprint of approximately 1.5 hectares (ha) across the 18.51 ha site.

The Proposed Development consists of a Battery Energy Storage System (BESS) of up to 100 MW with associated infrastructure, earthworks, drainage, accesses and ancillary works (including landscaping and biodiversity enhancement).

2 Location & Existing Conditions

2.1 Site Location

The site is located to the south east of Beauly and to the west of Inverness, on approximate Ordnance Survey (OS) grid reference 57.465504, -4.460484 (see red line boundary on Figure 1).

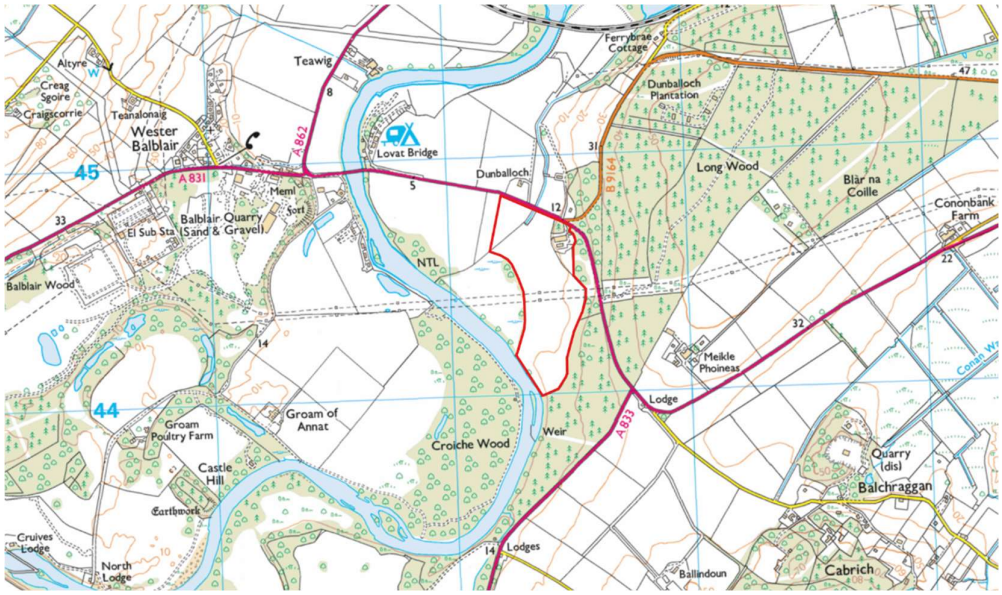


Figure 1: Site location map

The site is surrounded by greenfield land on the north, east, and west boundaries. The southern boundary runs along and is adjacent to the River Beauly. An access track is located along the north-eastern boundary of the site. Access from the A862 is from the north, via the existing tracks in this direction. The site is required to have a temporary construction access during the development, this will be constructed with semi-permeable materials mitigating any further drainage measures.

2.2 Existing Topography

A topographic survey has been produced for the site (Appendix A). The survey shows ground levels to fall from east to west. Ground levels in the east are circa 12.7 metres Above Ordnance Datum (mAOD), falling to circa 5.2 mAOD in the west.

2.3 Existing Sewer Assets

A combined utilities plan has been produced for the site and this does not show any assets belonging to Scottish Water (SW), see Appendix B.

2.4 Existing Drainage Regime

There is no formal drainage system located on site and therefore surface water run-off would flow overland following the topography of the site or infiltrate into the underlying soils.

2.5 Ground Conditions

British Geological Survey (BGS) mapping confirms the site to have a bedrock geology of Braemore Mudstone Formation being a combination of mudstone, sandstone, and limestone (see Figure 2). The superficial deposits for the site are shown to be Raised Marine Beach

Deposits of Holocene Age being a combination of sand and gravel (see Figure 3). There is a small section of the site where the superficial deposits are unknown.

Figure 2: BGS Geology Map of Bedrock geology

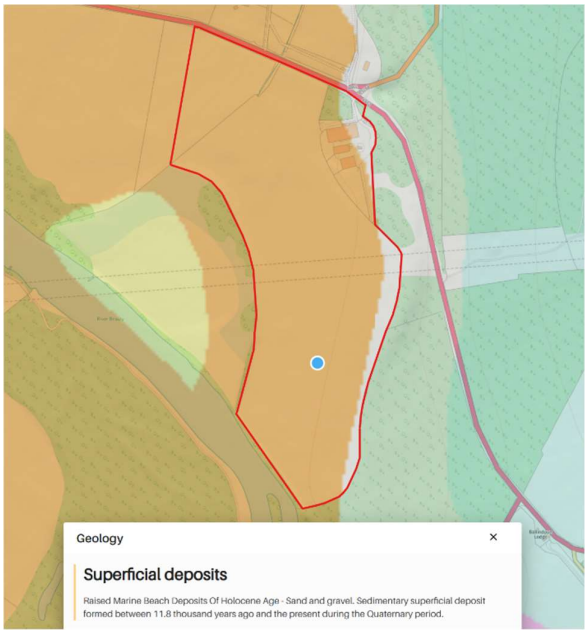


Figure 3: BGS Geology Map of Superficial deposits

Online mapping shows the site to be in an area with a 'low' groundwater vulnerability, this is also confirmed in the Geoenvironmental and Geotechnical Desk Study (see Appendix C) within the borehole logs from BGS show groundwater to be greater than 3m below ground level. The Ground Investigation Report by Highland Geotechnical Services stated that no groundwater was encountered (see Appendix C).

3 Planning Policy Context

3.1 National Planning Framework 4 (NPF4 Adopted 2023)

The National Planning Framework 4 (NPF4, 2023) includes government policy for developments and meeting the challenges of climate change and flood risk.

The Policy 22 guidance states *"Development proposals at risk of flooding or in a flood risk area will only be supported if they are for essential infrastructure, water compatible uses, redevelopment of an existing building or site for an equal or less vulnerable use, or redevelopment of previously used sites in built up areas."*

The protection offered by an existing formal flood protection scheme or one under construction can be considered when determining flood risk. All risks of flooding are understood and addressed; there is no reduction in floodplain capacity, increased risk for others, or a need for future flood protection schemes; the development remains safe and operational during floods; flood resistant and resilient materials and construction methods are used; and future adaptations can be made to accommodate the effects of climate change.

Development proposals will not increase the risk of surface water flooding, manage all rain and surface water through sustainable urban drainage systems (SUDS), and seek to minimise the area of impermeable surface. These proposals will be supported if connecting to public water mains; however, if not feasible the applicant will need to demonstrate that water for consumption is sourced from a sustainable source. Proposals which create, expand or enhance opportunities for natural flood risk management, including blue and green infrastructure, will be supported."

3.2 Scottish Environment Protection Agency (SEPA)

SEPA is an independent advisor on flood risk, providing flood risk advice for certain consultations. SEPA document '*Technical Flood Risk Guidance for Stakeholders'* outlines the information required to be submitted a part of a FRA.

3.3 Highland-wide Local Development Plan (HwLDP, Adopted 2023)

On 5 April 2012 the Highland-wide Local Development Plan was adopted by the Council and was constituted as the local development plan in law. The Plan sets out a vision statement and spatial strategy for the area, taking on board the outcomes of consultation undertaken during preparation of the plan. Policy 64 is relevant to this assessment and reads as follows:

Policy 64 Flood Risk

Development proposals should avoid areas susceptible to flooding and promote sustainable flood management.

Development proposals within or bordering medium to high flood risk areas, will need to demonstrate compliance with Scottish Planning Policy (SPP) through the submission of suitable information which may take the form of a Flood Risk Assessment.

Development proposals outwith indicative medium to high flood risk areas may be acceptable. However, where:

- better local flood risk information is available and suggests a higher risk;
- a sensitive land use (as specified in the risk framework of Scottish Planning Policy) is proposed, and/or;
- the development borders the coast and therefore may be at risk from climate change;

a Flood Risk Assessment or other suitable information which demonstrates compliance with SPP will be required.

Developments may also be possible where they are in accord with the flood prevention or management measures as specified within a local (development) plan allocation or a development brief. Any developments, particularly those on the flood plain, should not compromise the objectives of the EU Water Framework Directive.

Where flood management measures are required, natural methods such as restoration of floodplains, wetlands and water bodies should be incorporated, or adequate justification should be provided as to why they are impracticable.

4 Flood Risk Assessment

4.1 Introduction

The main sources of flooding have been assessed as part of this report, in line with the NPF4, as follows:

- Tidal and Fluvial
- Pluvial
- Groundwater;
- Sewers;
- Reservoirs and other artificial sources.

4.2 Tidal and Fluvial

Tidal, or coastal flooding from the sea, is the inundation of land along the coast usually caused by high tides or storm surge. Fluvial, or river flooding, occurs when the water level in a river, lake or stream rises and overflows onto neighbouring land as a result of the capacity of rivers being exceeded by the river flow.

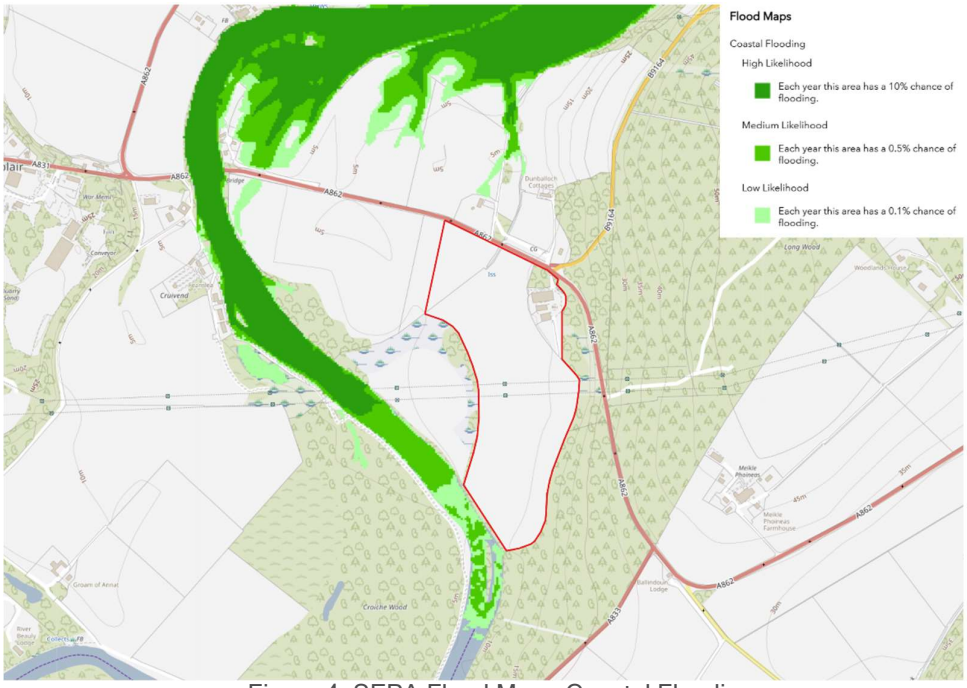


Figure 4: SEPA Flood Map - Coastal Flooding

The site is approximately 4.7 kilometres (km) away from the coast in a north-easterly direction. Coastal flooding could affect areas in the close vicinity of the site boundary as the River Beauly (that runs on the southern boundary) leading to the Beauly Firth and adjoining Inner Moray Firth is tidally influenced. The tidal flooding does not enter the site boundary.

The site is at low risk of flooding from tidal sources.

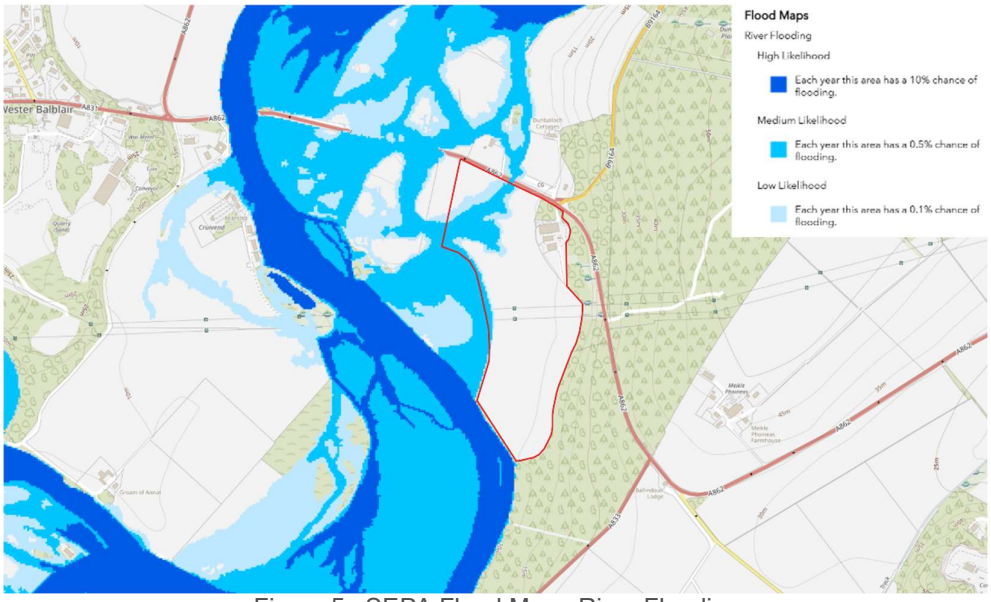


Figure 5 – SEPA Flood Map – River Flooding

The River Beauly runs adjacent to the southern boundary of the site and a short distance from the western boundary. There is low (classified as 0.1%) and medium (0.5%) associated flood risk, linked with this watercourse. The topography of the site is such that it falls from east to west with the western boundary being slightly above flood levels except for a small area in the north where there is a medium flood risk (See Figure 5).

The site is not located on a flood plain and therefore there is no reduction in flood plain capacity. The site is at low risk of flooding from fluvial sources.

4.3 Pluvial

Pluvial, or surface water flooding, occurs when heavy rainfall creates a flood independent of an overflowing water body. Pluvial flooding can occur in any location and is usually a result of intense rainfall saturating an urban drainage system, rainfall run-off on elevated terrain or where natural ground has been paved. Surface water run-off can be channelled either by natural features such as valley lines or by artificial features such as highways, to low points in the topography. If surface water is not able to flow away from topographical low points, then pluvial flooding can occur.

The SEPA Surface Water Flooding map (see Figure 6) shows the site and majority of the surrounding area to be at a very low risk of flooding from surface water.

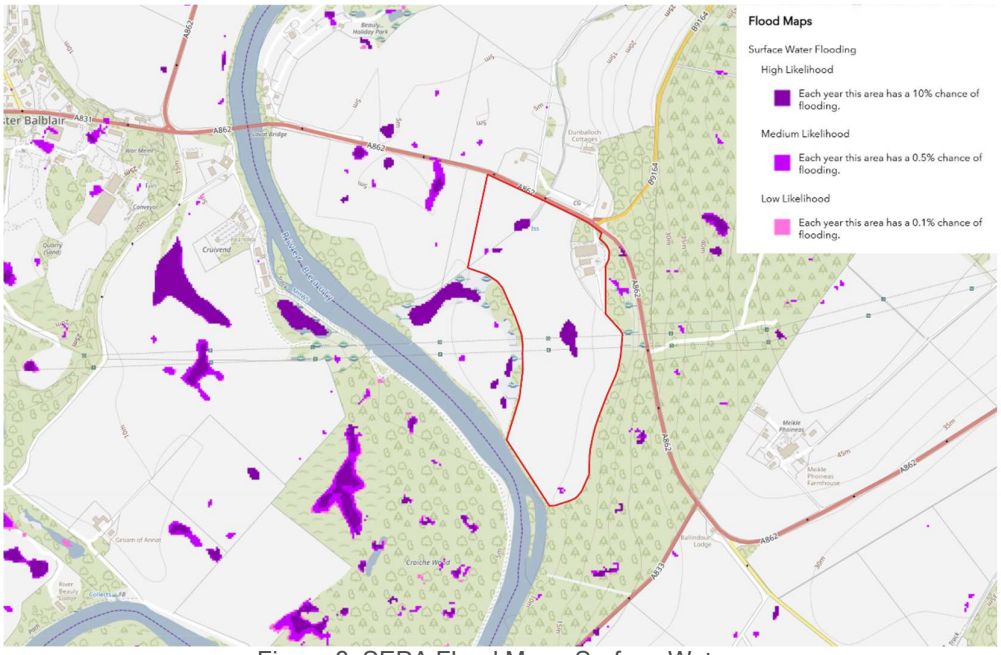


Figure 6: SEPA Flood Map – Surface Water

OS mapping contours show surrounding ground levels to generally fall from east to west. The eastern most half of the site is located at a local high point with the upstream catchment comprising greenfield land and is shown to include marshy, grassy land; the rate and volume of surface water likely to be shed towards the site from this direction is considered to be minimal and the topography does not create a valley line to channel flow towards the site. The levels across the site undulate and therefore surface water could pond in the lower areas; this is shown and confirmed on the SEPA Surface Water Flooding maps.

The proposed surface water drainage strategy for the site is provided in the HEC DIA report (reference 336-005-RP2). The DIA report provides information on how the proposals for the site mimic the existing drainage regime for the site of infiltrating into the below soils; this mitigates the potential for any surface water flooding to occur at the site and reduces the risk of surface water flooding to off-site receptors.

The site is at a low risk of flooding from this source.

4.4 Groundwater

Groundwater flooding generally occurs when water levels below the ground rise during wet winter months; these levels usually fall again in the summer months as water flows out into rivers.

As discussed in Section 2.5, the site is in a low groundwater vulnerability area and therefore groundwater expression at the surface is unlikely.

The Geoenvironmental and Geotechnical Desk Study explains the surrounding borehole logs from BGS show groundwater to be greater than 3m below ground level and therefore 1m clearance from the base of the basin (1.5m deep) is achievable within the strategy (see Appendix C).

The site is at low risk of flooding from this source.

4.5 Sewers

The combined utilities plan shows there are no Scottish Water (SW) sewers within the vicinity of the site. The site is therefore not at risk of flooding from this source.

The site is therefore not at risk of flooding from sewers.

4.6 Reservoirs & Artificial Sources

A review of OS mapping shows that there are no significant water bodies (lakes, large ponds, reservoirs etc.) within the immediate vicinity of the site that appear likely to pose a risk to the site.

The flood risk from the failure of a reservoir has been reviewed, the site not in an area at risk of flooding from reservoirs.

The site is at low risk of flooding from these sources.

5 Summary and Conclusion

HEC has been commissioned by Field to carry out a FRA to support a planning application for the construction and operation of a 100 MW Battery Energy Storage System (BESS) with associated infrastructure, access and ancillary works on land at Dunballoch Farm, Beauly, Inverness IV4 7AY.

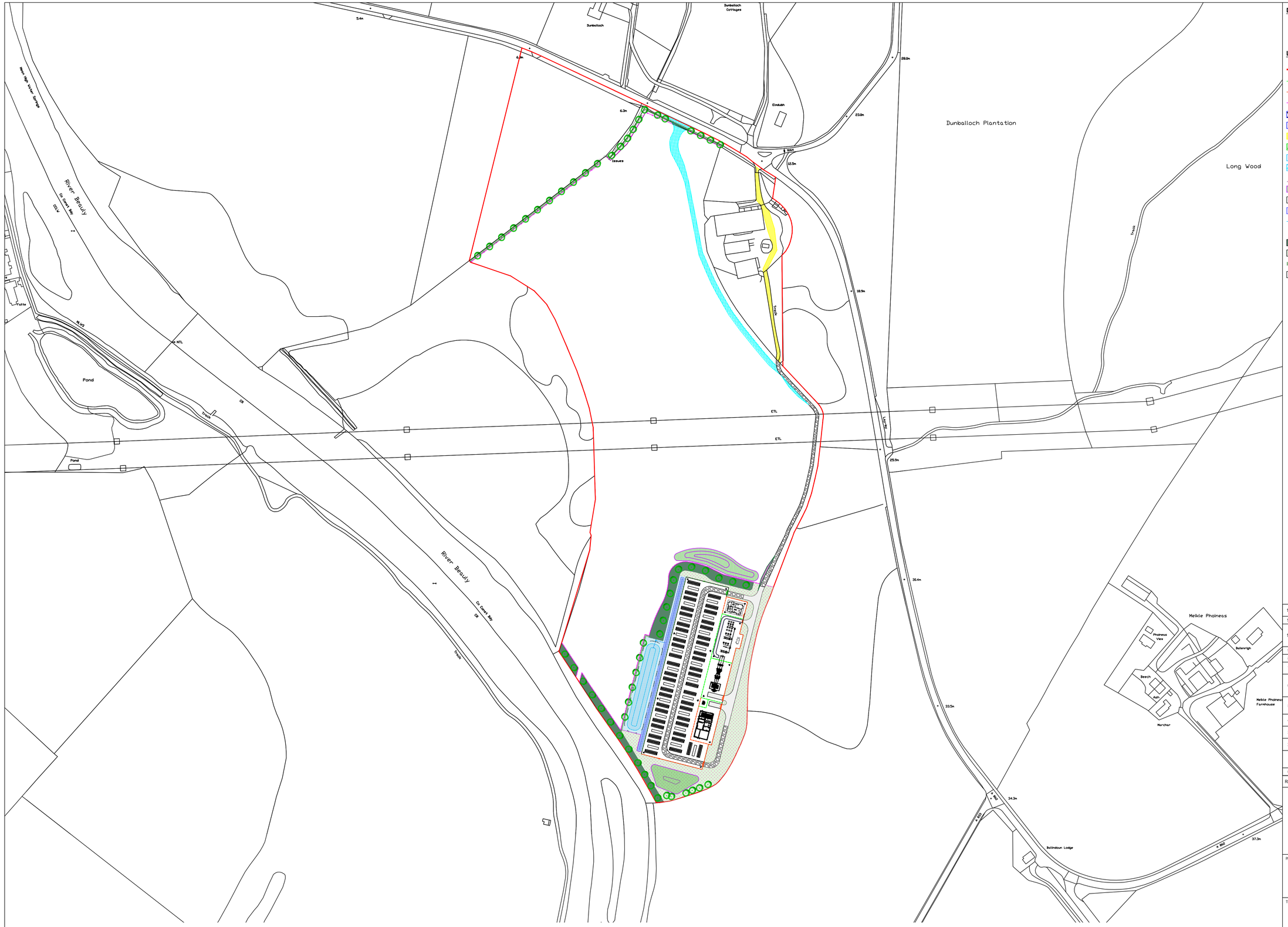
The site is at a low risk of flooding from all sources and meets the requirements of the NPF4 in terms of appropriate development.

The proposals for the site do not increase on or off-site flood risk and should therefore be found acceptable.

Appendix A Existing & Proposed Site

Field Indicative Site Layout Plan BTGBBEA02-001.1

Topographical Survey by Castle Keep Survey - 290921 Beauly 02-OV



1 Detailed Site Plan
Scale 1:2000 @ A1

Drawing Notes:

1. All dimensions are shown in metres unless noted otherwise.
2. Do not scale from this drawing.

Legend:

- Planning Boundary
- 3m Palisade Fencing with Electric Topper
- Fire Proof 4m Acoustic Fencing
- Stock Proof Fencing
- Access Road - Aggregate Finish
- Access Road - Asphalt Finish
- Access Road from Highways
- Planting/Landscaping Area
- Infiltration Basin
- Temporary Alternative Access
- Passing Places
- Bunding
- Maintenance Strip
- Attenuation Basin
- Surface Water Drain
- Surface Water Manhole
- Native Woodland Edge
- Species-rich Meadow
- Native Mixed Hedgrow
- Wetland Meadow
- Native Broadleaved Tree

REV	DATE	DESCRIPTION	BY	CHK'D
12	13/12/2024	LANDSCAPING PLAN AND POSITION OF CONSTRUCTION COMPOUND AMENDED	WL	ED
11	20/11/2024	LANDSCAPING PLAN AMENDED	WL	JH
10	18/11/2024	OPTION AREA, LANDSCAPING AND FENCING DETAILS AMENDED. DRAINAGE STRATEGY, POSITION OF CCTV AND LIGHTING COLUMNS, AND TEMPORARY ALTERNATIVE ACCESS ROAD AMENDED	WL	JH
9	28/08/2024	INDICATIVE BUND ADDED	WL	JH
8	07/08/2024	CCTV/LIGHTING COLUMNS AND GATES ADDED.	JH	JH
7	01/08/2024	POSITION OF ACCESS ROAD AND INDICATIVE ALTERNATIVE ACCESS AMENDED	WL	JH
6	26/07/2024	LANDSCAPING ADDED TO SOUTH OF SITE, LAYOUT AMENDED TO SUIT, PASSING PLACES ADDED TO ALTERNATIVE ACCESS. POSITION OF TEMPORARY CONSTRUCTION COMPOUND AMENDED	WL	JH
5	19/07/2024	LAYOUT AMENDED FOR TO COMPOUND AND ADDITIONAL BUILDINGS REQUIRED. POSITION OF ATTENUATION POND AMENDED	WL	JH
4	04/07/2024	PASSING PLACES ADDED. SITE LOCATION AMENDED TO ALLOW OFFSET FROM EASTERN WALL	WL	JH
3	28/06/2024	SITE AMENDED TO ACCOUNT FOR EXTRA REQUIRED STRINGS	WL	JH
2	20/06/2024	LAYOUT ADJUSTED TO ACCOUNT FOR ADDITIONAL REQUIRED STRINGS	WL	ED
1	15/05/2024	BESS LAYOUT ADJUSTED, ADDITIONAL CONSTRUCTION COMPOUND AREA ADDED, ATTENUATION POND SIZE INCRESED	EW	ED
0	08/05/2024	DETAILED SITE PLAN - ORIGINAL	EW	JH

Field
Fora - Montacute Yards
186 Shoreditch High Street
London
E1 6HU

PROJECT
BEAULY 2

TITLE
Detailed Site Plan
100MW 200MWh
Envision Twin Skid

DISCIPLINE
PLANNING

DRAWING STATUS
FOR PLANNING

SCALE	DATE	DRAWN BY	CHECKED BY	APPROVED BY
1:2000 @A1	08.05.2024	WL	JH	ED

PROJECT NO.	DRAWING NO.	REV.
BTGBBEA02	005.1.2	12

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1:2000	50m				100m			150m		200m
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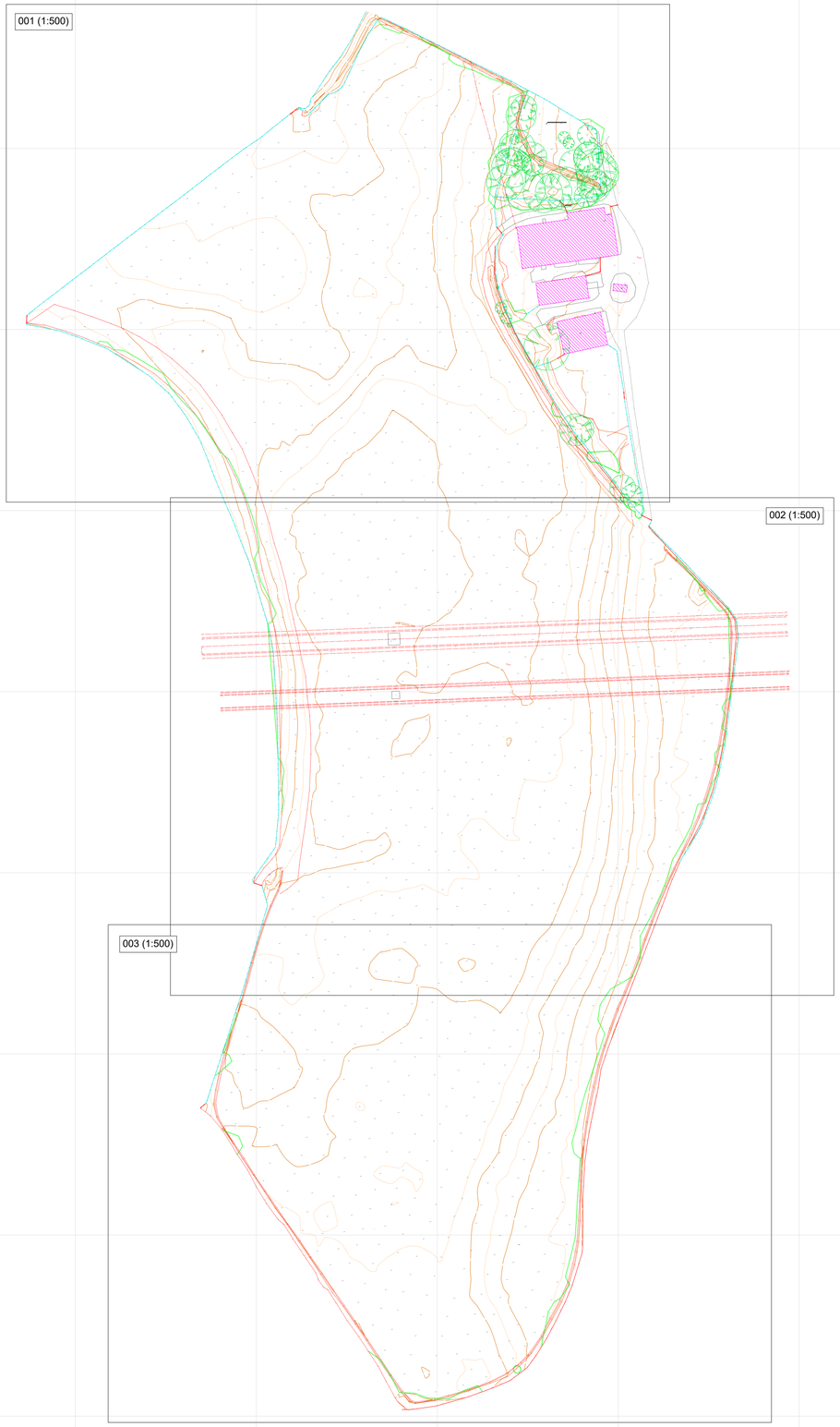

Castle Keep Surveys Drawing Legend

Topographical Linetypes:

- Road
- Drop Kerb
- Steps
- Building Line
- Barrier
- Channel
- Concrete
- Chain Fence
- Metal Fence
- Post & Wire Fence
- Wooden Fence
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- Wall
- Footpath

Underground Utility Linetypes:

- E — Electric
- GAS — Gas
- W — Water
- CATV — Cable TV
- CCTV — Closed Circuit TV
- BT — British Telecom
- EMPTY — Empty Ducting
- UNK — Unknown Metallic Utility
- GPR — GPR Anomaly Possible Utility
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- Surface Water Drainage Route
- Combined Service Drainage Route
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- Ayo Drain
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- O/H BT — BT Overhead
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- MULTI SERVICE TRENCH — Multi Service Trench
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- GAS AR — Assumed Gas Route
- GAS-TFR — Gas - Taken from Records
- Survey Extents

Symbols:

- TP — Telegraph Pole
- LP — Lamp Post
- EP — Electric Post
- TL — Traffic Light
- FL — Floodlight
- CTV — Cable TV IC
- SC — Stop Cock
- GV — Gas Valve
- BOL — Bollard
- 2.345 — Spot Level
- Post — Post
- GUL — Gully
- ER — Earth Rod
- GR — Gas Riser
- RWP — Rain Water Pipe
- RS — Road Sign
- SVP — Soil Vent Pipe
- CK31 E=436076.617 N=546728.511 Level=25.558 — Station Control Details
- RE — Rodding Eye
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- LB CL 100.000 — Electric Link Box
- MH2 CL 100.000 IL 97.500 — Circular Manhole
- MH3 CL 100.000 IL 97.500 — Triangular Manhole
- EOS — End of Sound
- Tree

Approximate National Grid North

CASTLE KEEP SURVEYS

Job Title: Beauly, Inverness, Scotland

Client Name: FIELD

Drawing Title: Topographical Survey

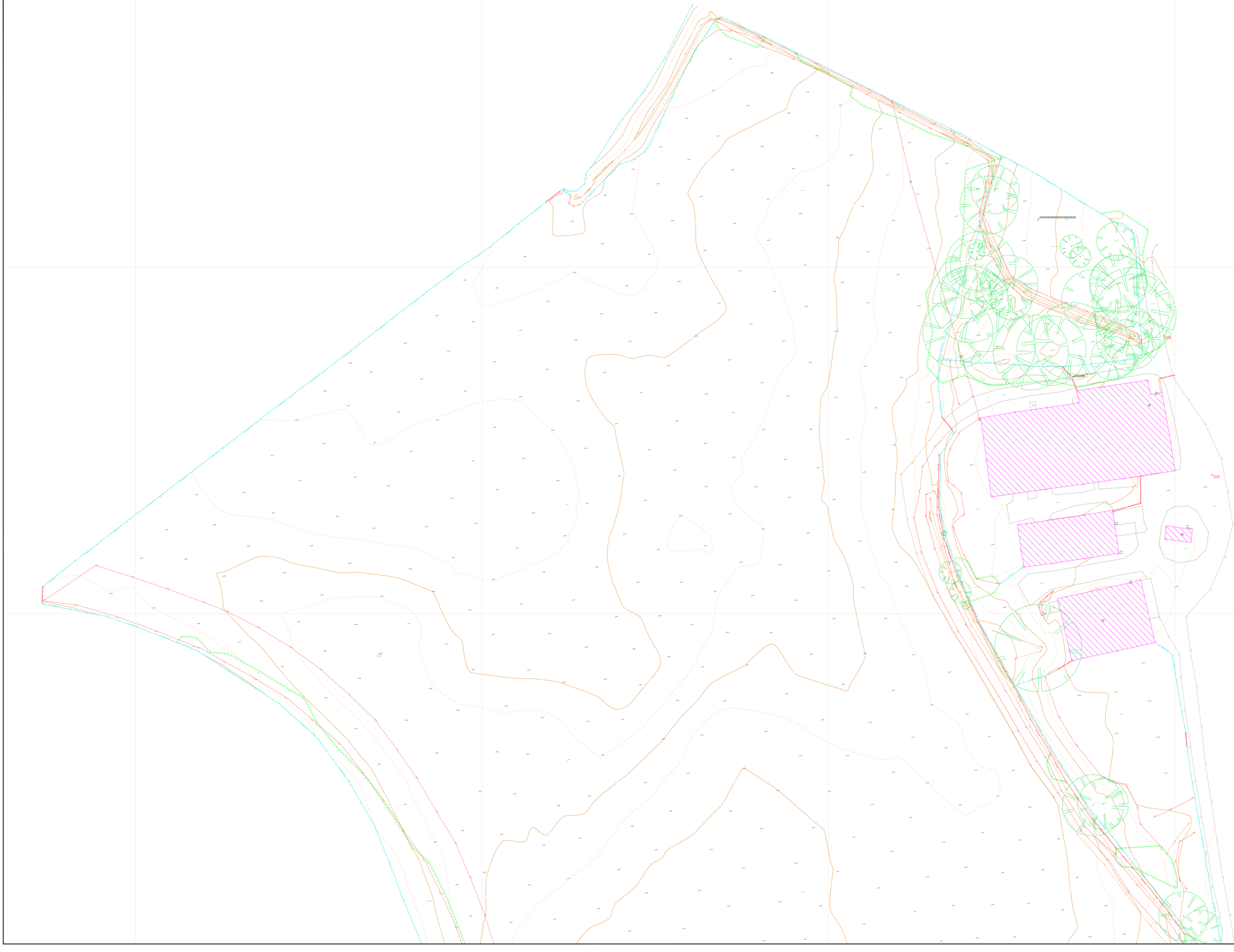
Scale	Surveyor
NTS @ A1	DA
Date	Approved
15/09/2022	MD

Castle Keep Surveys Ltd
The Keep
The Village
Castle Eden
County Durham
TS27 4SJ
T: 01429 836098
E: info@castlekeepsurveys.co.uk

Revision	Amendments	By	Checked

Project Number: OV

Drawing No/Revision



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- EOS — Tree
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Approximate National Grid North

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Job Title

Beauly
Inverness
Scotland

Client Name

FIELD

Drawing Title

Topographical Survey

Scale	Surveyor
1:500 @ A1	DA
Date	Approved
15/09/2022	MD

Castle Keep Surveys Ltd
The Keep
The Village
Castle Eden
County Durham
TS27 4SL
T: 01429 896038
E: info@castlekeepsurveys.co.uk

Revision	Amendments	By	Checked

Project Number: 001

Drawing No/Revision

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ER	Earth Rod	Cabinet 100.000	Cabinet
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RE	Rodding Eye		
LOR	Line of Reflection		End of Transit

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CASTLE KEEP SURVEYS

Job Title:

Beauly
Inverness
Scotland

Client Name:

FIELD

Drawing Title:

Topographical Survey

Scale: 1:500 @ A1	Surveyor: DA
Date: 15/09/2022	Approved: MD

Castle Keep Surveys Ltd
The Keep
The Village
Castle Eden
County Durham
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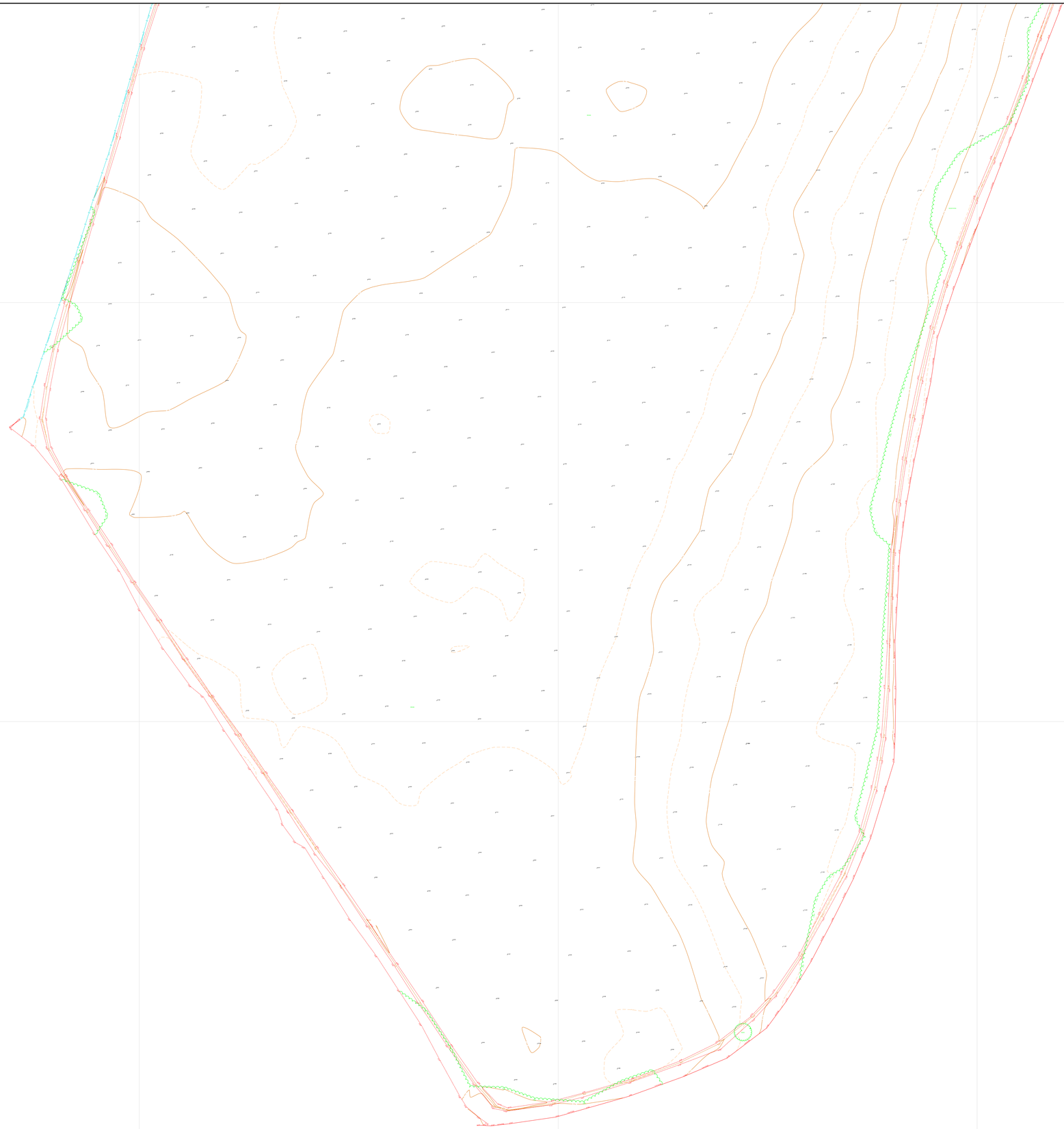
T: 01429 896098
E: info@castlekeepsurveys.co.uk

Revision	Amendments	By	Checked

Project Number: 002

Drawing No/Revision:



Castle Keep Surveys Drawing Legend

Topographical Linetypes:

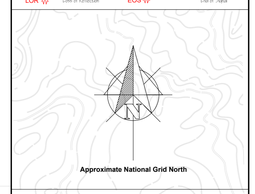
- Road
- Drop Kerb
- Drop Kerb
- Steps
- Building Line
- Barrier
- Channel
- Concrete
- Chain Fence
- Metal Fence
- Post & Wire Fence
- Wooden Fence
- Top of Bank
- Bottom of Bank
- Tree Canopy Line
- Verge Line
- Wall
- Footpath

Underground Utility Linetypes:

- E — Electric
- GAS — Gas
- W — Water
- CATV — Cable TV
- CCTV — Closed Circuit TV
- BT — British Telecom
- EMPTY — Empty Ducting
- UNK — Unknown Metallic Utility
- GPR — GPR Anomaly Possible Utility
- COM — Communications
- Foul Water Drainage Route
- Surface Water Drainage Route
- Combined Service Drainage Route
- Unknown Drainage Route
- Field Drain
- Ayo Drain
- E-TFR — Electric - Taken from Records
- E AR — Assumed Electric
- O/H E — Electric Overhead
- O/H BT — BT Overhead
- MSR — Multi Service Route
- MULTI SERVICE TRENCH — Multi Service Trench
- W-TFR — Water - Taken from Records
- W AR — Assumed Water Route
- GAS AR — Assumed Gas Route
- GAS-TFR — Gas - Taken from Records
- Survey Extents

Symbols:

TP	Telegraph Pole		Gate
LP	Lamp Post	MH1 CL 100.000 IL 98.000	Manhole
EP	Electric Post	IC CL 100.000	Inspection Chamber
TL	Traffic Light	CATV CL 100.000	Cable TV Cover
FL	Floodlight	BT CL 100.000	BT Cover
CTV	Cable TV IC	RG 100.000	Road Gully
SC	Stop Cock	SV CL 100.000	Stop Valve
GV	Gas Valve	WM CL 100.000	Water Meter
BOL	Bollard	AV CL 100.000	Air Valve
2.345	Spot Level	WO CL 100.000	Wash Out
Post	Post	FH CL 100.000	Fire Hydrant
GUL	Gully	GV CL 100.000	Gas Valve
ER	Earth Rod	Cabinet 100.000	Cabinet
GR	Gas Riser	LB CL 100.000	Electric Link Pin
RWP	Rain Water Pipe	MH2 CL 100.000 IL 97.500	Circular Manhole
RS	Road Sign	MH3 CL 100.000 IL 97.500	Triangular Manhole
SVP	Soil Vent Pipe		
CK31 E=436076.617 N=546728.511 Level=25.558	Station Control Details		
RE	Rodding Eye		Tree
LOR	Line of Reflection	EOS	End of Topo



CASTLE KEEP SURVEYS

Job Title:

Beauly
Inverness
Scotland

Client Name:

FIELD

Drawing Title:

Topographical Survey

Scale:	1:500 @ A1	Surveyor:	DA
Date:	15/09/2022	Approved:	MD

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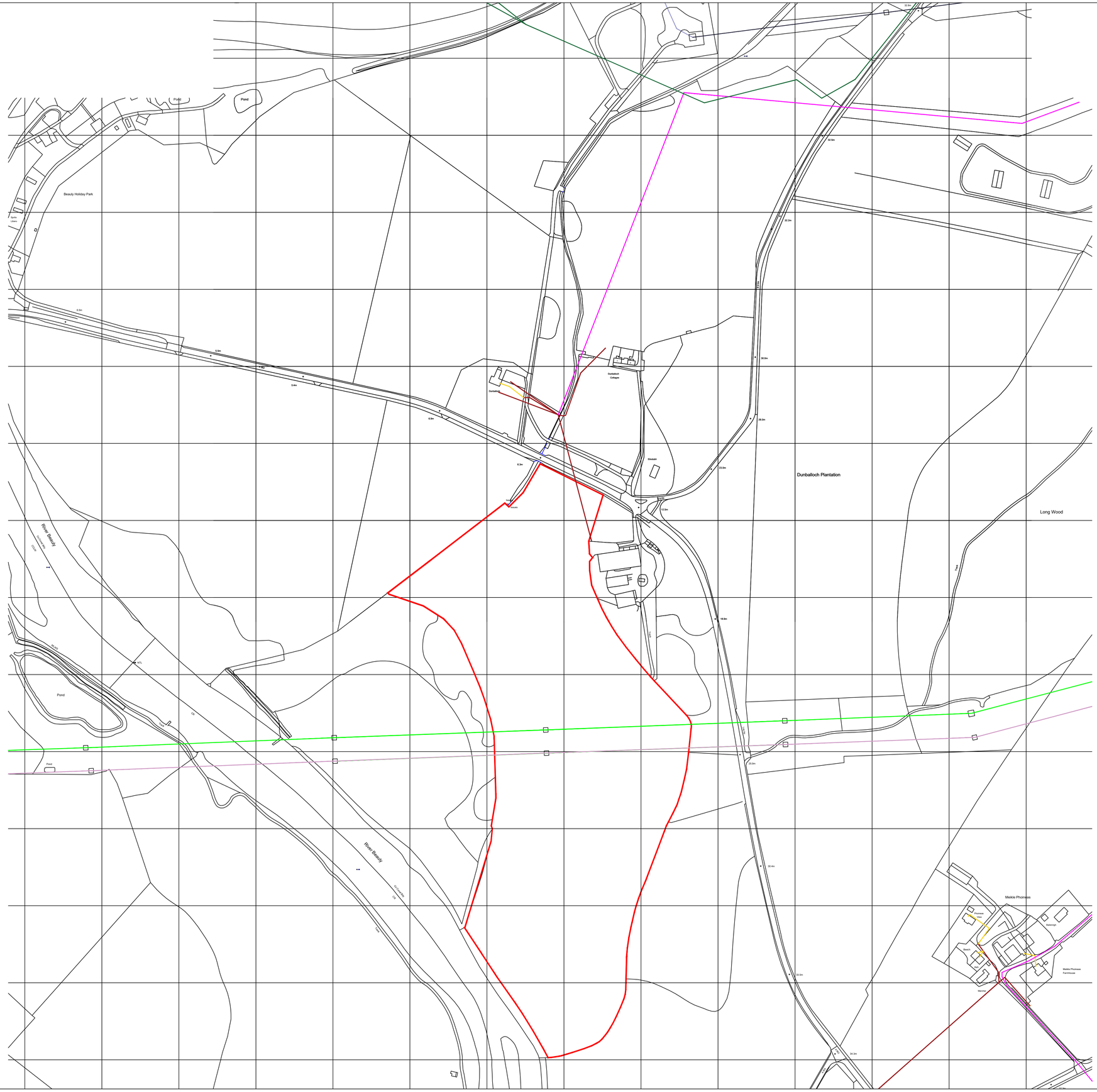
Revision	Amendments	By	Checked

Project Number: 003

Drawing No/Revision:

Appendix B Utilities

Field Combined utilities plan



DRAWING NOTES

DRAWING NOTES:

1. ALL DIMENSIONS ARE SHOWN IN MM.
2. SCALE FOR PLANING PURPOSES ONLY.

SERVICES:

- Project Boundary
- LV Mains
- Service Cable
- 11kV Cable
- 33kV Cable
- 132kV Cable
- Overhead Line EHV - 275kV
- Cable Duct

REV	DATE	DESCRIPTION	BY	CHK'D
0	26/08/2022	COMBINED UTILITIES PLAN - FOR PLANNING	WL	JB

FIELD
Field, Second Home, 68 Hanbury Street, Spitalfields, London, E1 5JL

PROJECT
BEAULY 2
NH524445

TITLE
COMBINED UTILITIES

DISCIPLINE
PLANNING

DRAWING STATUS
FOR PLANNING

SCALE	DATE	DRAWN BY	CHECKED BY	APPROVED BY
1:2500 @ A1	26/08/2022	WL	JB	

PROJECT NO.	DRAWING NO.	REV.
FIELD/BEA	FIELD/BEA/PL/002	0

Appendix C Geotechnical Report

GDG Beauly BESS Geoenvironmental and Geotechnical Desk Study

HGS Dunballoch Farm Site Investigations

GDG
GAVIN & DOHERTY
GEOSOLUTIONS

Beauly BESS Geoenvironmental and Geotechnical Desk Study

FIELD

Client	**Field Beauly Ltd.**
Document Ref.	24092-R-001-01
Project Title	Beauly BESS
Date	04/12/2024

Project Title:	Beauly BESS
Report Title:	Geoenvironmental and Geotechnical Desk Study
Document Reference:	24092-R-001-01

Client:	Field Beauly Ltd.
Confidentiality	Non Confidential

REVISION HISTORY

Rev	Date	Reason for Issue	Originator	Reviewer	Approver
[00]	21/06/2024	Draft	E Cline	R Harrison	J McGrath
01	04/12/2024	Post Review	E Cline	A Shepherd	A Shepherd

DISCLAIMER

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1 INTRODUCTION

1.1 GENERAL

Gavin and Doherty Geosolutions Ltd. (GDG) was commissioned by Field Beauly Ltd. to complete a Desk Study to establish the geoenvironmental and geotechnical ground conditions at Beauly (the Site) located south of Beauly, Highland, Scotland.

The Site location and Site planning boundary are outlined in Figure 1-1.

Figure 1-1: Site Location Plan

The Desk Study review is intended to inform the proposed development of a 100 MW battery energy storage system (BESS) 1.5 km to the east of the existing Beauly Substation. The proposed development comprises a BESS of up to 100 MW with associated infrastructure, earthworks, drainage, accesses and ancillary works (including landscaping and biodiversity enhancement). The proposed development is illustrated in Figure 1-2 below.

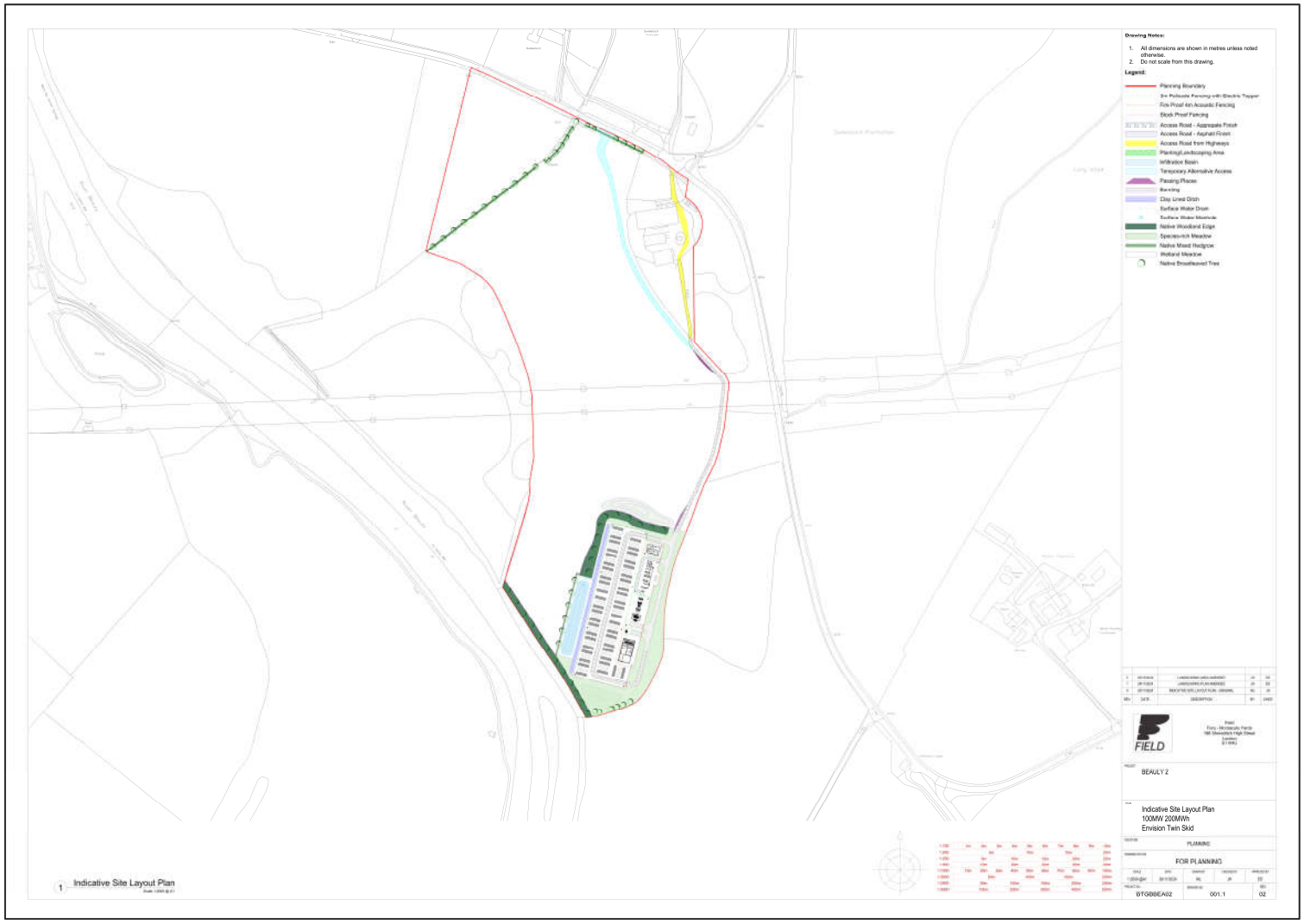

Figure 1-2: Beauly BESS 100 MW Proposed Development (Field 2024)

1.2 REPORT STRUCTURE

Desk-based information contained within this report has been compiled through environmental data review and mapping research (historical, geological and hydrogeological). The preparation of this report included the following specific tasks:

- Review the development history of the Site from available historical maps to identify previous uses which may have resulted in contamination issues.
- Review the local geology from the available geological plans and memoirs, together with surface watercourse and hydrogeology classifications.
- Undertake a qualitative risk assessment of potential contamination issues at the Site. The qualitative risk assessment includes the development of an Initial Conceptual Model for the Site and the identification of any Significant Pollutant Linkages.
- Assess potential geotechnical constraints.
- Determine whether additional investigation is necessary to provide further information on the contamination and geotechnical status of the Site.

2 DESK STUDY

2.1 SITE DESCRIPTION

The Site is situated approximately 1.5km south of the village of Beauly in the Highlands, Scotland, with the planning boundary encompassing an area of 18.51 ha.

The National Grid Reference for the approximate centre of the Site is 252417, 844410 and the Site location and layout are shown in Figure 1-1.

The Site is predominantly used as agricultural land, gently sloping to the west, with a roughly rectangular shaped boundary. There are three farm buildings present in the northern part of the Site, accessible via an access track from the A862 road to the north. The proposed BESS facility is planned to be constructed in the southern part of the site.

2.2 SITE WALKOVER

A Site walkover was undertaken by a GDG Engineer on 15th May 2024. A selection of representative photographs and associated comments are included in Appendix A. The following section includes observations collected from the walkover.

The site is a large field that at the time of the site visit was being used for sheep grazing. The field slopes gently to the west towards the River Beauly. Mature trees are found along the banks of the river. The Site is bounded by the following:

- The western boundary approximately follows a fence line to the north and the River Beauly to the south. The River Beauly is approximately 3m below the level of the field at the bottom of a steep vegetated slope. The boundary further north is a low-lying wet area, a former river bend.
- The northern boundary doesn't follow any fence or other visible boundary and is within the field. Beyond is the main road and farmland.
- The eastern boundary is either a fence line or a substantial stone wall with mature trees beyond. The stone wall appears to be old and likely marks an estate boundary.

The Site is crossed in the middle by two pylon lines which run in an east-west direction, they terminate in the Beauly Substation.

2.3 SITE HISTORY

The history of the Site has been reviewed using historical 1:10,000 and 1:2,500 scale Ordnance Survey (OS) maps dating from 1872 to the present day (included in Appendix B).

The earliest available historical map, dated 1872, shows the site as open farmland, likely for pasture. The southwestern boundary is delineated, as it is in the present day, by the River Beauly. The western boundary is adjacent to open marshland, the northern boundary is marked by the current road, and the eastern boundary is recorded as woodland/forestry plantation.

Three buildings in the northeastern corner of the Site are recorded as Offices in the 1872 map, these buildings remain to the present day, though the later mapping does not detail their use. During the Site walkover, the buildings were observed to be derelict farm structures. By 1903, a well is

documented within the site in the northeastern corner, south of the existing farm buildings. This well is not recorded after the 1969-1973 map, with its location moving outside the Site boundary, though it is unclear if this represents a new well or an inaccurate recording.

The 1872 map records seven wells within a 1km radius of the Site boundary. The Far North railway line is mapped 800m north of the site, where it remains today. The map also notes, that 350m west of the Site is the highest point at which the ordinary spring tide flows within the River Beauly. This is still recorded in the same location on the current OS map. Consequently, surface water and groundwater in the vicinity of the site may be tidally influenced.

Throughout the late 1800s and mid-1900s, quarrying activities were documented in the mapping. The 1872 map notes a sand pit 216m southwest of the Site. By 1903, a sand pit is recorded 480m to the north, and a gravel pit 1km to the northwest. Later the 1969-1973 map shows the gravel pit has expanded and is now recorded as Balblair Sand and Gravel Pit, it is still present today and is known as Beauly Quarry, which continues to supply aggregates and concrete. Another quarry, named Balcharaggan Quarry, is recorded on the 1903 map 1km southeast of the site. It remains present on the maps until 2010, after which it is no longer recorded.

The 1966-1973 map also notes an unspecified tank 155m north of the site, likely associated with Dunballoch farm buildings.

By 1955, the first pylons across the site were recorded, and some trees previously mapped to the south of the buildings on Site appear to have been cleared.

Since the 1955 map, there have been no further significant changes or developments within the Site or the surrounding area, other than some alteration to the power lines crossing the site.

2.4 GROUND INVESTIGATION DATA

This section provides a summary of available historical ground investigation logs relevant to the Site. There is no known ground investigation data available within the Site boundary, a review of the British Geological Society (BGS), found two boreholes undertaken in 1969 by Dredging Investigation Ltd, 156m and 183m south of the Site boundary. The boreholes were part of a wider ground investigation for the construction of the A9 road, the two locations are located on either side of the River Beauly riverbanks (Location Plan is included in the Groundsure Report, Appendix B). Table 2-1 summarises the available data.

Table 2-1: Summary of Available Ground Investigation Logs

BGS Ref.	Grid Reference	Strata Summary	Water Strike Summary
NH54SW3	252380, 843860	• Topsoil (0.0-0.45m) • Sand and Gravel (0.45-3.66) • Boulders (3.66-4.11m) • Clay and boulders (4.11-5.64m) • Gravel and Cobbles 5.64-6.10m) • Sand (6.10-6.55m) • Clay (6.55-7.01m) • Gravel, Cobbles and Boulders (7.01-10.36m)	7.30m “Groundwater was first encountered at a depth of 24 ft bgl under sub artesian head, probably from the river)”

BGS Ref.	Grid Reference	Strata Summary	Water Strike Summary
NH54SW4	252260, 843890	• Topsoil (0.0-0.30m) • Sand and Gravel (0.30-1.06m) • Cobbles and Boulders (1.06-2.44m) • Gravel (2.44-3.96m) • Clay (3.96-10.67m) • Sand (10.67-11.28m) • Silt and Gravel (11.28-11.89m) • Gravel, Cobbles and Boulders (11.89-13.72m)	3.30m "Groundwater first encountered at 11ft bgl as a strong flow probably from the river. On completion of the borehole, groundwater stood at 5ft bgl)"

2.5 ENVIRONMENTAL DESIGNATIONS

A review of the Scottish Natural Heritage data found 26 Designated Ancient Woodlands within 2km of the Site boundary, notably one Long-Established (of plantation origin) adjacent to the southern/south-eastern boundaries of the Site.

2.6 PRIVATE WATER SUPPLIES

A review of the Highland Council Open Map data and a freedom of information request regarding Private Water Supplies (PWS) identified two private water supplies within 600m of the Site boundary. The PWS are located 50m north of the Site boundary and 520m to the southeast of the Site, Table 2-2 summarises the details available records from the Highland Council.

Table 2-2: Private Water Supplies Summary

Name	Address	Distance and Direction from Site	Grid Reference	Premise Type	Premise Usage	Population
PWS Plot 2	Beauly, IV4 7AY	50m N	252517, 844763	Groundwater - Spring	PWS Commercial < 100m2	5
PWS Dunballoch	Meikle Phoineas, Beauly, Inverness-shire, IV4 7AY	520m SE	253023, 844117	Groundwater - Borehole	PWS Domestic < 50 Persons	0

2.7 ANTICIPATED GROUND CONDITIONS

2.7.1 ARTIFICIAL GEOLOGY

Available geological mapping shows no records or details of made, infilled or disturbed ground on the Site or within 500m of the Site. When considering the Site history and the observations gathered from the Site walkover, reworked or made ground may be encountered along the access track, around the farm buildings and the track and yard.

2.7.2 SUPERFICIAL GEOLOGY

The geological mapping records the Site to be underlain by Raised Marine Beach deposits of Holocene age comprising a mix of sands and gravels, in places referred to as Coastal Fluviatile Alluvium. The BGS records the deposits to be up to 10m thick, composed of gravels typically cobble grade, well sorted,

with the sand medium-grained and shelly. The historical boreholes, discussed in Section 2.4, encountered granular superficial deposits, which are likely to be the Raised Marine Beach deposits.

The BGS also notes that the eastern boundary of the Site is delineated by a north-south linear landform, which marks a former coastline.

2.7.3 SOLID GEOLOGY

Geological mapping shows the solid geology beneath the Site to solely comprise the Braemore Mudstone Formation. The BGS describes the formation as early Devonian Mudstone with subsidiary sandstone and siltstone, and trace conglomerate and limestone.

There do not appear to be any observed or inferred linear features within the bedrock.

2.7.4 GEOLOGICAL HAZARDS

The Groundsure report includes information from the BGS on potential hazards associated with ground conditions, which have been summarised for the Site, as shown in the following Table 2-3. This indicates generally very low or low risks. Full details are provided in the appended Groundsure report (Appendix B).

Table 2-3: Geological Hazard

Hazard	Highest Risk Rating	Details	Location
Shrink Swell Clays	Very Low	Ground conditions predominantly low plasticity.	Majority of the Site. Negligible in the southwest of the Site, ground conditions are predominantly non-plastic.
Natural Ground Subsidence – Running Sands	Very Low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless the water table rises rapidly.	Entire Site.
Natural Ground Subsidence – Compressible Deposits	Negligible	Compressible strata are not thought to occur.	Entire Site.
Natural Ground Subsidence – Collapsible Deposits	Very Low	Deposits with the potential to collapse when loaded and saturated are unlikely to be present.	Along the eastern boundary of the Site. The majority of the Site is recorded to be Negligible, deposits with the potential to collapse when loaded are believed not to be present.
Natural Ground Subsidence – Landslide	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.	Along the eastern boundary of the Site. The majority of the Sire is recorded to be Very Low; slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered
Natural Ground Subsidence – Ground dissolution of soluble rocks	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.	Entire Site