336-004-RP01

Drainage Impact Assessment

Proposed BESS – Rigifa, Thurso

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Contents

1 Introduction

Haydn Evans Consulting Ltd (HEC) has been commissioned by Field (hereafter referred to as the Client) to carry out a Drainage Impact Assessment (DIA) to support a planning application for the construction and operation of a 200 megawatt (MW) Battery Energy Storage System (BESS) with associated infrastructure, access and ancillary works on land at Rigifa, Thurso.

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 DIA should be read in conjunction with the Flood Risk Assessment (FRA) which has been prepared for this site; HEC document reference 336-004-RP1 dated 14 August 2024.

1.2 Site Proposal

The Proposed Development would have a total development footprint of approximately 5.62 hectares (ha) across the 37.87 ha site.

The Proposed Development principally comprises a battery energy storage system (BESS) with a capacity of up to 200 megawatts (MW) which will charge and discharge electricity from the adjacent planned and consented Gills Bay substation. It includes:

- Battery storage units arranged into rows;
- Medium-voltage (MV) skids and ancillary low-voltage (LV) equipment;
- High-voltage (HV) grid transformers;
- Air insulated switchgear;
- A substation building comprising welfare facilities, a switch room and control room;
- An interface substation and underground 132 kV grid connection cable; and
- Site-wide supporting infrastructure including cabling, access tracks, fencing, attenuation basins, and landscaping measures.

Whilst the exact specifications are subject to detailed design, the principal components described form the basis of the planning application to allow environmental assessments and mitigation to be appropriately scoped. See the proposed layout drawing in Appendix A.

2 Location & Existing Conditions

2.1 Site Location

The site is located to the south of Mey, on approximate Ordnance Survey (OS) grid reference 58.620726, -3.215638 (see red line boundary on Figure 1).

Figure 1: Site location map

Access to the site is available in two locations off the A836 to the north-east and north-west of the site, The site is surrounded by greenfield land, with the exception of the farm plot located to the south of the north-eastern access track.

2.2 Existing Topography

OS mapping shows the site to generally fall from south-east to north-west. A topographic survey has been produced for the majority of the site, including the access tracks and the main BESS compound area where ground levels in the south-east are circa 74.09 metres Above Ordnance Datum (mAOD), falling to circa 55.03 mAOD in the northeast. The topographic survey does not cover the Interface Substation.

2.3 Existing Sewer Assets

Scottish Water (SW) sewer records for the site have been obtained (see Appendix B). The records show no foul or surface water sewers in the vicinity of the site. The nearest sewer system is located along the A836 to the north of the site.

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 Spital Flagstone Formation and Mey Flagstone Formation, both of which are a combination of siltstone, mudstone, and sandstone. The superficial deposits for the site are shown to comprise Till, Devensian (Diamicton), Hummocky (moundy) Glacial Deposits, and Peat.

The Phase 2 Ground Investigation Report undertaken by Curtins, predominantly for the main BESS compound area (ref: 085449-CUR-00-XX-RP-GE-00002 dated 11 July 2024), encountered the following on-site ground conditions:

Stratum	Depth to top of strata		Thickness (m)		General Description
	m BGL	m AOD	Min	Max	
Topsoil	GL	62.63 – 73.16	0.20	0.40	Dark brown organic slightly sandy CLAY. Frequent organic matter (peaty in places). Dark brown clayey sandy peaty TOPSOIL with frequent vegetation.
Devensian Till - Diamicton	0.2	62.33 – 72.91	0.30 (TP06)	1.80 (BH05)	Soft to stiff brown and grey mottled orange slightly silty slightly sandy slightly gravelly CLAY.
Spittal Flagstone Formation	0.70	61.03 – 72.06	0.05*	2.00*	Weak dark grey FLAGSTONE recovered as an angular to fine gravel.

Notes - *Total thickness not proven (Base of unit not encountered).

Figure 2 – On-site ground conditions

Online mapping shows the site to be in an area with a 'low' groundwater vulnerability, this is also confirmed in the Phase 2 GI report.

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. Policy 22 states that development proposals should:

- Not increase the risk of surface water flooding to others, or itself be at risk;
- Manage all rain and surface water through sustainable urban drainage systems (SUDS), which should form part of and integrate with proposed and existing blue-green infrastructure. All proposals should presume no surface water connection to the combined sewer; and
- Seek to minimise the area of impermeable surface.

3.2 Highland-wide Local Development Plan (HwLDP, Adopted 2012)

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 66 is relevant to this assessment and reads as follows:

Policy 66 Surface Water Drainage

All proposed development must be drained by Sustainable Drainage Systems (SuDS) designed in accordance with The SuDS Manual (CIRIA C697) and, where appropriate, the Sewers for Scotland Manual 2nd Edition. Planning applications should be submitted with information in accordance with Planning Advice Note 69: Planning and Building Standards Advice on Flooding paragraphs 23 and 24. Each drainage scheme design must be accompanied by particulars of proposals for ensuring long-term maintenance of the scheme.

4 Surface Water Drainage

4.1 Proposed Surface Water Drainage Strategy

The surface water drainage strategy has been designed based on the requirements of CIRIA 753 (C753) dated March 2015 and the Water Assessment and Drainage Assessment Guide produced by the Sustainable Urban Drainage Scottish Working Party (SUDSWP).

The surface water drainage strategy is focussed on the proposed development areas only, namely the Interface Substation, Substation Compound and the BESS Compound. Surface water drainage information for the access roads is provided on HEC drawings 336-004-D220, D221, D320 and D321.

Surface water drainage for the remainder of the site area within the red line boundary will drain as existing, towards the existing on-site ditch network.

4.1.1 SuDS Hierarchy

Surface water drainage should be managed in a way that replicates the natural drainage processes for the site as closely as possible. The proposals should follow the hierarchy outlined in C753 and should be disposed of to a receptor in the order of preference described below:

1. Into the ground;
2. To a surface water body e.g. watercourse;
3. To a surface water, highway drain, or another drainage system;
4. To a combined sewer.

4.1.2 SuDS Selection

Into the Ground

The Phase 2 Ground Investigation states that: '*The preliminary in-situ soakaway tests carried out as part of the site investigation works indicated poor infiltration characteristics of the underlying glacial deposits being unsuitable for soakaway infiltration.*'

Infiltration drainage is therefore considered not feasible at this Site and is not discussed further in this report.

To a surface water body

It is proposed to discharge surface water run-off from the compound areas to an existing ditch within the red line boundary. The ditch is shown (on the topographical survey and OS mapping) to flow towards the Burn of Horsegrow located to the west of the Site. The proposed strategy therefore mimics the existing drainage regime for the Site.

4.2 Greenfield run-off rates

The greenfield run-off discharge rates have been calculated using the HR Wallingford IH124 method and are based on the area of the proposed compounds. The greenfield rates are summarised in Table 1 below (see Greenfield Calculations in Appendix B).

Rainfall event	Substation and BESS Compound – 5.391 ha (l/s)	Interface Substation Compound – 0.09ha (l/s)
1:1 year	29.11	0.54
Qbar	34.24	0.64
1:30 year	66.78	1.40
1:100 year	84.92	1.58
1:200 year	97.25	1.80

Table 1: Greenfield run-off calculations

NB: The greenfield rates for the Interface Substation are based on an area of 0.1 ha due to this being the software's minimum allowable area.

4.3 Surface water drainage strategy

The surface water generated by the compound is intercepted by filter drains positioned periodically across the contributing area. The filter drains collect and direct the surface water through a network of pipes to the attenuation and the outfall.

Both drainage systems will discharge surface water at a restricted rate to the existing ditch located approximately 245 m to the north of the BESS and substation compounds and 125 m west of the interface substation. The ditch is shown on the topographical survey and OS mapping to connect to the Burn of Horsegrow. The surface water drainage drawings and supporting calculations are provided in Appendix B.

Discharge rate

The discharge of surface water run-off from the BESS/substation compounds will be restricted to the Qbar greenfield rate (34.24 l/s) in line with Highland Council guidance. Discharge from the attenuation basin is restricted by a flow control device.

The discharge of surface water run-off from the interface substation compound will require pumping due to levels on site being lower than the outfall location. It is not possible to discharge surface water via gravity to the ditch located to the west due to additional services (cables) and land rights over the area. It is therefore proposed to pump surface water run-off to the same outfall location as the BESS/substation compound, at a rate of 2 l/s (minimum pump rate).

Attenuation

Attenuation has been sized using FEH data and Causeway Flow software to accommodate the temporary run-off for rainfall events up to and including the 1:200-year event.

The volume of storage provided in the attenuation basin provided for the BESS/substation compound for the 200-year event is 2864 m^3 with a maximum water level of 58.30 mAOD. The proposed bank level of the basin is 58.75 mAOD and therefore sufficient freeboard is provided for the 200-year event. The basin has been designed with 1:3 side slopes.

The volume of storage provided in the swale provided for the interface substation compound for the 200-year event is 43m^3.

4.4 Pollution Mitigation

The above proposal ensures that surface water is managed 'at source'. All surface water from the Proposed Development area will pass through a filter drain and the attenuation basin as pollution mitigation. This type of development has 'Low' pollution hazard level, as shown in

table 26.2 of C753. The relevant land use is tabled below, with the SuDS pollution indices tabled (as per table 26.3 of C753).

Pollution Hazard indices for different land use classifications				
Land Use	**Pollution Hazard Level**	**Total suspended solids pollution index**	**Metals**	**Hydrocarbons (HC)**
Individual property driveways, residential car parks, low traffic roads (e.g. cul de sacs, home zones and general access roads) and non-residential car parking with infrequent change (e.g. schools, offices) i.e., 300 traffic movements/day	Low	0.5	0.4	0.4
Indicative SuDS mitigation indices for discharges to surface waters				
Filter Drain		0.4	0.4	0.4
Detention Basin (secondary indices halved)		0.5 (0.25)	0.5 (0.25)	0.6 (0.3)
Total		**0.65**	**0.65**	**0.7**

Table 2: SuDS Pollution Assessment

The mitigation techniques provided exceed the required level of treatment to surface water run-off.

A penstock valve is provided to prevent any contaminated water from entering the wider environment.

4.5 Management and Maintenance

The surface water drainage system should be maintained to ensure the system operates at its maximum capacity for the 30-year lifetime of development. A management and maintenance plan are provided in Appendix B.

5 Summary and Conclusion

5.1 Summary

HEC has been commissioned by the Client to carry out a Drainage Impact Assessment to support a planning application for the construction and operation of a 200 MW Battery Energy Storage System (BESS) with associated infrastructure, access and ancillary works on land at Rigifa, Thurso.

Infiltration drainage is not feasible at the Site, as confirmed by ground investigation. It is therefore proposed to discharge surface water to the existing on-site ditch which flows to the Burn of Horsegrow, mimicking the existing drainage regime for the Site.

Attenuation has been provided for the 1 in 200-year event with a restricted discharge matching the Qbar greenfield run-off rate, where feasible.

The use of filter drains, and an attenuation basin/swale provide the appropriate mitigation for the pollutants likely for this type of development.

A penstock valve is provided to prevent any contaminated water from entering the wider environment.

The surface water drainage system should be maintained to ensure the system operates at its maximum capacity for the lifetime of development in line with the management and maintenance plan provided.

5.2 Conclusion

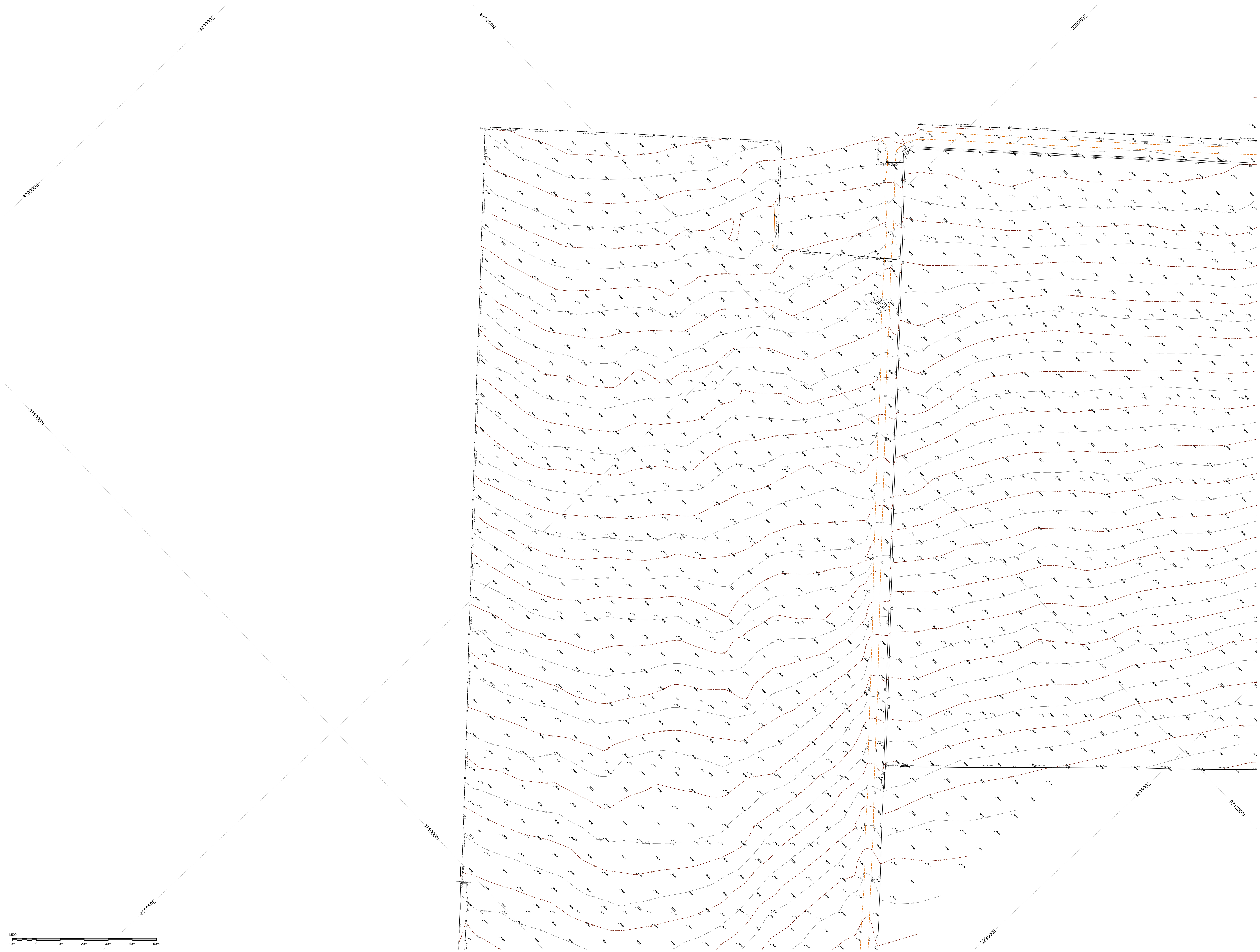
The drainage strategy complies with guidance; surface water generated by the Proposed Development can be attenuated on site in the relevant extreme event and discharged to a watercourse. The proposals for the site do not increase on or off-site flood risk and are therefore considered acceptable.

Appendix A - Existing & Proposed Site

Highland Surveyors Ltd drawing 23066_01-09 - Topographical Survey

Sewer records extracted from Utilities Search ref: BTGBRIG01 dated 10/04/2024

Field drawing BTGBRIG0 001.1 Rev 9 – Indicative Site Plan Layout

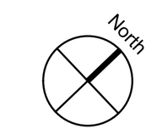


FIGURED DIMENSIONS ONLY TO BE USED

Notes

i) All survey levels are related to Ordnance Survey using GPS.

ii) Whilst every effort to locate all major service covers (ie.manhole positions) it should be noted that this may not be possible in all cases due to ground conditions or local obstructions.



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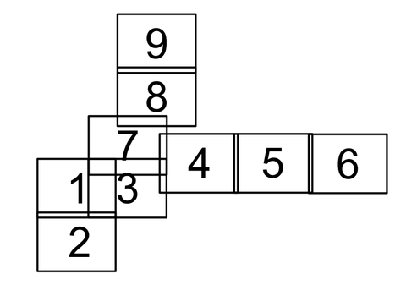

Sheet Layout

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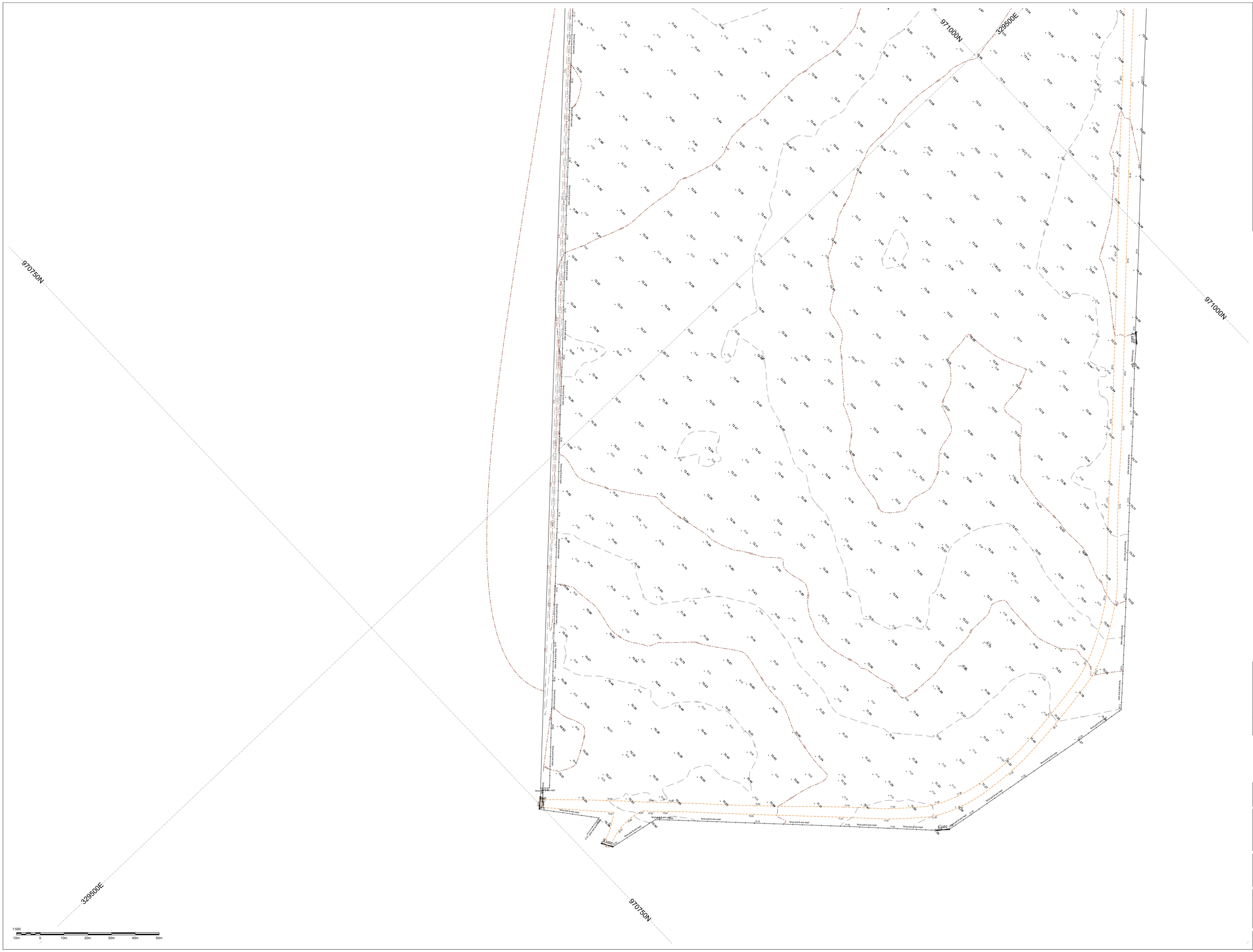

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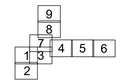

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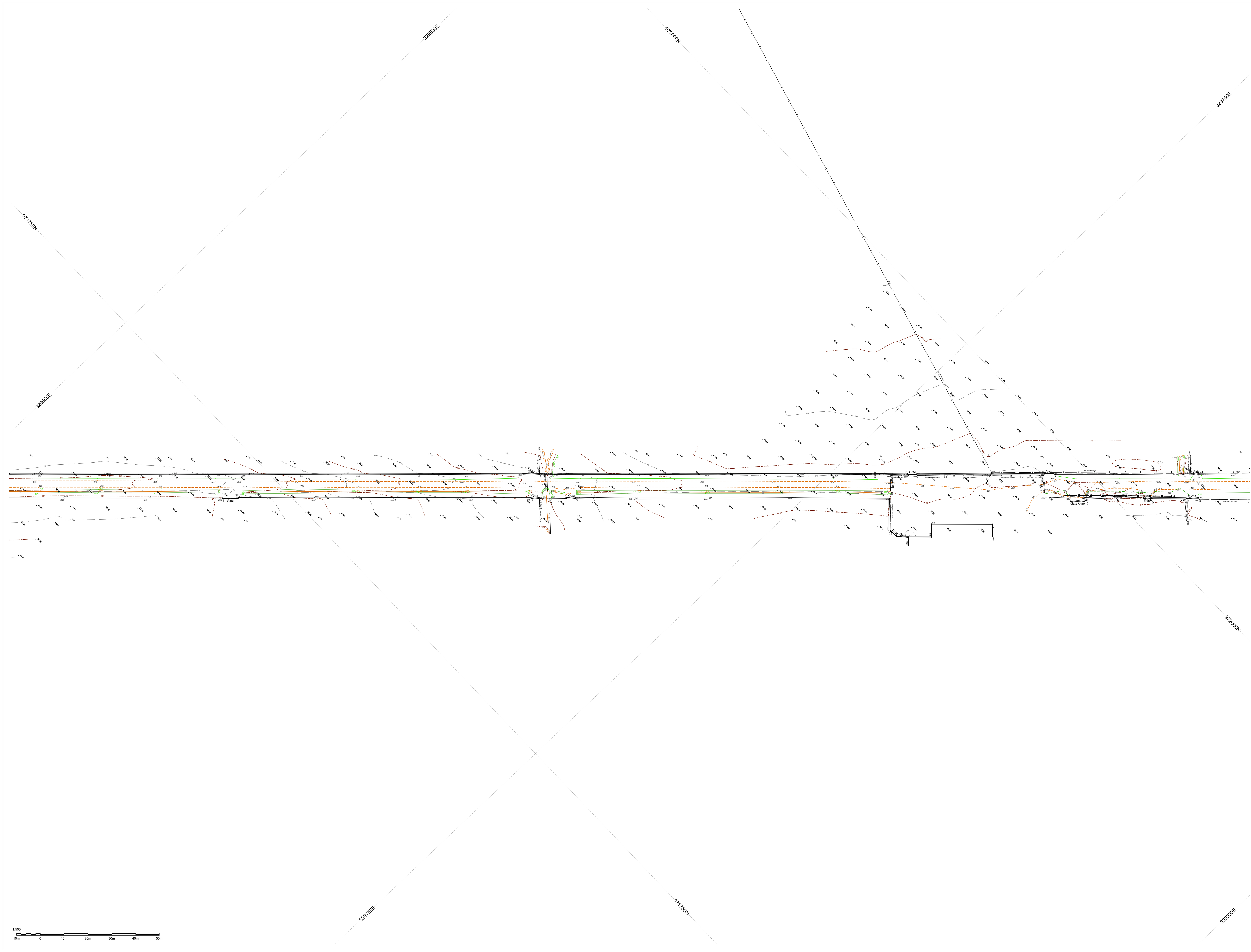

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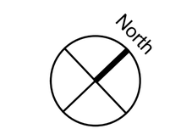

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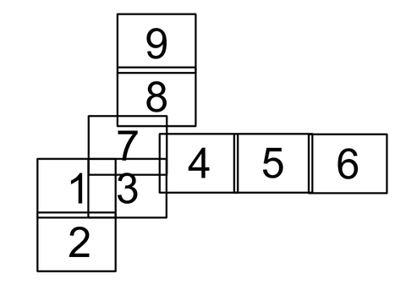

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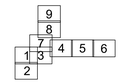

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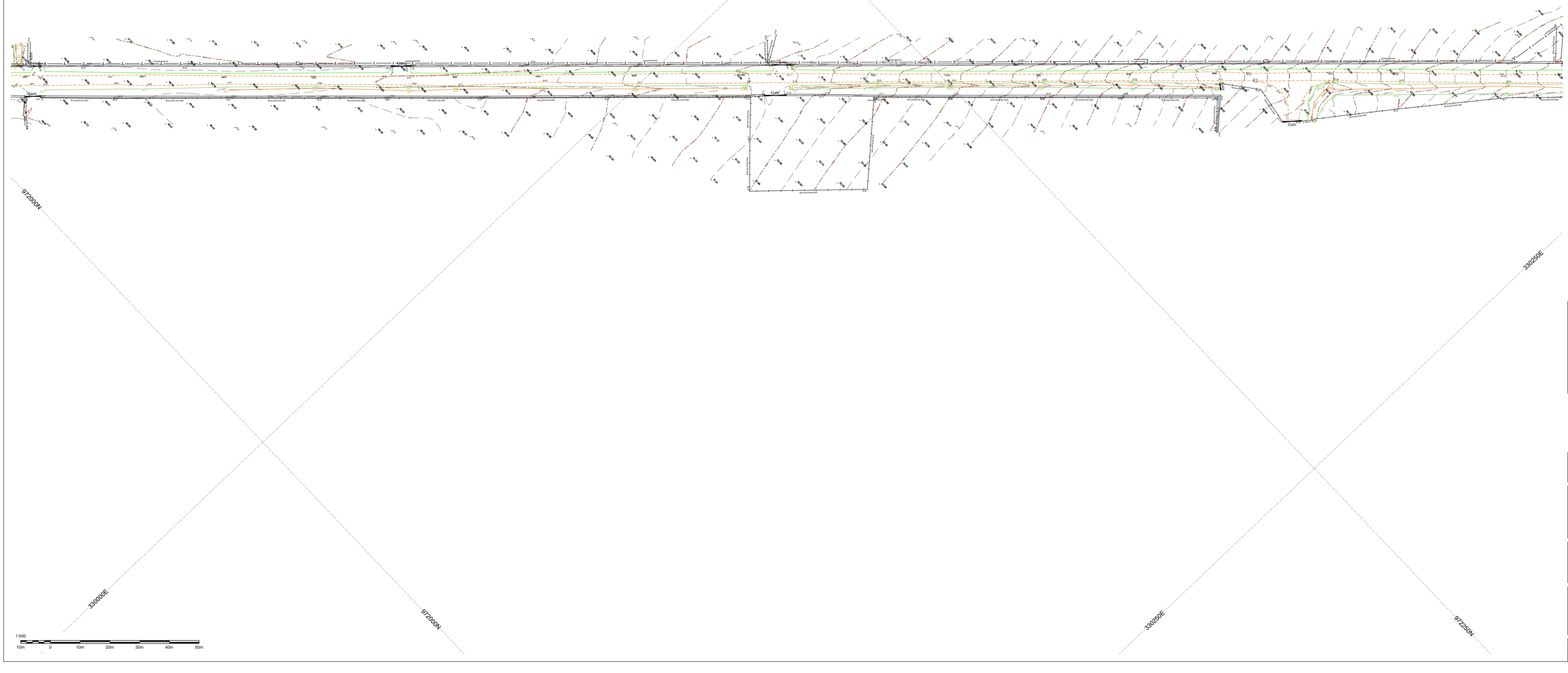

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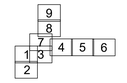


Sheet Layout

Issue	Revision	Initial	Date

Highland Surveyors Ltd

Highland Surveyors Ltd, 62 Manse Road, Nairn, IV12 4RS

Tel 07881 816702 **Email** iain@highlandsurveyors.co.uk

www.highlandsurveyors.co.uk

Client:
Field Energy

Project:
Proposed Development
Philips Mains
Rigifa

Drawing Title:
Topographic Survey

Status:
For Information

Scale:	1 : 500 @ A0		20/11/2023
By: SCD	Checked: IKF	Approved: SCD	

Dwg. No.	Rev.
23066-06 Sheet 6 of 9	-

1:500
10m 0 10m 20m 30m 40m 50m

FIGURED DIMENSIONS ONLY TO BE USED

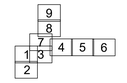
Notes

i) All survey levels are related to Ordnance Survey using GPS.

ii) Whilst every effort to locate all major service covers (ie.manhole positions) it should be noted that this may not be possible in all cases due to ground conditions or local obstructions.

LEGEND

AV - Air Valve
BH - Borehole
BOL - Bollard
BT - British Telecom Cover
CL - Cill Level
COV - Cover(unknown service)
COL - Column
CT - Cable Telecom Cover
D - Drain
EC - Electricity Cover
EL - Eaves Level
EP - Electricity Pole
ER - Earth Rod
FH - Fire Hydrant
FFL - Floor Level
G - Gully
GAS - Gas Cover
GT - Gate
IC - Inspection Cover
IL - Invert Level
LB - Lighting Bollard
LL - Lintel Level
LP - Lamp Post
MH - Manhole
MKR - Marker
OSBM - O.S. Benchmark
OHW - Overhead Wires
P - Post
PM - Parking Meter
PYN - Elec. Pylon
RE - Rodding Eye
RL - Ridge Level
RS - Road Sign
SC - Stop Cock
SV - Stop Valve
T - Toby
TCL - Tree Canopy Level
TPIT - Trial Pit
TL - Traffic Lights
TP - Telegraph Pole
TV - Cable T.V. Cover
VP - Vent Pipe
W - Water Cover
WHL - Wall Head Level
WL - Water Level
WM - Water Meter



Sheet Layout

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Highland Surveyors Ltd

Highland Surveyors Ltd, 62 Manse Road, Nairn, IV12 4RS
Tel 07881 816702 **Email** iain@highlandsurveyors.co.uk
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Client:
Field Energy

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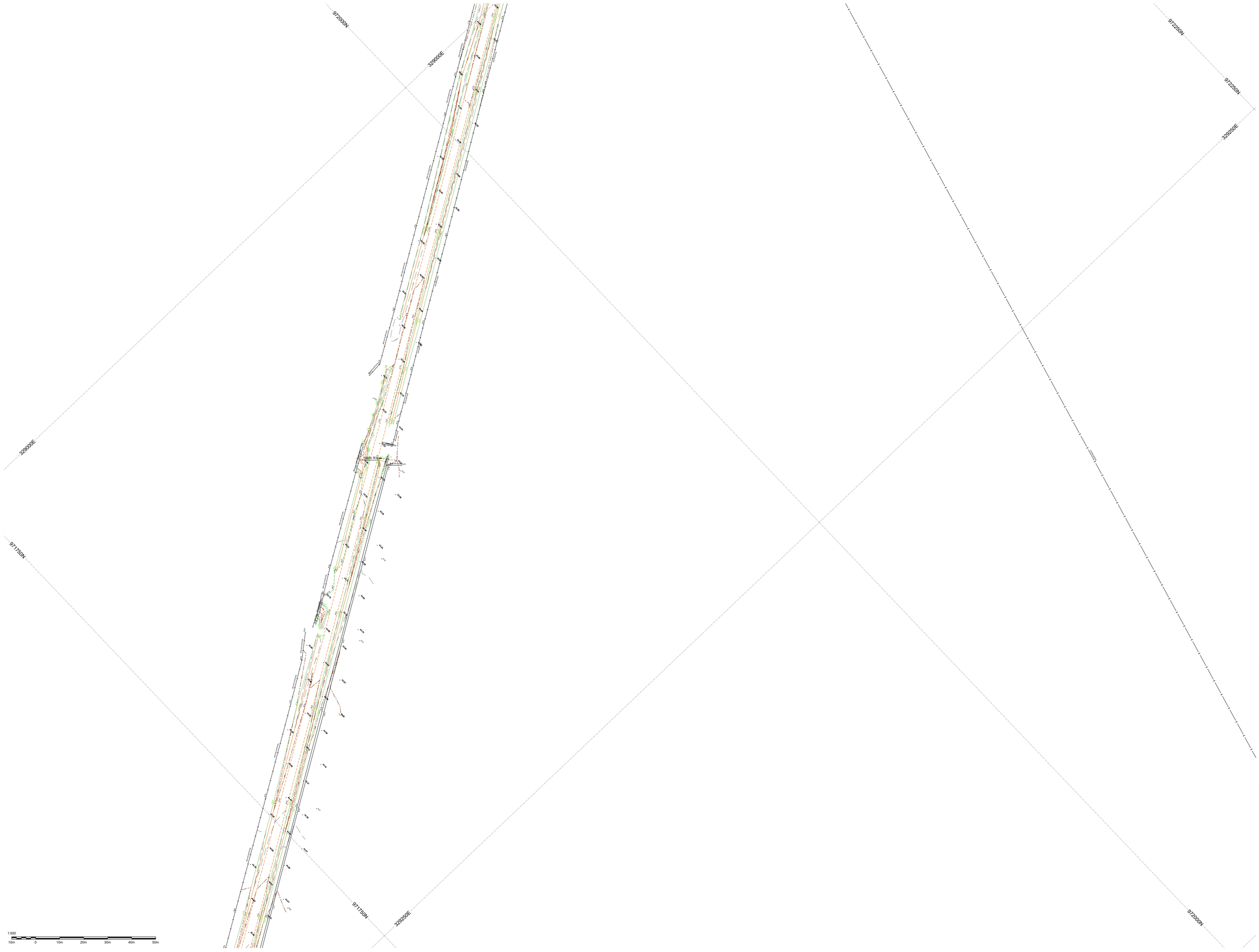
Philips Mains
Rigifa

Drawing Title:
Topographic Survey

Status:
For Information

Scale:	1 : 500 @ A0		20/11/2023
By: SCD	Checked: IKF	Approved: SCD	

Dwg. No.	Rev.
23066-07 Sheet 7 of 9	-



FIGURED DIMENSIONS ONLY TO BE USED

Notes

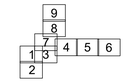
i) All survey levels are related to Ordnance Survey using GPS.

ii) Whilst every effort to locate all major service covers (ie.manhole positions) it should be noted that this may not be possible in all cases due to ground conditions or local obstructions.

North

LEGEND

AV - Air Valve	MH - Manhole
BH - Borehole	MKR - Marker
BOL - Bollard	OSBM - O.S. Benchmark
BT - British Telecom Cover	OHW - Overhead Wires
CL - Cill Level	P - Post
COV - Cover(unknown service)	PM - Parking Meter
COL - Column	PYN - Elec. Pylon
CT - Cable Telecom Cover	RE - Rodding Eye
D - Drain	RL - Ridge Level
EC - Electricity Cover	RS - Road Sign
EL - Eaves Level	SC - Stop Cock
EP - Electricity Pole	SV - Stop Valve
ER - Earth Rod	T - Toby
FH - Fire Hydrant	TCL - Tree Canopy Level
FFL - Floor Level	TPIT - Trial Pit
G - Gully	TL - Traffic Lights
GAS - Gas Cover	TP - Telegraph Pole
GT - Gate	TV - Cable T.V. Cover
IC - Inspection Cover	VP - Vent Pipe
IL - Invert Level	W - Water Cover
LB - Lighting Bollard	WHL - Wall Head Level
LL - Lintel Level	WL - Water Level
LP - Lamp Post	WM - Water Meter



Sheet Layout

Issue	Revision	Initial	Date

Highland Surveyors Ltd

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Client:
Field Energy

Project:
Proposed Development
Philips Mains
Rigifa

Drawing Title:
Topographic Survey

Status:
For Information

Scale:	1 : 500 @ A0		20/11/2023
By: SCD	Checked: IKF	Approved: SCD	

Dwg. No.	Rev.
23066-08 Sheet 8 of 9	-

FIGURED DIMENSIONS ONLY TO BE USED

Notes

i) All survey levels are related to Ordnance Survey using GPS.

ii) Whilst every effort to locate all major service covers (ie.manhole positions) it should be noted that this may not be possible in all cases due to ground conditions or local obstructions.

LEGEND

AV - Air Valve	MH - Manhole
BH - Borehole	MKR - Marker
BOL - Bollard	OSBM - O.S. Benchmark
BT - British Telecom Cover	OHW - Overhead Wires
CL - Cill Level	P - Post
COV - Cover(unknown service)	PM - Parking Meter
COL - Column	PYN - Elec. Pylon
CT - Cable Telecom Cover	RE - Rodding Eye
D - Drain	RL - Ridge Level
EC - Electricity Cover	RS - Road Sign
EL - Eaves Level	SC - Stop Cock
EP - Electricity Pole	SV - Stop Valve
ER - Earth Rod	T - Toby
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FFL - Floor Level	TPIT - Trial Pit
G - Gully	TL - Traffic Lights
GAS - Gas Cover	TP - Telegraph Pole
GT - Gate	TV - Cable T.V. Cover
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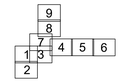
IL - Invert Level	W - Water Cover
LB - Lighting Bollard	WHL - Wall Head Level
LL - Lintel Level	WL - Water Level
LP - Lamp Post	WM - Water Meter



Sheet Layout

1:500
10m 0 10m 20m 30m 40m 50m

Issue	Revision	Initial	Date

Highland Surveyors Ltd

Highland Surveyors Ltd, 62 Manse Road, Nairn, IV12 4RS

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Client:
Field Energy

Project:
Proposed Development
Philips Mains
Rigifa

Drawing Title:
Topographic Survey

Status:
For Information

Scale:	1 : 500 @ A0		20/11/2023
By: SCD	Checked: IKF	Approved: SCD	

Dwg. No.	Rev.
23066-09 Sheet 9 of 9	-

CORNERSTONE PROJECTS LTD

SEWER

91 Market Street Hoylake Wirral CH47 5AA
Tel. 0151 632 5142
enquiries@cornerstoneprojects.co.uk
www.cornerstoneprojects.co.uk
VAT Reg. No. 851 4941 19
Company No. 5132353

Warning! Damaging a large diameter trunk main (12"/300mm and above) can result in loss of life and major water supply and water quality problems. If you're planning any extension work in the vicinity of any large diameter mains shown on our maps, you must contact Scottish Water to arrange a site visit (0800 778 778. WELL IN ADVANCE OF THE WORKS.

N

BTGBRIG01 SEWER 1

SCALE: 1:1,323

Plotted By: duncan@cornerstoneprojects.co.uk
Date Plotted: 02/04/2024

The representation of physical assets and the boundaries of areas in which Scottish Water and others have an interest does not necessarily imply their true positions. For further details contact the appropriate District office.

Scottish Water
Trusted to serve Scotland

The Bridge
6 Buchanan Gate
Stepps
Glasgow
G33 6FB

Tel No: 08000 778 778

Drain
Drain
Track
Drain
East Lodge
50.3m
53.9m
Pond
Pond
Workings (dis)
Rigifa
40.8m
Drain
Drain
Drain
Rigifa'
68.3m
Drain
Pond
Drain
50.9m
Track
Workings (dis)
Hill of Rigifa'
Pond
Philips Mains
Drain
Track
Silo
48.8m
Drain
Pond
Drain

Warning! Damaging a large diameter trunk main (12"/300mm and above) can result in loss of life and major water supply and water quality problems.
If you're planning any extension work in the vicinity of any large diameter mains shown on our maps, you must contact Scottish Water to arrange a site visit (0800 778 778) WELL IN ADVANCE OF THE WORKS.

N

BTGBRIG01 SEWER 2

SCALE: 1:1,323

Plotted By: duncan@cornerstoneprojects.co.uk
Date Plotted: 02/04/2024

The representation of physical assets and the boundaries of areas in which Scottish Water and others have an interest does not necessarily imply their true positions. For further details contact the appropriate District office.

Scottish Water
Trusted to serve Scotland

The Bridge
6 Buchanan Gate
Stepps
Glasgow
G33 6FB

Tel No: 08000 778 778

43.3m
Pond
Pond
Drain
Drain
Drain
Burn of Horsegrow
Drain
Hollandmey Moss
54.3m
Pond
Track
74.4m
Pond
Mound
(site of)
Well
Hollandmey

Warning! Damaging a large diameter trunk main (12"/300mm and above) can result in loss of life and major water supply and water quality problems.
If you're planning any extension work in the vicinity of any large diameter mains shown on our maps, you must contact Scottish Water to arrange a site visit
08000 778 778 WELL IN ADVANCE OF THE WORKS

N

BTGBRIG01 SEWER 3

SCALE: 1:1,323

Plotted By: duncan@cornerstoneprojects.co.uk
Date Plotted: 02/04/2024

Scottish Water
Trusted to serve Scotland

The Bridge
6 Buchanan Gate
Stepps
Glasgow
G33 6FB

Tel No: 08000 778 778

Drain
Drain
Pond
Pond
Drain
Drain
Pond
74.4m
Drain
Collects
Pond
Pond
Pond
Pond
Pond
Drain
Drain
Hollandmey
Ford
Drain
Pond
Drain

Warning! Damaging a large diameter trunk main (12"/300mm and above) can result in loss of life and major water supply and water quality problems. If you're planning any extension work in the vicinity of any large diameter mains shown on our maps, you must contact Scottish Water to arrange a site visit 08000 778 778 WELL IN ADVANCE OF THE WORKS.

N

BTGBRIG01 SEWER 4

SCALE: 1:1,323

Plotted By: duncan@cornerstoneprojects.co.uk
Date Plotted: 02/04/2024

The representation of physical assets and the boundaries of areas in which Scottish Water and others have an interest does not necessarily imply their true positions. For further details contact the appropriate District office.

Scottish Water
Trusted to serve Scotland

The Bridge
6 Buchanan Gate
Shepps
Glasgow
G33 6FB

Tel No: 08000 778 778

Scottish Water Asset

Waste Water Network

Fittings

Access (Lateral)
- Abandoned
- Combined (C)
- Foul (F)
- Proposed
- Surface Water (S)

Chamber
- Abandoned
- CSO
- Combined
- Foul
- Dual Manhole - Foul
- Dual Manhole - Surface
- Isolated
- Natural Water
- Not Applicable
- Other
- Planned
- Proposed
- Surface Water
- Trade Effluent
- Treated Effluent
- Unknown
- Unknown_

Combined Sewer Overflow
- CSO-COMB SEW O/FL

Balancing Pond

Basin

Bifurcation Chamber
- Abandoned
- Combined (C)
- Foul (F)
- Isolated
- Planned
- Proposed
- Surface Water (S)
- Unknown

Sewerage Air Valve
- Combined (C)
- Isolated
- Abandoned
- CSO (O)
- Foul (F)
- Other
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown

Buchan Trap
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Isolated
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Treated Effluent (E)
- Unknown(Z)

Capped End
- Abandoned
- Accepted
- Adopted
- In Use
- Isolated
- Not Applicable
- Planned
- Proposed
- Removed
- Unknown

Hatchbox
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Isolated
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown

Hydraulic Control Chamber
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Planned
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown

Inlet
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Treated Effluent (E)
- Unknown

Rodding Eye
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Isolated
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown
- Unknown(Z)

Non-return Valve
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Proposed
- Surface Water (S)
- Treated Effluent (E)
- Unknown

Lamphole
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Proposed
- Surface Water (S)
- Treated Effluent (E)
- Unknown

Outfall
- Planned
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Isolated
- Natural Water (W)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown
- Unknown_

Pond

Trench

Sluice Valve
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Isolated
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)

Unknown End
- Abandoned
- Unknown End

Washout
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown

Wetland

Vent Column

Pipes

Gravity Pipe
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Gravity Pipe General

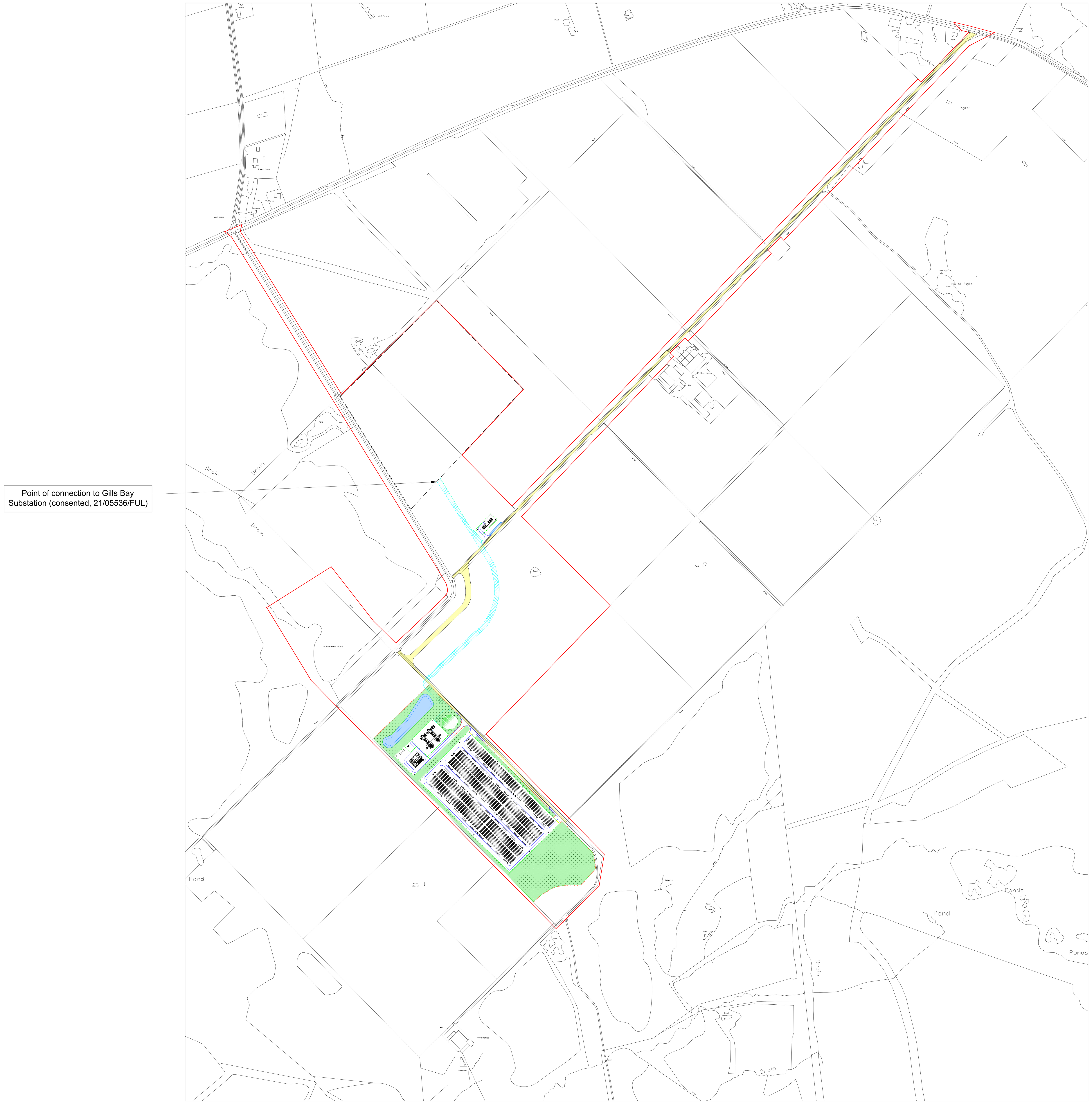
Gravity Pipe
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Gravity Pipe General

Connection (Lateral)
- Abandoned
- Combined (C)
- Foul (F)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Connection (Lateral) General

Rising Main
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Rising Main General

Rising Main
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Rising Main General

Syphon
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Surface Water (S)
- Treated Effluent (E)



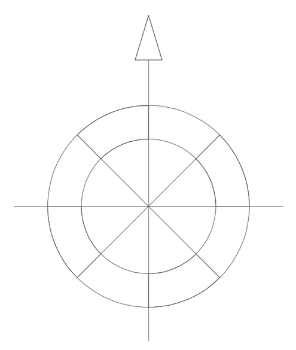
1 Indicative Site Layout Plan
Scale 1:5,000 @ A1

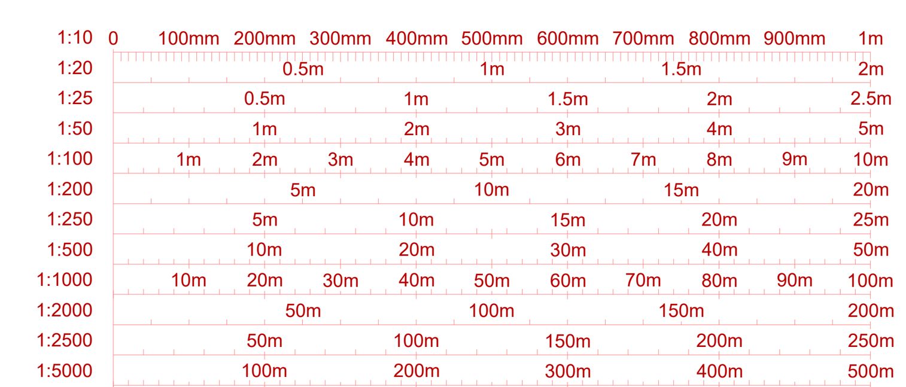
Drawing Notes:

1. All dimensions are shown in metres unless noted otherwise.
2. Do not scale from this drawing.
3. Planning boundary area = 45.381ha

Legend

- Planning Boundary
- Access Route
- Indicative Cable Route
- Consented SSE Gills Bay Substation Compound (By Others)
- Attenuation Basin/Swale
- Planting/Landscaping
- 1.5m High Bund (Landscaping)





REV	DATE	DESCRIPTION	BY	CHK'D
9	18.09.2024	Planting/landscaping area and access into interface substation amended.	JH	AP
8	12.09.2024	BESS compound layout amended and planting/landscaping area increased. Interface substation position amended.	JH	AP
7	22.07.2024	Site layout amended with reduced number of BESS blocks	JH	AP
6	12.07.2024	Site layout amended for larger attenuation basin.	JH	AP
5	19.04.2024	1:5000 scale added to scale bar.	JH	AP
4	15.04.2024	Site layout and planning boundary amended.	JH	JM
3	25.01.2024	Site layout plan amended. Drawing title amended.	JH	AP
2	19.07.2023	Option area amended	WL	RS
1	23.02.2023	Site location moved NW to avoid peat	WL	RS
0	10.02.2023	Proposed Site/Block Plan - for information	WL	RS

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

PROJECT
RIGIFA

TITLE
Indicative Site Layout Plan
200MW, 1200MWh

DISCIPLINE
PLANNING

DRAWING STATUS
FOR PLANNING

SCALE	DATE	DRAWN BY	CHECKED BY	APPROVED BY
1:5,000 @ A1	10.02.2023	JH	AP	RS

PROJECT NO.	DRAWING NO.	REV.
BTGBRIG01	001.1	9