

Design and Access Statement Coylton Greener Grid Park (GGP)

Statkraft UK Limited

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TNEI	Services	Ltd
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Company Registration Number: 03891836 VAT Registration Number: 239 0146 20

Registered Address 7th Floor 7th Floor West One Bainbridge House 86-90 London Road Forth Banks 80 St. Vincent Street Manchester Newcastle upon Tyne Glasgow M1 2PW NE1 3PA G2 5UB Tel: +44 (0)161 233 4800 Tel: +44 (0)191 211 1400 Tel: +44 (0)141 428 3180

TNEI Ireland Ltd

Registered Address: 104 Lower Baggot Street, Dublin 2, DO2 Y940

Company Registration Number: 662195 VAT Registration Number: 3662952IH

Unit S12, Synergy Centre TU Dublin Tallaght Campus

Tallaght D24 A386

Tel: +353 (0)190 36445

TNEI Africa (Pty) Ltd

Registered: Mazars House, Rialto Rd, Grand Moorings Precinct,7441 Century City, South Africa

Company Number: 2016/088929/07

Unit 514 Tyger Lake

Niagara Rd & Tyger Falls Blvd

Bellville, Cape Town South Africa, 7530



Contents

D	ocumer	nt Control1
C	ontents	2
1	Intro	oduction4
	1.1	Summary4
1.2		The Applicant4
	1.3	Statement Approach
2	The	Proposed Development6
	2.1	Overview6
	2.2	Development Infrastructure6
	2.3	Phasing of Development6
3	The	Design Statement
	3.1	Site Selection
	3.2	Rationale for the Proposed Development
		The Site Context8
		Surrounding Land Use8
	3.5	Site Design8
	3.6	Design Principles, Evolution and Mitigation
3.6.1 Design Principles		Design Principles
	3.6.2	2 Design Evolution9
	3.6.3	B Design Mitigation
4	The	Access Statement
		Route to Site
		Site Entrance
	4.3	Construction Timescales and Traffic Volumes
	4.3.	1 Enabling Works
	4.3.	2 Construction Works
	4.4	Construction Traffic Management Plan
5	Con	clusion14
FI	GURES	
Fi	gure 3.:	1 Previously Consented Layout9
	_	2 Design Freeze Layout



APPENDICES

Appendix A – Drawings



1 Introduction

1.1 Summary

This Design and Access Statement (the 'DAS') has been prepared by TNEI Services Limited (TNEI)(the 'Agent'), on behalf of Statkraft UK Limited (Statkraft) (the 'Applicant'), to accompany an application for planning permission for the construction and operation of a Greener Grid Park (the 'Proposed Development') on land immediately east of Coylton substation, on land to the south of the A70, National Grid Reference (NGR): NS 46528 19641 (the 'Site'). The Site lies wholly within the administrative area of East Ayrshire Council (the 'Council'). A site location plan including red line planning application boundary is shown in Drawing reference 15627-042 included within the submission documents within this application.

1.2 The Applicant

Statkraft is 100% owned by the Norwegian state and is Europe's largest generator of renewable energy. In the UK Statkraft develop, own, and operate wind, solar, hydro and Greener Grid Park projects. Since 2006 Statkraft has invested over £1.4 billion in the UK's renewable energy infrastructure and is a leading provider of Power Purchase Agreements (PPAs), having facilitated over 6 GW of new-build renewable energy generation through PPAs. Statkraft is contracted to deliver grid stability services to National Grid ESO, supporting their target to deliver a zero-carbon electricity system by 2025. The first two projects at Keith in Moray and Lister Drive Liverpool are operational; and Neilston Greener Grid Park in Renfrewshire is currently under construction.

1.3 Statement Approach

This DAS has been prepared in accordance with Regulation 13 of the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013 (the 'DMP') which sets out the detailed requirements of the content of a DAS in relation to planning permission.

Regulation 2(1) of the Town and County Planning (Hierarchy of Developments) (Scotland) Regulations 2009 states that development will be classed as a "major development" where the applicable threshold in Schedule 1 of the Regulations is met or exceeded. In this instance, the proposal would be classified as 'Electricity Generation', with the threshold for being considered a 'Major' development where 'the capacity of the generating station is or exceeds 20 megawatts' (but less than 50.1MW).

A DAS is required in this case as the Proposed Development would constitute a Major Development, with a capacity of up to 50 Megawatts (MWs).

The requirements under Regulation 13 of the DMP cover both design and access, allowing Applicants to demonstrate an integrated approach that will deliver inclusive design, and address a full range of access requirements throughout the design process.

This DAS provides information on the principles and approaches that have guided the design process for the Proposed Development. It demonstrates how the Site and its surroundings have been fully appraised to ensure that the final design solution achieves a balance across a range of factors which are required to be addressed. It describes the starting point for the design of the Proposed Development, the various factors that have driven the design process, and subsequent iterations to the layout that were made in response to the environmental and technical considerations identified.

The DAS forms part of the planning application submission, which also comprises a covering letter, a Planning Statement and supporting technical appendices; planning drawings; planning application form/ownership certificate details; and the requisite planning fee.

The role and purpose of the DAS, in accordance with Regulation 13 of the DMP, is to:





- Explain the design principles and rationale that have been applied to the Proposed Development;
- Demonstrate the steps taken to appraise the context of the Proposed Development, and how the design of the Proposed Development takes that context into account;
- Demonstrate why a new gated access is proposed and how the construction traffic would be managed;
- Explain the policy adopted as to access, and how policies relating to access in relevant Local Development Plan (LDP) have been considered;
- State what, if any, consultation has been undertaken on issues relating to access to the Proposed Development and what account has been taken of the outcome of any such consultation; and
- Explain how any specific issues which might affect access to the Proposed Development have been addressed.

This DAS has also been prepared in accordance with guidance included within the Planning Circular 3/2022: Development Management Procedures ('the Circular') Part 3, 'Making a Planning Application', Paragraphs 3.18-3.33. This section sets out the requirements for what must be included within the contents of a DAS.

Paragraph 3.29 of the Circular states 'this should explain how the applicant's policy/approach adopted in relation to access fits into the design process and how this has been informed by any development plan policies relating to access issues'



2 The Proposed Development

2.1 Overview

The Proposed Development consists of the construction and operation of a Greener Grid Park (GGP), with a capacity of up to 50 MW. The Proposed Development would likely consist of multiple containerised lithium-ion (Li-ion) battery storage units, along with associated equipment, including inverters, transformers, HV equipment, comms house, storage containers, site office, and noise attenuation fencing. The equipment would be sited on a levelled and stoned platform, with appropriate surface water drainage, with the compound enclosed by suitable perimeter fencing. Individual components would likely require concrete plinth type foundations.

2.2 Development Infrastructure

The Proposed Development would comprise the following key components:

- 24 Blocks of Battery storage containers, each measuring a maximum of 4 m (H) x 28 m (L) x 15 m (W).
- AUX Transformers, each 2.5 m (H) x 2.6 m (L) x 1.6 m (W).
- Storage containers, each 2.6 m (H) x 6.1 m (L) x 2.4 m (W).
- Office cabins, each 3.60 m (H) x 9.80 m (L) x 3.1 m (W).
- An underground grid connection cable of approximately 0.3km in length.
- Comms houses, each 5.63 m (H) x 18.8 m (L) x 14.2 m (W).
- 4.5 m (H) Noise attenuation / security perimeter fencing.
- 4.5 m (H) high Perimeter Gate (Close Boarded)
- 3.4 m (H) Internal security fencing for HV Yard.
- 3.4 m (H) Palisade Gate for HV Yard.
- CCTV / Lighting Poles (6m High).
- Porous Crushed Aggregate Hard Surfacing.
- HV Equipment at 8 m (H) x 28.1 m (L) x 14.4 m (W).
- HV Yard at 40.42 m (L) x 20.78 m (W).
- Landscape and biodiversity enhancements to include native tree, native mix-species hedgerows, and wildflower meadows.

2.3 Phasing of Development

The design allows for the installation of more BESS than are necessary to provide the 50MW in this application. Permission to utilise the remaining potential capacity would be subject to a future Section 36 application to Scottish Ministers. In terms of phasing, the site will be constructed in two distinct phases (Phases 1 and 2, as shown on Drawings 15627-032, 15627-034, 15627-046 and 15627-047 (Appendix A)).



3 The Design Statement

3.1 Site Selection

In March 2022 Statkraft was awarded a Stability Pathfinder Phase 2 contract to provide frequency control services to National Grid Electricity System Operator (NGESO), in the form of grid forming converter BESS. This contract is for connection to the operational Coylton National Grid substation.

There are a limited number of sites which are available that can connect to the electrical grid networks. Coylton was identified by National Grid as a location that needed stability services. The existing substation is already a strong and central location on the Scottish grid, therefore it's a preferred location for the new grid services which are required to enable integration of large amounts of renewable energy that are needed to meet Scottish and UK Government targets.

This Site was identified as being suitable given the close proximity to Coylton substation which is part of the National Grid and operated by SP Energy Networks. Projects of this nature must be sited within close proximity to the connecting substation to avoid lengthy transmission cables, with increased distance away from the connecting substation ultimately threatening the technical and financial viability of a project.

There are no designated features located on or with close proximity to the Site, nor are there any sensitive habitats or protected species present. The Proposed Development is appropriately set back from residential properties to limit potential effects on residential amenity. The Site is accessible via a suitable road network and has appropriate ground conditions. Overall, the location of the Site, adjacent to Coylton substation, combined with its appropriate scale, and lack of environmental constraints, demonstrates that the Proposed Development offers an opportunity to provide critical support to grid infrastructure.

Statkraft has secured a 275kV connection to the Coylton substation with energisation date of early 2025.

3.2 Rationale for the Proposed Development

The UK's electricity network has historically relied on large, centralised power plants however, these traditional power plants are being phased out as the UK's energy industry moves towards a net zero future, relying on greater amounts of clean energy through renewable technologies. As traditional power plants are phased out, there is an increase in transmission system short circuit levels and inertia is currently falling due to the decline in transmission connected synchronous generation, previously provided by traditional power plants. Renewable generators like wind and solar connect to the grid in a different way, which requires the National Grid to find alternative providers to help support and stabilise the network.

Grid scale battery storage, such as that proposed within this submission, provides constraint management services to deal with periods when there is a lack of electricity demand within the network, as well as other grid stabilisation issues. The ability to store renewable energy allows green energy to be utilised at a later stage, thus facilitating more renewable energy within the grid and improving the energy mix being consumed. A Balancing Mechanism is also provided with this technology, facilitating a reserve supply to ensure the network is in balance and reserve power is used when the network comes under 'stress'.

This move toward the decentralisation of grid network capability offers significant benefits by effectively increasing the resilience of the electrical grid to the further deployment of renewable low carbon generation. The project would make a key contribution towards delivering the Government's decarbonisation and climate change targets, by helping to accommodate the increased generation of low carbon power from intermittent and distribution connected sources.

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NGESO has recognised the need for zero carbon stability services and has launched a series of tenders call Stability Pathfinders to secure additional stability services for low carbon system operation. Statkraft were one of two bidders in Scotland to secure contracts in Stability Pathfinder Phase 1 with a GGP at Keith, Moray, which commenced operation in December 2021 and a GGP at Lister Drive Liverpool which was commissioned in 2022.

Following Phase 1 Stability Pathfinder NGESO are in process with Phase 2 and Phase 3. NGESO are also developing a market for stability services to satisfy increasing future needs.

Statkraft's GGP at Coylton was awarded a Stability Pathfinder Phase 2 contract in March 2022. The project will also provide these stability services without generating power when it is not needed. As a result, there will be reduced need for fossil generation to provide stability, increasing the use of renewable generation, lowering carbon emissions and lowering costs for consumers. Under this contract, the project will provide this stability from 2025.

3.3 The Site Context

The Site is located on agricultural land adjacent to Coylton substation, with a grid reference of NS 46554 19681 and the nearest post code to the Site is KA18 2RN. The proposed Site area is 13.10 hectares, with an additional 7.70 hectares in control of the Applicant.

3.4 Surrounding Land Use

The Site is located approximately 1.8 km northeast of Drongan, 3.5 km west of Ochiltree and 4.8 km east of Coylton. The area immediately surrounding the Site is predominantly rural in nature except for Coylton substation immediately west of the Site. The Killoch Depot is also located approximately 800 m northeast of the Site.

A watercourse runs through the Site itself with several overhead electricity lines also running through the Site and within the surrounding area, leading from Coylton substation. There are no identified statutory landscape or ecological designations within 1 km of the Site.

3.5 Site Design

The Proposed Development's design has ensured limited visual disruption to the surrounding landscape, while accounting for the environmental and physical constraints highlighted through various assessments included within the planning submission. Proposed planting and landscape improvements are intended to provide further visual screening through the utilisation of native species, which would integrate the Proposed Development into the wider landscape, enhance the existing landscape character and ensure a portion of habitat retention can be achieved through the inclusion of additional vegetation.

3.6 Design Principles, Evolution and Mitigation

3.6.1 Design Principles

The Proposed Development consists of either uncovered electrical infrastructure or stored battery infrastructure within steel container-style units, in addition to the palisade and electric fencing that provides an industrial aesthetic to match the existing fencing and overhead lines surrounding the National Grid substation adjacent to the Site. The design principles are therefore reflective of the nature of the Proposed Development and its location in close proximity to the existing Coylton substation.

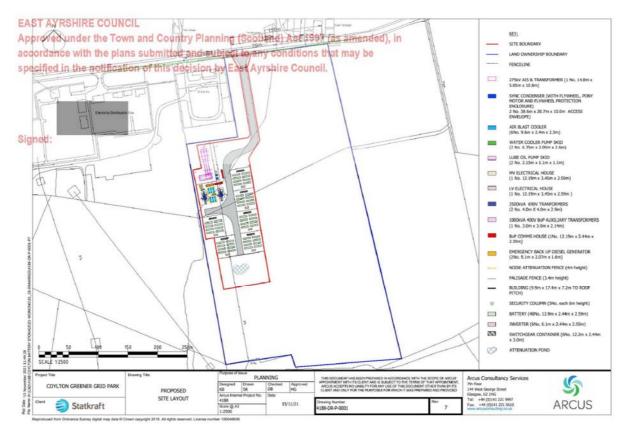


A temporary compound would be required during the construction phase. This temporary compound area would be located within the site boundary as shown on Drawings 15627-032 and 15627-046 in **Appendix A** and would contain areas for the storage of plant and machinery, parking for construction vehicles and welfare facilities as required. This approach would ensure that no construction vehicles park on the A70.

3.6.2 Design Evolution

Planning permission was granted in August 2022 for a 19.9MW BESS development on the site (refer to Figure 21_0748_PP-APPROVED_APPENDIX_2_-_SITE_LAYOUT as shown on Figure 3.1 below).

Figure 3.1 Previously Consented Layout



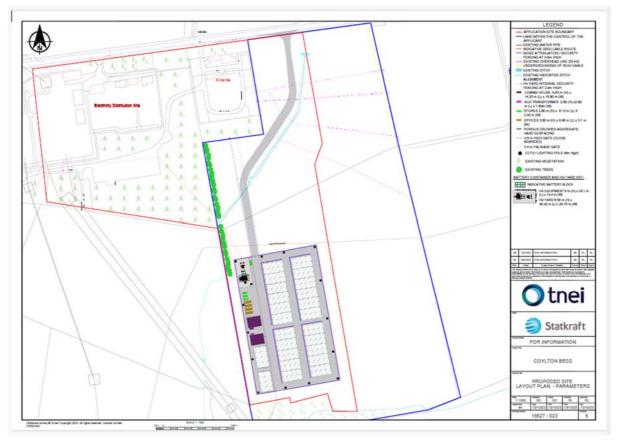
In order to develop a scheme with greater capacity to meet the grid stability requirements of the National Grid, further design work has been undertaken to ensure the most appropriate project is proposed for the site.

The Applicant undertook analysis of the consented scheme which indicated that due to potential noise impacts on the nearest residential properties, the required increased capacity could not be met within the area of the consented scheme in the northern area of the site.

Following a series of noise assessments, the scheme was redesigned to sit within the southern area of the site and developed into the final proposed layout, as presented in Figure 3.2 below. This took account of potential impacts on residential receptors, as well as existing infrastructure across the site in the form of overhead lines and service utilities.



Figure 3.2 Design Freeze Layout



As mentioned previously, the above layout allows space for the installation of more BESS units than are necessary to provide the 50 MW capacity sought by the planning application, however, the site may be constructed in two distinct phases (Phases 1 and 2, as shown on Drawings 15627-046 and 046 submitted for this planning application). Permission to utilise the full potential capacity of the site, would be subject to a future Section 36 application to Scottish Ministers in due course should the Applicant choose to develop the site further.

3.6.3 Design Mitigation

A number of mitigation measures have been embedded into the design of the Proposed Development as set out below.

As detailed above, landscape and planting measures have been included to minimise landscape and visual impacts on sensitive receptors identified within the Landscape and Visual Impact assessment provided by TGP and to also provide biodiversity enhancements in accordance with National Planning Framework 4. This enables the Proposed Development to protect and enhance the wider landscape and maintain the setting of sensitive receptors surrounding the Site. The Proposed Development includes planting of native hedgerows, trees, and woodlands. The planting of native species would enable habitat retention onsite with the potential for habitat connectivity with the surrounding environment to and from the Site.

The inclusion of noise attenuation fencing around the battery containers within the Site will ensure that noise levels can be maintained below the limits at the nearest Noise Sensitive Receptors. This minimises the operational noise emitted from the Proposed Development, therefore ensuring the protection of residential amenity surrounding the Site.

Existing electrical infrastructure within and surrounding the Site has influenced the siting of various components in the Proposed Development. Existing 33kV cables travelling over the Site and any



required setback distances for health and safety have been considered. Two existing 33kV lines which run north to south through the site will be diverted to the west of our site in agreement with Scottish Power Distribution, and appropriate separation distances from the realigned route has been incorporated into the proposed design. Existing overhead lines cross the proposed access track. Where these cannot be diverted to underground cables, the design of the access track has considered sufficient safety clearance distances from all retained overhead lines, ensuring no additional interference with operational electrical infrastructure would occur as a result of the construction and operation of the Proposed Development.

The proposed access track will also cross an existing field drainage ditch and an existing foul water drainage pipe. Detailed site investigations will be undertaken prior to detailed design to assess the depth and size of the pipe and ensure the crossing of the access track and is appropriately designed to mitigate impacts on the existing asset. The drainage ditch will be culverted where the access track will cross it, the design of which will be confirmed at detailed design.

The design principles and evolution of the Proposed Development have accounted for environmental and physical constraints highlighted through the various technical assessments included within this planning submission, with mitigation measures adopted to minimise the potential impact of the Proposed Development highlighted within these assessments. Mitigation measures adopted have ensured the technical and financial viability of the Proposed Development has been maintained, providing grid stability and constraints management to the National Grid when operational.

To minimise impacts identified in the Landscape and Visual Impact Assessment a combined Landscape Plan has been produced (document ref 2115 L01B Landscape Plan) and submitted in support of this application. Key measures within this plan include:

- Gapping up of existing hedgerow.
- Planting of sections of new native hedgerow.
- Planting of native trees and woodland edge mix.
- Planting of a community orchard populated with local heritage varieties.
- Planting of Native Wildflower Meadows.

This planting will also provide biodiversity enhancement in accordance with NPF4.



4 The Access Statement

4.1 Route to Site

Construction traffic associated with the Proposed Development will access the Site from the A70 via a new bellmouth which would be the only connection point to the public road network. A Construction Traffic Management Plan ('CTMP') has been prepared to support this application. This demonstrates how access for the Site has been considered and takes account of relevant access policies. Further consideration of policies relating to access are set out in the Planning Statement which accompanies this application submission. As set out in the CTMP construction traffic would access the Site as follows:

- Aggregate and stone: Likely to be supplied from Sorn Quarry, located to the northeast of the Site, and accessed from the A70;
- Ready-mix Concrete: Likely to be supplied from the adjacent Breedon Killoch depot;
- HV electrical equipment: Supplied from the south via the A76 from the Central Belt;
- General construction supplies: Supplied from Ayr, via the A70;
- General site deliveries: Supplied from Ayr, via the A70; and
- Construction Staff: Accessing the Site from the local area, with 50% based in Ayr and to the west of the site and the remainder from Cumnock and to the east of the site.

4.2 Site Entrance

The Site is located approximately 1.8 km to the northeast of the settlement of Drongan, immediately to the east of Coylton Substation and access to the site would be taken from a new bellmouth constructed from the A70 (which is located immediately to the north of the Site) and as shown on Drawing SK01 and SK02 within the CTMP submitted in support of this application. This allows for visibility splay of 4.5 m x 215 m in both east and west directions.

A new internal access track is proposed within the Site which would join the new Site access junction from the A70 opposite from East Tarelgin Bungalow to create a new gated access for the Site. The junction has been designed to accommodate the proposed transformer deliveries. The access junction and internal access track is essential for the Proposed Development as it allows Heavy Goods Vehicles (HGVs) and other vehicles to enter the Site to store all necessary components and equipment within the Temporary compound area.

The internal access track would take the appearance of vernacular farm tracks with gravel surface. The gravel would be placed over a sub-surface which itself would be constructed on a geotextile membrane.

4.3 Construction Timescales and Traffic Volumes

The construction programme is anticipated to commence in Quarter 2 2024, subject to the granting of planning permission. Phase 1 of the Proposed Development would be constructed in two stages:

- Enabling works.
- Construction works.

Phase 2 of the Proposed Development (as shown on Drawings 15627-034 and 15627-047 (**Appendix A**)) will be constructed at a later stage and will follow a similar process of enabling and construction works.



4.3.1 Enabling Works

The enabling work phase would involve the preparation of the Site for construction to begin, and include the following:

- Preparing the Site access and internal access tracks to be used by the HGVs.
- Preparing the Site's temporary compound area where HGVs can unload equipment associated to the development of the GGP.
- Establish Site security measures such as Site fencing, CCTV cameras and Lighting.

4.3.2 Construction Works

The construction period of the Proposed Development is anticipated to last for approximately 12-18 months. During the construction period, HGV movements would be required to deliver materials and equipment necessary for the development. It is anticipated that there would be a peak average daily flow of 83 vehicles including cars and HGVs for the delivery of the material per working day of the construction phase. The site is located within good proximity to the local road network, including the A70 (Ayr Road) located to the immediate north of the Site for access during the construction phase.

4.4 Construction Traffic Management Plan

A CTMP has been prepared by Pell Frischmann and accompanies this application. This CTMP assesses and states the traffic management measures which would ensure efficient and safe transport of vehicles and personnel to and from site, and with minimum disruption to other road users. It is anticipated that this would be enforced via a suitably worded planning condition. The CTMP would be submitted for approval by the Council Roads Department prior to the commencement of construction activity.

Following construction, once in full operation, the Development would not generate any significant traffic movements, with security and maintenance staff occasionally travelling to the Site by cars or small vans.



5 Conclusion

This DAS has been prepared in accordance with requirements of Regulation 13 of the DMP.

The DAS has established:

- The design principles and rationale that have been applied to the Proposed Development, including the various relevant environmental and technical criteria such as minimising impacts on residential receptors and existing assets;
- The steps taken to appraise the context of the Site, and how the design of the Proposed Development takes that context into account, in respect of design iteration, the various relevant environmental and technical criteria, and each design component;
- The relevant considerations in forming the site access; and
- That all relevant issues which might affect access to the Proposed Development have been addressed.

The DAS has thus established that as the Applicant Statkraft can ably demonstrate an integrated approach that would deliver inclusive design and address the full range of relevant access requirements throughout the design process, whilst ensuring that any environmental impacts are mitigated and therefore acceptable.

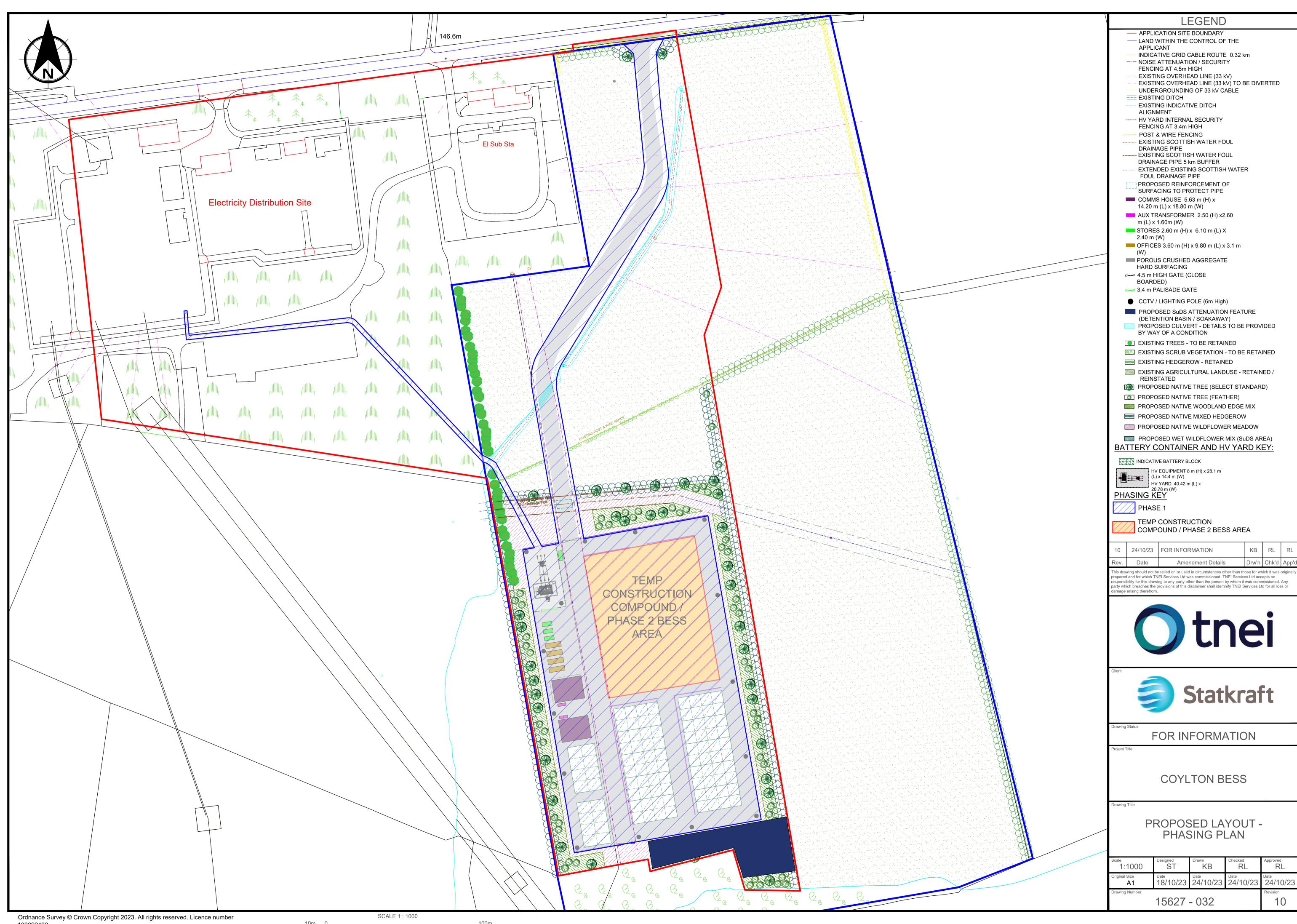


Appendix A – Drawings

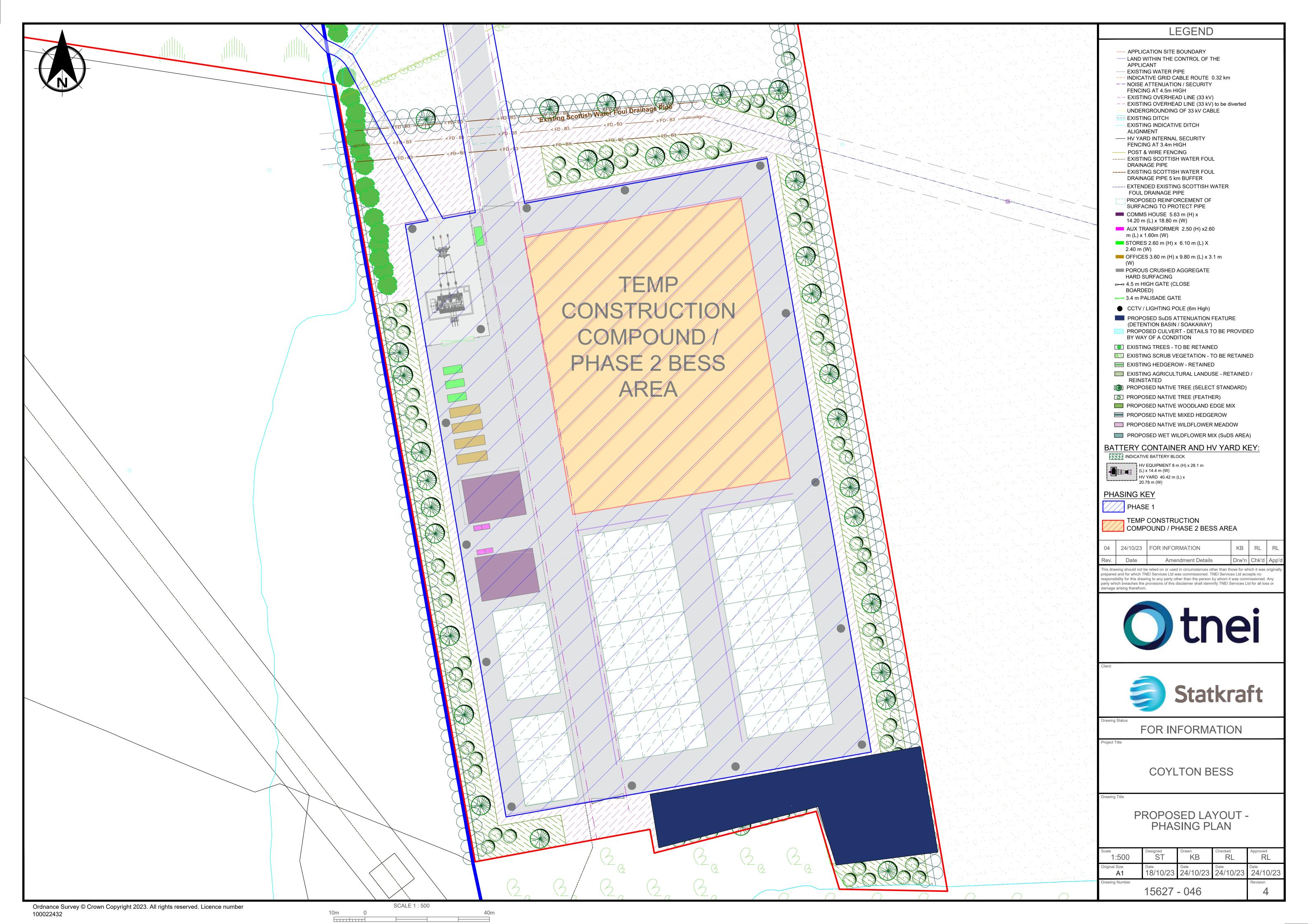
Phasing Plan Drawings 15627-032 and 15627-046

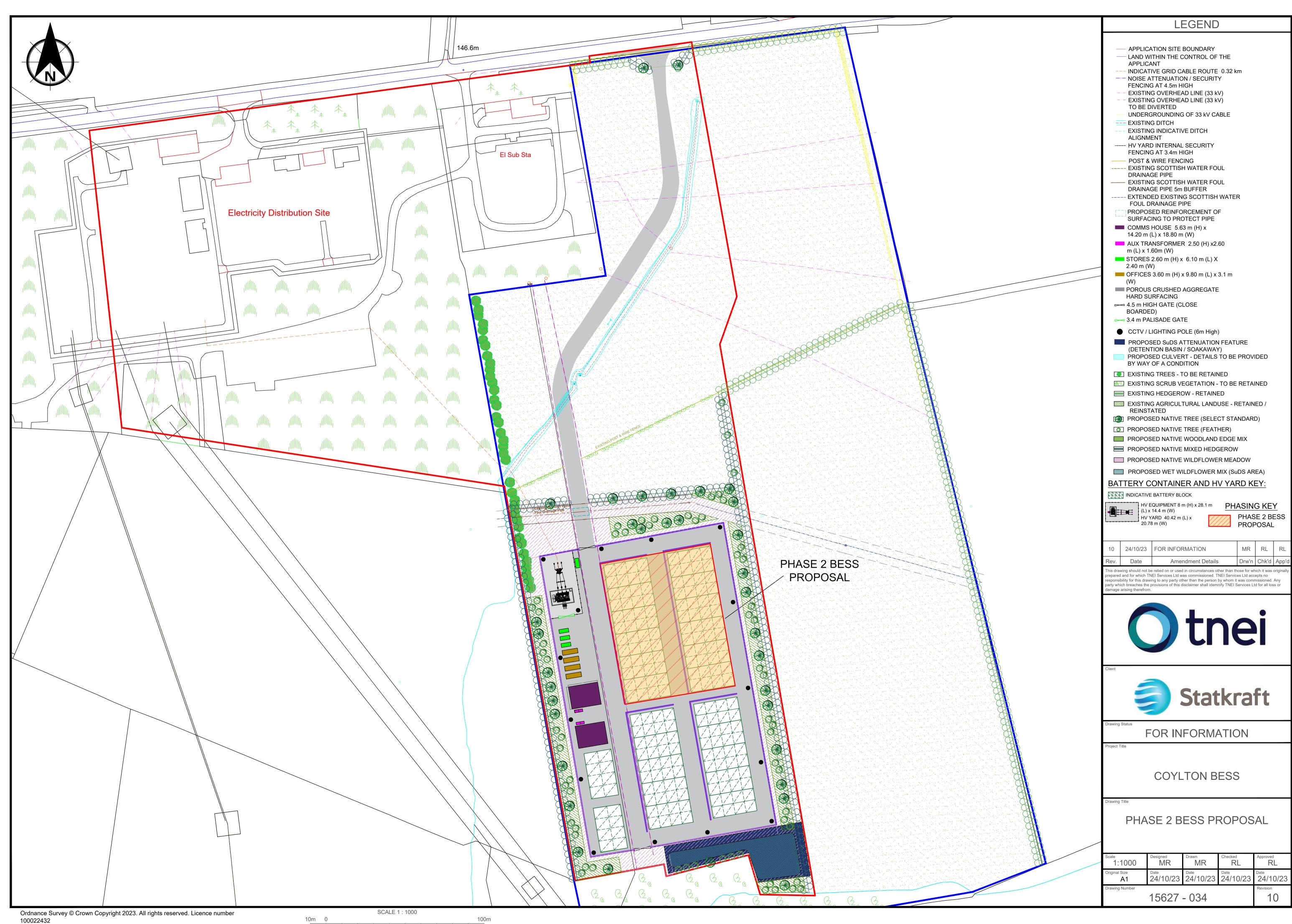
Phase 2 Drawings 15627-034 and 15627-047





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