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traffic engineering and transport planning

Harmony FL Ltd

Proposed Battery Energy Storage System Land North of Longside Road, Flushing Construction Traffic Management Plan

June 2025

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Client Commission			
Client:	Harmony FL Ltd	Date Commissioned:	July 2024

LTP Quality Control					
Job No:	LTP/24/6089	File Ref:	Flushing BESS CTMP Final Issue 1		
Issue	**Revision**	**Description**	**Author**	**Checked**	**Date**
1	-	Final issue for planning	KB	MR	23/06/2025
			Authorised for Issue:		SW

LTP PROJECT TEAM

As part of our commitment to quality the following team of transport professionals was assembled specifically for the delivery of this project. Relevant qualifications are shown and CVs are available upon request to demonstrate our experience and credentials.

Team Member	LTP Designation	Qualifications
Steven Windass	*Technical Director*	*BSc(Hons) MSc(Eng) CEng FIHE MCIHT*
Mike Raynor	*Associate*	*BA(Hons) MIHE*
Katy Bentley	*Senior Transport Planner*	*BSc(Hons) MIHE*

PROPOSED BATTERY ENERGY STORAGE SYSTEM LAND NORTH OF LONGSIDE ROAD, FLUSHING CONSTRUCTION TRAFFIC MANAGEMENT PLAN

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1. INTRODUCTION

1.1 Background

1.1.1 This Construction Traffic Management Plan (CTMP) is prepared and submitted on behalf of Harmony FL Ltd. ('the Applicant') and in support of an application for consent under S36 of the Electricity Act 1989 ('the application') and also comprises a request that Scottish Ministers give a direction under section 57(2) of the Town and Country Planning (Scotland) Act 1997 that planning permission for the development be deemed to be granted. It addresses matters referred to in Schedule 9 to the Electricity Act, to development plan and policy guidance and to consideration of material matters.

1.1.2 The application comprises land within Aberdeenshire Council (AC) Area – 20.72ha ('Application Site'). A plan of the proposed site layout is attached as Appendix 1.

1.1.3 The description of the proposed development which is the subject of this application is as follows:

'*Construction and operation of a 400MW Battery Energy Storage System (BESS) with associated infrastructure including, access roads, sub-station buildings, supporting equipment, fencing, drainage infrastructure and landscaping.*' at Land North of Longside Road, Flushing, Peterhead (GR: 405524, 847560).

1.1.4 This CTMP is part of a suite of documents submitted with the application, as outlined below. These supporting documents are in addition to the formal application documents comprising the accompanying plans, sections, and elevations. The full suite of supporting documents is as follows:

- Planning Design and Access Statement (PDAS)
- Community Wealth Building Plan (CWBP)
- Pre-Application Consultation Report (PACR)
- Confidential Ecological Survey Report
- Confidential Protected Species Report
- Archaeological Desk-Based Assessment (ADBA)
- Landscape and Visual Impact Assessment (LVIA) and Landscape Strategy
- Noise Impact Assessment (NIA)
- Flood Risk & Drainage Assessment Report (FRDAR)
- Fire Water Management Plan (FWMP)
- Private Water Supply Impact Assessment
- Topographical Surveys
- Construction Traffic Management Plan
- Transport Statement
- Outline Battery Safety Management Plan (OBSMP)

1.1.5 The Electricity Works Environmental Impact Assessment (Scotland) Regulations 2017 are also relevant to the proposal as the proposal comprises development falling within Schedule 2 of those Regulations. A Screening request has been submitted to the ECU and the Decision was received on 17th March 2025. It confirmed that, *"Scottish Ministers adopt the opinion that* ***the proposal does not constitute EIA development and that the application submitted for this development does not require to be accompanied by an EIA report.****"*

1.1.6 The purpose of this report is to outline the approach to mitigating the impact of construction traffic at the site. As outlined above, LTP has also been commissioned to produce a Transport Statement (TS) (LTP, 2025) to support the application, with the TS providing an appraisal of the expected transport impacts of the proposals.

1.2 Scope

1.2.1 The scope of this report is outlined below:

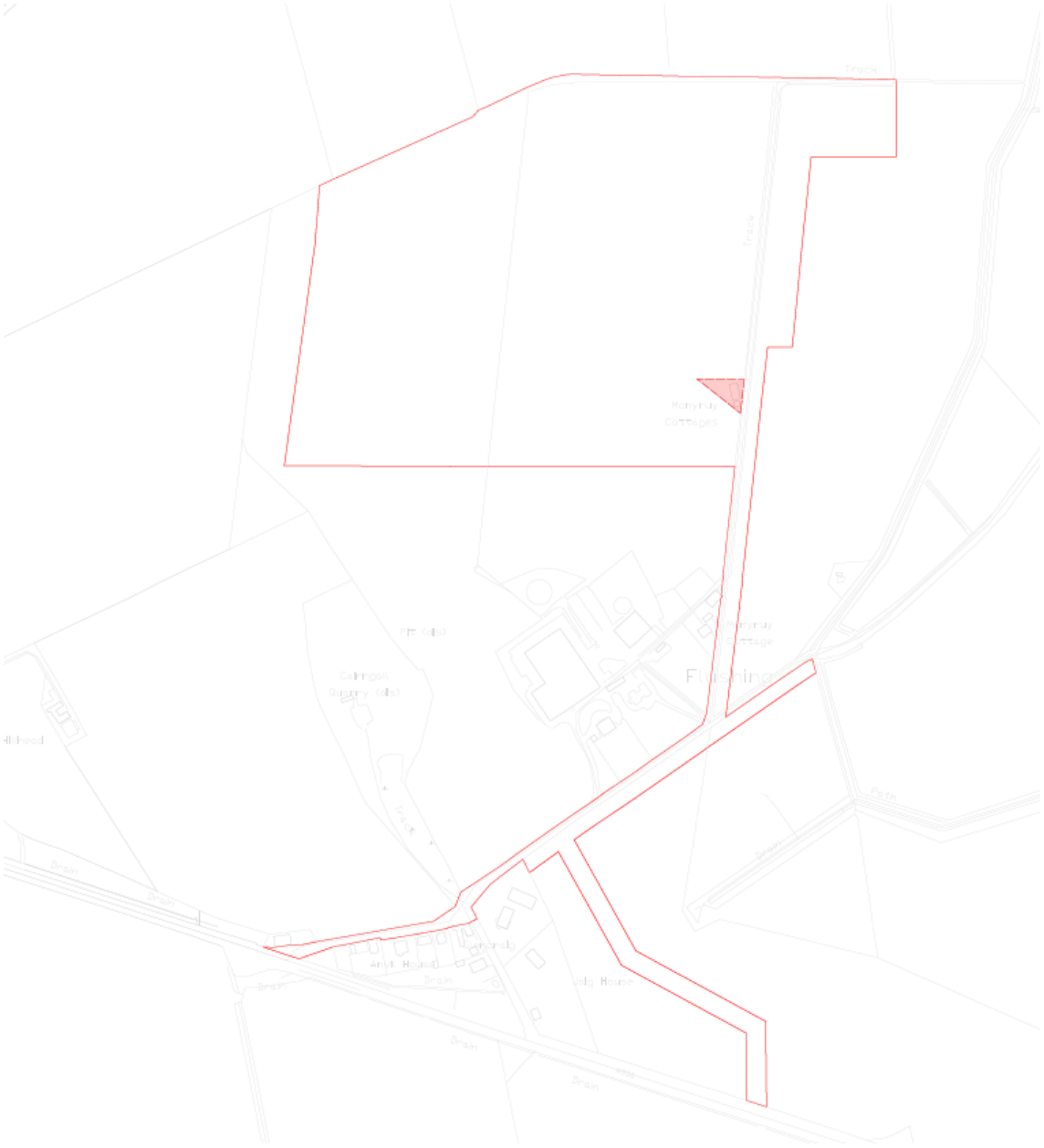
- ***Introduction*** – Brief summary of the site location, proposed development and planning history.
- ***Local road network*** – Description of the local road network adjacent to the site, including details of key geometric features, speed limits and waiting restrictions.
- ***Construction traffic access arrangements*** – Description of the proposed access arrangements for construction and staff vehicles arriving at and departing the site.
- ***Construction programme*** – Details of the anticipated construction period at the site, the vehicles that are to be used and the expected frequency of construction vehicle movements at the site.
- ***Traffic management measures*** – Description of traffic management measures that are to be implemented to minimise the effects of traffic travelling to and from the site during the construction period, including reference to:
  - Measures to control traffic movements;
  - Measures to reduce conflict;
  - Parking arrangements and manoeuvring facilities;
  - Promoting car sharing amongst staff;
  - Measures to protect pedestrians/cyclists;
  - Measures to ensure appropriate storage of materials;
  - Road cleaning regime;
  - Measures to control noise, dust & dirt; and
  - Signing strategy.

2. SITE BACKGROUND

2.1 Site Location, Existing Use & Planning History

2.1.1 The proposed BESS development is to be installed on exiting agricultural land to the north of Longside Road in Flushing, Peterhead. The site is bound on all sides by agricultural land with an existing access track providing access to Tarred Road located on the south-eastern boundary of the site. The approximate location and red line boundary of the site is highlighted in Figure 1.

Figure 1: Site Location



Source: Red Line Boundary Plan provided by Applicant.

2.1.2 It is understood that there have been no recent pertinent planning applications relating to the application site.

2.2 Development Proposals & Access Arrangements

2.2.1 This report is based upon the proposals outlined on the site layout plan attached as Appendix 1. The proposals will be seeking full planning consent to provide a 400MW BESS development contained within a fenced compound, with further details expected to be submitted as part of the planning application.

2.2.2 The delivery and construction/installation period of the proposed BESS is anticipated to take place over a 20-month period. The trip generation projections associated with the proposed development are presented in Section 4 of this report.

2.2.3 Vehicular access to the site is to be provided via the existing access track on the south-eastern boundary of the site which connects with Tarred Road to the south. The existing access track is expected to currently accommodate large agricultural vehicle movements, with two access points set to be provided with then northern access forming an emergency access and the southern access forming the primary access during the construction, installation and maintenance periods.

Photo 1: Existing Access Track

2.2.4 Vehicle parking for site workers during all stages of construction and operation will be accommodated on-site with no vehicles allowed to park or wait on the adjoining road network or access track during any stage of the development.

2.3 Local Development Scheme

Netherton Hub

2.3.1 A planning application (ref: APP/2024/1714) was submitted in October 2024 and is yet to be determined associated with the *'… Erection of a Strategic Electricity Transmission Hub Including 400kV AC Substation, 132kV AC Substation, 2 HVDC Converter Stations, Transmission Hall, Spares Warehouse, Operations Base and Associated Works'*. An Outline CTMP (SLR, 2024) was submitted in support of the application and has been referenced where applicable in this TS, as well as *'Chapter 11 – Traffic and Transport'* of the Environmental Impact Assessment Report (EIA Report) (SSEN, 2024). The cumulative traffic impact has been considered in the TS (LTP, 2025), as requested by AC Roads during pre-application discussions.

3. LOCAL ROAD NETWORK & CONSTRUCTION TRAFFIC ROUTES

3.1 Local Road Network

3.1.1 As previously mentioned in Section 2.2, the site is to be accessed via an existing access track which is approximately 3m in width and provides access to several fields to the north, serving three residential properties, and forms Tarred Road to the south of the site. Tarred Road is a two-way single-track road which measures between approximately 4.0m and 4.5m in width and is subject to a derestricted speed limit (60mph), although vehicle speeds are expected to be considerably below 60mph due to the nature of the road. There are not any existing waiting or parking restrictions on Tarred Road.

Photo 2: Tarred Road

3.1.2 Approximately 500m to the south-west of the existing access track, Tarred Road meets Longside Road at a simple priority T-junction. Longside Road is a two-way single carriageway that forms part of the A950 and measures approximately 6.3m in width and is subject to a derestricted speed limit (60mph) in the vicinity of the site.

Photo 3: Tarred Road/Longside Road Priority Junction

3.1.3 Longside Road provides access to the town of Peterhead to the east and forms West Road at the four-arm priority controlled roundabout with Windmill Road and Meethill Road. Approximately 5.7km to the west of the Tarred Road junction, Longside Road provides access to the village of Mintlaw and forms Station Road at The Square roundabout.

Photo 4: Longside Road

3.1.4 Longside Road provides access to the A90 at Howe o'Buchan Roundabout approximately 5.4km to the east of the Tared Road junction. The A90 forms part of the Trunk Road Network (TRN) managed by Transport Scotland (TS).

3.2 Proposed Construction Vehicle Routeing

3.2.1 The likely constraints relating to the routeing of Heavy Goods Vehicles (HGVs) and Abnormal Indivisible Load Vehicles (AILVs) associated with the construction of the site have been considered, with the proposed routeing for all large construction vehicles accessing/egressing the site during the construction phase outlined below. All large vehicles would be expected to utilise this route, with no HGVs travelling to/from the west of the site. Large vehicles arriving at the site will be required to arrive via the following route:

- A90 – Longside Road (A950) – Tarred Road

3.2.2 The route back to the primary road network (described as travelling away from the site) is the above routeing reversed. The proposed construction traffic route is highlighted in purple within Figure 2.

Figure 2: Construction Traffic Routeing

Map Data: Google, Airbus, Maxar Technologies © 2025

3.2.3 Construction staff trips made by car and/or Light Goods Vehicles (LGVs) would also generally be expected to utilise the route outlined above to access/egress the site. However, it is acknowledged that there are not expected to be any constraints relating to cars/LGVs utilising other routes locally.

3.2.4 All relevant parties involved in making deliveries of construction materials, once the construction of the site commences, will be instructed on the above routeing arrangements before arriving/departing the site. This arrangement is to be strictly enforced, and all sub-contractors and suppliers are to be monitored to ensure that they use the defined route.

3.2.5 Distances to overhead structures or cables have not been measured and have generally been assumed to permit the safe passage of vehicle/load combinations up to 4.95m high, unless signing is in place indicating otherwise, in accordance with *'Prevention of Strikes on Bridges over Highways'* (NR, 2014). Any signed low bridges (i.e. with a headroom of less than 5.03m) have been noted within the route assessment. Similarly, the route assessment does not consider the load bearing capacity of any bridges or structures along the proposed route, although any signed weight limits have been noted.

3.3 Swept Path Analysis

3.3.1 Swept path analysis for the site has been undertaken as part of the TS (LTP, 2025) to establish whether the largest vehicles expected to access/egress the site can adequately navigate the site access, existing access track, Tarred Road, and the Tarred Road/Longside Road priority junction. The results of the swept path analysis demonstrate that AILVs/HGVs can adequately access/egress the site via the existing access track, Tarred Road, and the Tarred Road/Longside Road junction, subject to some minor widening/surfacing upgrades at the access track/Tarred Road junction, with the existing hedgerow on the eastern side of the access track to be suitably maintained during the construction period to ensure the full width of the existing carriageway can be utilised by large construction vehicles. Vehicles are expected to continue on the A950 before connecting with the TRN via the A90.

3.3.2 It is considered that if an AILV/HGV is able to traverse the identified access route between the site and the 'A' road network, then other smaller vehicles (e.g. LGVs) would also be able to adequately access and egress the site.

4. CONSTRUCTION PROGRAMME

4.1 Construction Programme

4.1.1 Whilst the exact timing details of construction/deliveries at the site are currently unknown, the delivery and construction/installation period of the proposed BESS is anticipated to take place over a 20-month period, and consist of six phases:

- ***Phase 1***: Site mobilisation, including access;
- ***Phase 2****:* Site civils and earthworks;
- ***Phase 3***: BESS equipment deliveries;
- ***Phase 4****:* Mechanical installation;
- ***Phase 5***: Electrical installation; and
- ***Phase 6***: Demobilisation and Site Clearance.

4.1.2 During the above construction period there would be trips associated with the arrival and departure of construction staff as well as the delivery of parts and construction materials.

4.1.3 The operating times for construction activities will be carefully managed. It is envisaged that construction activities will take place during suitable daytime hours across the week (Monday to Friday), in order to protect local amenity, possibly with some limited construction activity and HGV movements on Saturdays.

4.2 Construction Vehicle Details

4.2.1 Parts of the construction process will require the movement of materials and components to and from the site compound using HGVs. It is understood that the largest vehicle required to access the site during the construction period will either be an AILV or a standard articulated HGV, although the number of AILV movements is expected to be minimal.

4.2.2 In addition to the above, a number of smaller vehicles are expected to be used during the construction period. These are typically expected to be commercial vans and belong to members of the building trade (e.g. electrical/civils contractors).

4.3 Construction Phase Traffic Generation

4.3.1 The delivery and construction/installation period for the BESS is expected to last for approximately 20 months. Information provided by the Applicant indicates that construction traffic generation over this period will total approximately 5,070 two-way HGV movements (arrivals and departures).

4.3.2 Table 1 summarises the estimated HGV construction traffic based on information provided by the Applicant. Details of the average weekly and daily two-way HGV movements has also been presented.

Table 1: Estimated HGV Construction Phase Traffic Generation (Two-Way)

Month /Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Total	HGV Movements per week*	HGV Movements per day**	Number of staff on-site
1	320						320	74	15	8
2		310					310	72	14	8
3		310					310	72	14	8
4		310					310	72	14	8
5		310					310	72	14	9
6		310					310	72	14	9
7		310					310	72	14	9
8		310					310	72	14	9
9			160				160	37	7	9
10			160				160	37	7	9
11			160	130			290	67	13	12-15
12			160	130			290	67	13	12-15
13			80	130	140		350	81	16	12-15
14				130	140		270	63	13	12-15
15				60	140		200	47	9	12-15
16				60	140		200	47	9	12-15
17					140		140	33	7	12-15
18					140		140	33	7	12-15
19					140		140	33	7	12-15
20						240	240	56	11	12-15
Total	320	2,170	720	640	980	240	5,070			

**Based on an average of 4.3 weeks per month.

***Based on an average of 5 working days (Monday-Friday).

4.3.3 A maximum of 16 two-way daily HGV movements (8 HGVs) are expected to be generated during the construction period. It is expected that the maximum number of construction staff on-site will vary subject to the construction phase as outlined above, with a maximum of 15 staff expected to be working on site at any one time. Staff trips will be made by cars, minibuses or vans/small LGVs. Staff vehicle movements would typically occur at the start and end of the working day and generally not coincide with the movement of large construction vehicles.

4.3.4 Car sharing amongst staff is to be promoted and will be a realistic travel mode for those staff who are employed by the same service company/sub-contractor (for example, civils contractor, electrical engineer). Vehicle parking for site workers during all stages of construction will be accommodated on-site. No vehicles will park on the adjoining road network at any stage.

4.3.5 It is also noted that vehicle trips generated during the construction phase are temporary and would cease upon completion of the works at the site.

4.4 Post Construction

4.4.1 Generally, the BESS would operate on an unmanned basis. It is understood that the BESS development would generate approximately between 10 and 15 visits per month (20-30 two-way vehicle movements) to support site operations and general maintenance activities at the facility. These trips will be typically made by cars or LGVs (e.g. vans). Whilst the temporary construction compound will be removed following construction completion, space will be retained on-site for LGVs to turn around, ensuring vehicles can enter and exit in a forward gear.

5. TRAFFIC MANAGEMENT MEASURES

5.1 Introduction

5.1.1 Although the expected vehicle trip generation is expected to be relatively low (as identified in Section 4.3), there are a number of traffic management measures that are proposed to reduce the impact during the construction period, and these are outlined below.

5.2 Measures to Control Traffic Movements

5.2.1 A banksman would be on-site at the existing access track/Tarred Road junction and also at the A950/Tarred Road priority junction to manage all vehicle movements during the construction period. All vehicles would enter and exit the site in a forward gear.

5.2.2 Deliveries to the site are generally expected to occur on weekday daytime periods, which will ensure that construction activities at the site do not adversely impact on the operation of the local road network during peak periods. Deliveries will be made outside of the drop off and pick up times associated with local schools. Limiting site deliveries will also protect amenity for nearby residents living in properties along the construction route. Deliveries to/from the site will be pre-planned and scheduled to avoid conflicts and ensure that any impacts associated with construction traffic movements can be mitigated.

5.3 Measures to Reduce Conflict

5.3.1 As mentioned previously, a banksman will be available on-site at all times during the construction period to coordinate the movement of vehicles at the access track/Tarred Road junction, with a banksman also available at the Tarred Road/Longside Road priority junction. This will ensure that two large vehicles do not attempt to use the access track at the same time and therefore ensure that safety on the existing access track and the public road network is not compromised.

5.3.2 A daily delivery sheet will also be used to coordinate deliveries in order to avoid vehicles arriving simultaneously and is to be provided on a weekly basis to the construction supply chain so to mitigate against conflicting HGV movements along the proposed delivery route, with vehicles held on-site if required to avoid two-way HGV movements at the site access. All deliveries will be preplanned and staggered throughout the day to minimise the potential of conflict.

5.4 Parking Arrangements & Manoeuvring Facilities

5.4.1 Construction staff are likely to travel in cars or small vans and these trips would typically occur at the start and end of the working day and therefore not coincide with the movement of large vehicles. As previously outlined, car sharing amongst staff is to be promoted and expected to form a realistic travel mode for those staff employed by the same company.

5.4.2 Adequate parking provision will be provided in order to accommodate all operatives on-site. As such, an adverse impact on the operation of the surrounding road network is not envisaged.

5.4.3 The internal compound area is to be arranged in such a way that all delivery vehicles will be able to enter and exit in a forward gear, reducing the number of reversing manoeuvres that are required on-site.

5.5 Measures to Protect Pedestrians

5.5.1 There is no formal pedestrian infrastructure within the vicinity of the site, however, there may be some pedestrian movements utilising the local roads within Flushing for recreational purposes, with Formartine and Buchan Way accessible approximately 520m to the north of the site. Therefore, temporary signing/barriers will be provided to safeguard pedestrians where necessary. Furthermore, and as previously outlined, a banksman will direct large vehicles at the access track/Tarred Road junction and therefore ensure that any pedestrian movements are adequately protected within the vicinity of the junction.

5.6 Storage of Materials

5.6.1 All plant and construction materials are to be securely stored within the site compound when not in use and therefore will not adversely affect the operation of the public road network. As much waste as possible is to be recycled, and where possible vehicles delivering materials to site will leave with waste.

5.6.2 Contractors are to work with reference to best practice guidance including the '*Considerate Constructors Scheme – Code of Considerate Practice*' (CCS, 2017), which makes specific reference to minimising the impact of deliveries, parking and working within the public road network.

5.7 Road Cleaning Regime

5.7.1 Throughout construction, a suitable cleaning methodology, such as wheel wash facilities and/or a contracted road sweeper supplier, is to be employed at the site to reduce the risk of mud/dust/dirt being transported to public roads. Monitoring should be undertaken by the site manager in order to assess the cleanliness of the adjacent carriageway on an ongoing basis.

5.8 Measures to Control Noise, Dust & Dirt

5.8.1 The following measures are to be implemented by the Principal Contractor in order to avoid/reduce dust and noise pollution:

- Ensure that all materials transported to and from site are in enclosed containers or fully sheeted;
- Ensure materials have a minimum of packaging;
- Ensure all polystyrene and similar lightweight materials are weighted down;
- Making sure all dust generating materials are adequately packaged;

- Ensure loads are covered where spoil or demolition material is being removed;
- Ensure that the Tarred Road/Longside Road carriageway is suitably swept if required (see Section 5.7);
- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- Avoid site runoff of water or mud;
- Keep site fencing, barriers and scaffolding clean using wet methods;
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site;
- Ensure all vehicles switch off engines when stationary - no idling vehicles;
- Ensure equipment will be switched off when not in use;
- Use of enclosures and screens around noise sources; and
- Ensure no burning of waste and materials on site occurs unless otherwise justified.

5.9 Traffic Signing Strategy

5.9.1 It is recommended that a suitable temporary signing strategy be implemented to facilitate safe access to/from the site for construction vehicles associated with the development. The temporary signing strategy would be subject to AC Roads approval and be installed prior to the commencement of works at the site and maintained as necessary for the duration of the works.

5.9.2 A temporary signing scheme along the identified construction route will be provided along the key routes including Tarred Road, Longside Road and at the local junctions to advertise the construction route and warn other road users of the likely presence of construction vehicles making turning movements. No temporary Traffic Regulation Orders (TROs) are required in support of this strategy.

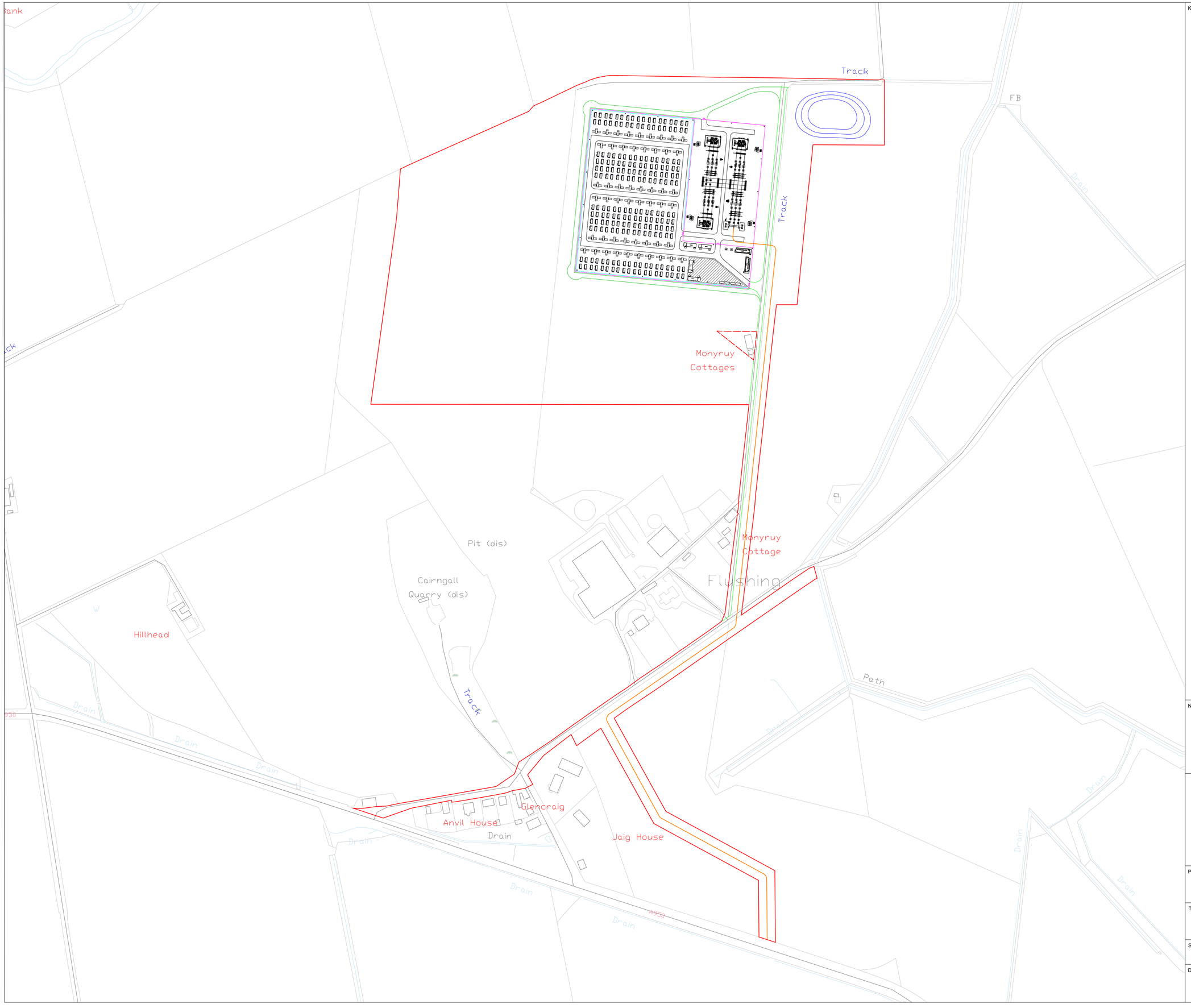
6. REFERENCES

CCS (Considerate Constructors Scheme), 2017. Considerate Constructors Scheme – Code of Considerate Practice.

LTP (Local Transport Projects Ltd), 2025. Proposed Battery Energy Storage System, Land North of Longside Road, Flushing. Transport Statement.

NR (Network Rail), 2014. Prevention of Strikes on Bridges over Highways – A Protocol for Highway Managers & Bridge Owners (Issue 2).

Appendix 1 – Proposed Site Layout



KEY:

- INTERNAL BESS ROAD
- EXTERNAL EMERGENCY ACCESS
- EXISTING SITE ACCESS
- STORAGE AREA
- LANDOWNER CONTROLLED, TO BE VACANT BY CONSTRUCTION PERIOD
- SuDS ATTENUATION POND
- RED LINE BOUNDARY
- 2.4m HIGH PALISADE FENCE
- 4.5m HIGH ACOUSTIC FENCE
- INDICATIVE CABLE ROUTE
- ACCESS GATES
- AUXILIARY TRANSFORMER
- BESS / KNAN TRANSFORMER / PCS
- CONTROL ROOM
- CCTV
- HV SWITCHROOM
- STORAGE CONTAINER
- TRANSFORMER

N

0m 50m 100m 175m

NOTES:

1. DESIGN INTENDED FOR PLANNING PURPOSES ONLY. NOT FOR CONSTRUCTION.
2. OS MAPPING PROVIDED BY STREETWISE.

HARMONY ENERGY
10 St James Business Park,
Grimbald Crag Court,
Knaresborough, HG5 8QD

PROJECT: FLUSHING

TITLE: PROPOSED SITE PLAN

SCALE:	DATE:	DRAWN:	CHECKED:
A0 @ 1:1500	19/06/2025	SW	HC

DRAWING NO:	REVISION:
PA_70_PSP	C