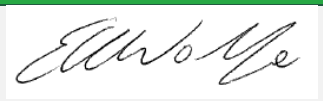
PROJECT DETAILS	
Client	Scottish and Southern Electricity Network (SSEN)
Project Title	Banniskirk 400kV substation
Project Number	1002-001578
Business Unit	Energy

MANAGEMENT PLAN

BANNISKIRK 400KV SUBSTATION
TRAFFIC MANAGEMENT PLAN (TMP)

ISSUE CONTROL		
CONTROL COPY NO.	ISSUED TO	JOB TITLE

APPROVAL			
			
David Bush **Senior Engineer** **02/04/2024**	**Andy Wolfe** **Quality Manager** **02/04/2024**	**Liam Cooke** **Senior Project Manager** **09/04/2024**	**Client Name** Job Title Click or tap to enter a date.
Main Author	**Reviewer**	**Approver**	**Accepted on behalf of Client (*if applicable*)**

DOCUMENT CONTROL		
DOCUMENT NUMBER	BANN4-LT407-JMS-XX-XX-PLN-Z-0001	
CURRENT REVISION	CURRENT STATUS CODE	SECURITY CLASSIFICATION
P03	S5	Project Confidential

REVISION HISTORY			
REVISION	STATUS CODE	DATE	DESCRIPTION OF CHANGE
P01		02/04/2024	Minor comments made and amended to suit
P02		18/07/2024	Updated Major Deliveries quantities to include HVDC converter station
P03		06/08/2024	Updated the Major Deliveries quantities

Controlled Copy Distribution List

CONTROLLED COPY NO.	JOB TITLE
01	
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Contents

1 Introduction

1.1 Purpose of the Traffic Management Plan

1.1.1 Murphy is undertaking works on behalf of Scottish and Southern Electricity Networks (SSEN) to design, construct, and commission a new 400kV substation in an area of agricultural land at Banniskirk, to the east of the A9. The existing Spittal 275kV substation is on the west side of the A9. The traffic route to the new Banniskirk site will be via the A9.

1.1.2 This plan addresses site specific risks and those associated with the movement of traffic and pedestrians, as well as identifying the necessary control measures to be employed and the rationale for their use.

1.1.3 This is a working document and will be reviewed six-monthly as a minimum or when there is a significant change in the operations and updated to reflect any changes in the work methodology.

Supporting Documents (refer to Appendix A for the full list):

- Traffic Management Schemes at Street Works and Road Works Procedure
- Traffic Management Checklist

1.1.4 Refer to Appendix B for a full list of Roles and Responsibilities associated with the implementation and compliance to the requirements outlined within this Traffic Management Plan.

Note: sign off may be via a wet signature or an electronic signature (whatever form the electronic signature takes e.g. through an e-signature app, or a scanned copy / photograph of a wet signature).

1.1.5 Refer to Appendix C for the site layout plan. Please note this is still to be drafted.

1.1.6 Refer to Appendix D for the traffic management risk assessment.

2 Project Details

2.1 Scope

A Construction Traffic Management Plan (CTMP) will be submitted for approval to the Highland Council to describe how the additional traffic generated due to the proposed construction works will be managed, with safety and improvement measures implemented so that the impact to the local area and persons will be minimised as far as is reasonably practicable. The works will be carried out in such a way as to maintain existing public access routes and rights of way during construction and keeping to a minimum the inconvenience to the public arising from increases in traffic flows and the disruption caused by construction traffic on local roads.

2.2 Project Particulars

No.	Particular	Detail
2.2.1	**Project Name**	Banniskirk 400kV substation
2.2.2	**Murphy Project Number**	1002-001578
2.2.3	**Client Project Number**	LT407
2.2.4	**Address and Telephone Nos. of Site Office(s)**	Fyrish House, Teaninich Industrial Estate, Alness, IV17 0PH
2.2.5	**Site Operating/working Hours**	To be determined
2.2.6	**Client**	Scottish and Southern Electricity Networks
2.2.7	**Contract Start Date**	2025
2.2.8	**Contract Completion Date**	2031
2.2.9	**Duration (Years)**	6

No.	Particular	Detail
2.2.10	**Scope of Works**	Temporary site compound establishment Permanent access track construction Construction of a civil platform to allow installation and commissioning of a new 400kV substation. Associated drainage infrastructure installation Construction of a civil platform for a new HVDC Converter Station Building and installation of new HVDC Converter Station Building structure

2.3 Location

2.3.1 The Traffic Management location(s) are displayed within the Site Layout Plan in Appendix C and the traffic management information is contained within the Traffic Management Risk Assessment are contained within Appendix D.

Refer to Risk Assessment Template

3 Description of Activities Undertaken within Site

3.1.1 The following activities that are undertaken within the site with details on how they could impact Traffic Management.

- Plant repair and Maintenance.
- Plant washing.
- Storage of materials (hazardous and non-hazardous) including Stores.
- Loading & unloading of materials and plant (Mechanical & Manual)
- Vehicle movement and parking
- Lifting operations
- Security
- Re-fuelling
- Third parties working on the project.
- Septic tank emptying
- Facilities management

3.1.2 As far as reasonably practicable a one-way system within the compound areas (or a designated turning area) will be provided. All traffic must turn inside compounds before exiting and must exit forwards. The sounding of reversing alarms on road vehicles will not be permitted outside normal working hours. For vehicle movements out with these times, hazard lights will be used with the vehicle reversing under the direction of a vehicle banksman. Reversing cameras are to be utilised where available when reversing.

4 Personal Protective Equipment Requirements

4.1.1 The following is the minimum PPE requirements in the work and non-work area:

Work Area

- Safety footwear (with toe and midsole protection, no rigger boots)
- Gloves
- Eye protection
- Hi-visibility clothing.
- Hard hat

Non-work Area

- Safety footwear (with toe and midsole protection, no rigger boots)
- Hi-visibility clothing.
- Gloves

5 Access and Egress

Access to the site is off the A9 approaching from both the southern and northern directions. There is a wide junction to the east side of the A9 joining a single-track road that travels towards a working quarry at Banniskirk. On approach to Banniskirk quarry (a site of special scientific interest), the proposed development site is on the left-hand side in what is currently agricultural land.

Priority will be always given to the public – vehicle banksmen will control plant/vehicle movements and will stand down plant to allow public and animals passage.

The only access route to site for construction traffic will be shown as below. This will be clearly communicated to all personnel, delivery drivers, site visitors etc. as being the only permitted route to site. The use of the railway at Georgemas Junction which is nearby and the harbour at Wick will be prioritised to divert material transport off the A9 and therefore minimise disruption to the area.

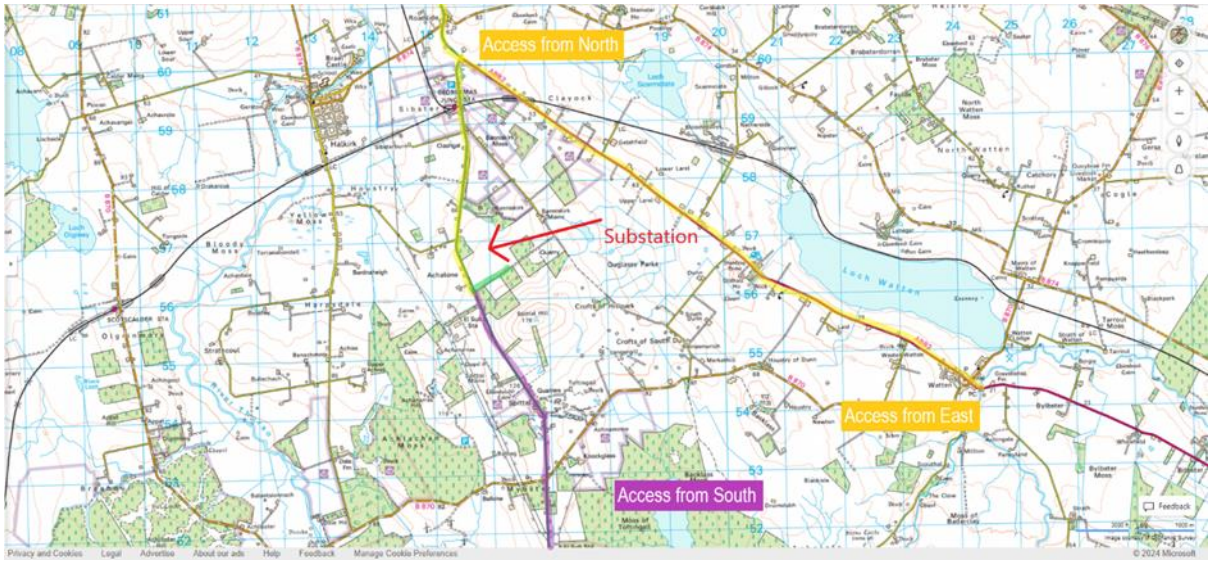

Figure 1: Proposed access route.

Figure 2: Existing junction to proposed site from the South.

5.1.1 On the route and particularly when entering villages and residential areas, vehicles will slow down when passing pedestrians, cyclists and horse riders and pass with caution. Additional safety measures will be deployed for example, escorting wide and heavy loads with supervised traffic management as and when required to ensure that the local

village is protected. Once the wide and heavy load has completed its return journey, then these additional measures will be taken away to minimise disruption. All temporary and diverted pedestrian walking routes will be maintained in an even and level condition, kept free from mud and debris, so far as is practicable. Clear diversion signage will be provided where required.

5.2 Access Hazards

Access Point	Hazards
1. A9	Change in speed limits, especially when entering villages
2. A9/A99 Latheron	Junction to take to remain on A9 and not continue onto A99
3. A9 Mybster	Junction at Mybster
4. A9 Banniskirk	Bellmouth junction to proposed site, visibility splays

5.3 Existing Conditions

Access Point	Hazards
1. A9 	High speed traffic on A9 and change in speed limits
2. A9/A99 junction Latheron 	Overhead cables heights to be checked and recorded
3. A9 Mybster 	Mybster junction
4. Existing access track into new substation 	The existing bellmouth junction to proposed site, visibility splays

The main access point will be Access point 4, to enable vehicles, plant, and pedestrians' entry to the site access road from the A9. This access point will be notified to oncoming traffic by advance warning signage in accordance with Chapter 8 of the Traffic Signs

Regulations and General Directions 2002. All traffic will follow the designated one-way system. Office traffic will be directed into the office car park and all plant/delivery vehicles will be directed into the compound/plant storage area. Vehicles will reverse park into designated parking bays. Pedestrians wishing to gain access to the main site from the site compound will follow the designated segregated footpaths.

During construction works all personnel will be aware of the potential for pedestrians and advised to stop or slow down where necessary.

5.4 Maintenance Repairs and Alterations to Public Road

5.4.1 Murphy will take every possible precaution to prevent damage to the road network caused by our construction activities.

5.4.1.1 Pre- start Condition Survey

A pre-start road condition survey has been carried out prior to commencing any work. A course visual inspection (CVI) survey was carried out in accordance with the UKPMS Visual Survey Manual Chapter 7. The video survey identified and recorded the following defects:

- CVI Wheel track cracking
- CVI Wearing course deterioration (major cracking)
- CVI wearing course deterioration (potholes)
- CVI settlement
- CVI Edge Deterioration

Further to the CVI survey, a photographic survey will be undertaken and incorporated within a survey report.

5.4.1.2 Construction period wear and tear

During construction the A9 public road will be inspected regularly by Murphy and SSE Site Manager to determine any deterioration in the road condition. A record of these inspections shall be maintained on site, confirming the date of the inspection, details of the defects and the date and time of corrective repair work. This record shall be subject to audit by Highland Council at any time.

Very minor repairs e.g. cold tar repairs of small potholes <1 sqm taking less than 30 minutes can be classed as minor works (mobile and short duration) and do not require noticing under the New Roads and Street Works Act. Reference should be made to the Scottish Government publication 'Code of Practice for the Co-ordination of Works in Road' for further information. All other works will need permits from Highland Council/BEAR Scotland under the Road (Scotland) Act.

5.4.1.3 Post works condition survey.

Following completion of the works, a final road condition survey shall be carried out. The inspection report shall record all areas that have deteriorated since the start of the works and detail proposed repair measures. The proposed repairs and timescale for these shall be agreed and carried out to the satisfaction of Highland Council.

6 Stakeholders

6.1.1 Provide a description here of any significant local affected parties.

6.2 Key Stakeholders

Access Point	Organisation	Tel. Number	Email
4	SSEN	*Tel: 01463 728049*	TBC
4	Highland Council Road Department	*Tel: 01349 886601*	TBC

6.3 Village Schedule

Village / Town / Road	Speed Limit (MPH)	School Name	Pedestrian Crossing	Email
Latheron	40	*N/A*	Yes, at A9/A99 Junction	Email
Mybster	60	*N/A*	No	Email
Spittal	60	N/A	No	Email
Georgemas	60	*N/A*	No	Email

7 Traffic Control Measures

7.1.1 All traffic will comply with the designated and agreed traffic routes.

7.1.1.1 Speed limits will be strictly adhered to. A reduction in speed will be reinforced at inductions when approaching areas of poor visibility and sharp bends. A Murphy delivery yard will be deployed to receive deliveries, so that the material can be offloaded, inspected, and approved for onward delivery to the site under Murphy control and direction.

7.1.1.2 Access restriction:

All construction traffic shall flow from the A9 to access site. Any restrictions will be advised by the Highland Council. Due to the site being accessed off the A9 and in a rural area. There are no foreseen restrictions.

7.1.1.3 Emergency access:

Access to/through all work sites will be kept free to allow access for emergency vehicles to pass.

7.1.1.4 Engine idling:

All parked vehicles waiting to enter work sites or compound will be required to switch off their engines. All plant will be switched off when not in use.

7.2 Security Checkpoints

7.2.1 The main site access will be manned during working hours to monitor and maintain a log off all personnel arriving on site. Security personnel will be responsible for directing the personnel to the correct location. Gates at authorised access points will be locked when the site is closed. This rule will be reiterated to project staff and contractors during site inductions and daily briefings. For emergency purposes a sign showing a 24-hour contract number will be displayed.

7.2.1.1 Any fencing/hoarding located near junctions will not limit visibility in either direction. The Highland Council and SSEN will be consulted prior to setting up this access point.

7.2.1.2 Mud on the road.

Murphy will ensure that public roads and drainage systems are kept reasonably free of mud and loose material resulting from construction works. This will be achieved through the provision of a road brush employed at the access point and high traffic areas as and when required. Also, wheel wash facilities will be installed during the main works.

7.2.1.3 Passing Places.

Proper conduct in the use of passing places will be observed by all site traffic. Drivers behind site traffic will be allowed to overtake at the nearest passing point. Priority will be given to vehicles coming uphill. When passing pedestrians (and dog walkers), cyclists and horse riders, drivers will slow down and pass cautiously. The same applies for agricultural vehicles and livestock.

7.2.1.4 Right of way

To minimise the disruption to the local roads network, the traffic entering the main site entrance on to the access road should be given priority over that exiting the site. Access and egress will be controlled and monitored by the site gate person. Similarly for all satellite compounds, right of way shall be given to the local road users.

7.2.1.5 Air quality

To minimise the effect on air quality and health during the works, the following measures will be implemented.

- All vehicles carrying dry spoil or other waste will be covered.
- Vehicle speeds will be restricted to 10mph when driving on temporary access or unsurfaced roads.
- Wet suppression on temporary access roads during periods of dry weather.
- Road brush used at access road and areas of high traffic when required.
- Wheel wash facilities installed during main works construction.
- Vehicles and plant will be turned off when parked.
- Vehicles will be serviced regularly.

7.3 Security Requirements

7.3.1 Security will:

- Book in/ out all deliveries
- Issue the driver with the site "Health and Safety Information Permit".
- Contact by radio the Murphy site team, who will send the relevant person to receive the delivery.
- Ensure the delivery vehicle remains stationary, until the site representative arrives at the security location to escort it to the off-loading point.
- All vehicles shall be escorted while on site by the site representative (trained banksman / vehicle marshal)
- Warning beacon to be switched on when entering site.
- Upon dismounting from vehicle, full PPE shall be worn.

7.4 Parking

7.4.1 To minimise inconvenience, adequate car parking for permanent site staff, visitors and deliveries will be provided within the site compound. If vehicles associated with the works are to park on local roads or verges, then this must be agreed prior to with the SSEN due to landowner consents. If parking on local roads, then vehicles will do so to not restrict or provide obstruction to any passing traffic. Any satellite site compounds that are set up to facilitate any road maintenance works will have adequate parking facilities to ensure vehicles are not parked on the public highway. All gates to these compounds will be closed and locked when not in use. Satellite compound will be under the control of the site foreman. The requirement and location of these compound will be assessed on site during the works. The construction and maintenance of all compounds will be controlled under specific activity plans and risk assessments.

7.4.1.1 All vehicles MUST be reversed parked.

7.5 Deliveries

7.5.1 All deliveries must be co-ordinated with the Site Manager. All deliveries must follow the approved route to the site as shown in Appendix C.

7.5.2 Deliveries will be registered at the access gate providing details of the journey starting point. A copy of the delivery ticket is to be passed to the On-site Material Coordinator to be retained for Goods Receipt and Inspection

7.5.3 Multiple or early deliveries must wait on the access track until there is suitable parking to be had within the Murphy delivery and laydown yard.

7.5.4 All deliveries must be met at the gate and escorted to the work location. No delivery vehicles may reverse without a competent banksman or vehicle marshal in attendance.

7.6 Major Deliveries

7.6.1 The following are the main anticipated deliveries:

Delivery Type	Type of transport	Number of Deliveries (approx..)	Logic
Excavators & construction equipment	Articulated low loader/ Trailer	250	Low loader (392+108 = 500) (500/2=250)

Delivery Type	Type of transport	Number of Deliveries (approx..)	Logic
Construction materials – drainage/ducting	Articulated trailer/ Hiab truck	11467	Flat Bed & Tipper ((3114+5240) +(4780+10000)=23134) (23134/2 =11567)
Ready mix concrete (delivery only)	6m^{3}cement mixer	5586	Concrete ((2840+8332)/2)=11172)
Site accommodation units	Articulated trailer/ Hiab truck	100	Flat Bed ((3114+5240)/2 =4117)
Site personnel to/from accommodation	Car/Van	124685	Staff & Van (((56320+29920)+(137060+26070)) = 249370) (249370/2 = 124685)
Small tools & equipment	Small to medium sized truck or van	11700	Medium Wagon (21690+4600 =26290) (26290/2 = 13145)
Toilet/Septic tank servicing	Small to medium sized truck/tanker	145	Medium Wagon (21690+4600 =26290) (26290/2 = 13145)
Transformer delivery vehicles	From supplier info	20	Abnormal Indivisible Load 6 + 14
400kV plant delivery	Articulated trailer/ Hiab truck	900	Medium wagon (21690+4600 =26290) (26290/2 = 13145)
Protection and Control Delivery (incl. Telecoms)	Curtain sided/Hiab truck	200	Medium wagon (21690+4600 =26290) (26290/2 = 13145)
Batteries and LVAC	Curtain sided/Hiab truck	200	Medium wagon (21690+4600 =26290) (26290/2 = 13145)

Activity	Expected Duration
Welfare	2025
Major earthworks	January 2026
Concrete delivery	2026 - 2028
Super grid transformers	2028
Syncom units	2028
Crushing grading plant	January 2026 - 2027
Primary plant	2027
Secondary plant	2027
Commissioning	2028

Site	AIL	Low loader	Tipper	Flat Bed	Staff	Van	Concrete	Medium Wagons
Carnaig 400kV	12	536	4780	3300	58080	135960	3160	23450
Banniskirk 400kV	12	392	4780	3114	56320	137060	2840	21690
Banniskirk HVDC Converter Station	28	108	10000	5240	29920	26070	8332	4600

Estimated total two way vehicle movements for each site

Rail freight will be utilised where it is possible to divert deliveries off the A9. Georgemas Junction has railway infrastructure in place. The harbour at Wick has infrastructure to facilitate material handling from shipping.

7.7 General Delivery Routes

7.7.1 To ensure effective communication to the supply chain a simple induction pack will be developed. This pack will include:

- Details of the preferred access to the Murphy site
- Working hours of the Murphy site
- Nearest Emergency Hospital
- Zero tolerance approach on site – speed / mobile phones / drugs and alcohol
- Site Do's and Don'ts
- PPE requirements
- Compliance requirements
- A copy of a Traffic Management Plan. This will be passed onto delivery services or major equipment freight forwarders as the route will become busy during certain hours of the construction phase.

8 Control of vehicle Movement within the Site

8.1.1 Vehicle movements will be controlled as per the site-specific compound layout. One-way routes and parking areas with reverse parking only, segregated pedestrian routes and segregated material delivery laydown areas are some of the physical characteristics to the compound layout which will control vehicle movement.

Please refer to the site layout plan as shown in Appendix C

8.2 Pedestrian and Vehicle Interface

8.2.1 Pedestrian and plant interface will be at crossing points for example at the site access point and from the main compound to the working area.

8.2.2 These crossing points will be clearly marked on the road with physical pedestrian barriers to highlight and make visible to drivers a crossing point is present. Site speed limit will be 10mph and warning signage will be erected in advance in either direction.

8.3 Vehicle Inspections

8.3.1 Various safety features are required to be fitted to any vehicles working on the Murphy project to provide the maximum possible safety for pedestrians and cyclists sharing the road with our vehicles. These requirements will be forwarded to suppliers by the Procurement team when orders are placed so that the suppliers are aware of the need to use compliant vehicles and what the compliance requires.

8.3.2 Additionally, to ensure that these standards are being adhered to, Murphy will be adopting an intermittent checking system for vehicles.

9 Reporting

9.1.1 An open-door policy is in place to report any defects, safety concerns, health and safety breaches and improvement suggestions. All communications shall be recorded by Murphy and shall be acted upon accordingly.

9.1.2 Planned and unplanned workforce engagements shall be carried out. Murphy encourages engagement with the workforce and contractors to discuss any safety issues on the site and to identify good practice.

10 General Arrangements

GUIDANCE

Refer to the Murphy Visual Standards:

SCAN ME

APPENDIX A

APPENDIX A – List of Applicable Standards and Procedures

PROCEDURES	
0000-JMS-ZZ-XX-PD-Z-0295	Traffic Management Schemes at Street Works and Road Works
0000-JMS-ZZ-XX-PD-Z-0131	SHES Operations (incl. Risk Assessments, Method Statements and Permits)
0000-JMS-ZZ-XX-FM-Z-2003	Traffic Management Checklist
0000-JMS-ZZ-XX-FM-Z-0009	Risk Assessment Template

LEGISLATION AND REGULATIONS
Safety at Street Works and Road Works – Code of Practice issued by the Department of Transport
Traffic Signs Manual Chapter 8 Roadwork's and Temporary Situations (2006) Part 1: Design
Traffic Signs Manual Chapter 8 Roadwork's and Temporary Situations (2006) Part 2: Operations
Traffic Signs Manual, Chapter 8: 2nd Impression 2007 – Amendments
Traffic Signs Regulations and General Directions 2002; as amended
Road Traffic Regulation Act 1984 and Local Authorities Traffic Orders (Procedure) (England and Wales) Regulations 1996
New Roads and Street Works Act 1991
Traffic Management Act 2004
Disability Discrimination Act 2005
An introduction to the Use of Portable Vehicular Signals, Department for Transport, March 2008
Works Information
Transport Scotland Transport Assessment Guidance 2012
Highland Council Guidance on the preparation of Transport Assessments November 2014

APPENDIX B

APPENDIX B – Roles and Responsibilities

ROLE	OUTLINE RESPONSIBILITIES	RESPONSIBLE PERSON (list name/s here)
Project Manager	Has the overall responsibility to ensure that the traffic management plan is implemented, reporting to the Construction Lead (position that leads the overall construction process).Information is distributed to Murphy personnel and the Project Manager ensures compliance with the traffic management requirements of this and/or any third-party Traffic Management Plan, management of personnel and coordination with the construction team and Highway Authority. Approval of method statements, contractual requirements, compliance and contact with external parties.	
Lead Traffic Marshal	Responsible for assisting in the monitoring and compliance with the traffic management requirements of this procedure, management of personnel and coordination with the construction team. The Lead Traffic Marshal will also provide technical advice to construction teams and will be present on site at all times and also has an overarching responsibility to assist TM arrangements for deliveries to site.	
Traffic Marshal	Responsible for carrying out the traffic management plan, assisting in the monitoring and compliance with the traffic management requirements of this plan. To hold the relevant training and competency, i.e. NPORS Plant Machinery and Vehicle Marshal or similar approved qualification.	
Construction Manager	Ensures that the Traffic Management Plan is implemented on site by those listed above. The Construction Manager shall ensure that traffic management schemes are compliant at the beginning and end of a day or shift.	
Security	Control the entry of vehicles to the site. Ensure all persons entering and exiting the site sign in/out.	
All employees	All persons entering the site are responsible for their own safety and compliance with this plan.	

APPENDIX C

APPENDIX C – Site Layout Plan

To be included as required

APPENDIX D

APPENDIX D – Traffic Management Risk Assessment

Associated Policy / Procedure:	0000-JMS-ZZ-XX-PD-Z-0295_ Traffic Management Schemes at Street Works and Road Works

Traffic Management Daily Check	
Conducted by:	
Date and Time:	
Work area monitored:	
Contractor(s) Observed: (if applicable)	

Guidance Notes:
This checklist is to be completed as soon as possible by the Team Leader/ Supervisorfollowing the Traffic management Scheme set up, then at the start and end of every shift for the duration of the Traffic Management Scheme being in place.
1 - Non-Compliance – defects not able to be corrected, works stopped until the defect can be corrected, works assessed if it can continue without causing harm, report to the Project Manager, Team Leader / Supervisor and SHES Team.
2 - Non-Compliance - assess whether works should be stopped, defects required to rectified within 48 hours and addressed with the supervisor and site manager.
3 - Non-Compliance - assess whether the works should be stopped – Improvements required within 72 hours and addressed with the supervisor.
4 - Compliant
5 - Good Practice
Not Applicable

	QUESTIONS	STATUS	COMMENTS / ACTIONS	OWNER (name)	DATE CLOSED
1	Are all signs present, according to the Traffic Management Drawing?				
2	Are the taper lengths adequate, according to the Traffic Management Drawing?				
3	Are traffic cones and bollards upright, secure, correctly spaced and neatly aligned?				
4	Are all signs and devices placed such that they are clearly visible to approaching drivers and other road users both day and night?				
5	Do the traffic control devices meet the requirements for retro-reflectivity?				
6	Have all road users been considered including trucks (the view from height), pedestrians, cyclists, motorcyclists and buses?				
7	Are redundant permanent signs (eg traffic lights) temporarily covered up?				
8	Are road users complying with the temporary speed limits? If not can something be done to on site to encourage speed compliance? If not, report non-compliance to Senior Management and the Highways Authority.				
9	Is there appropriate street lighting or other lighting provided at the roadworks to ensure that it is lit at night?				
10	Are Temporary Traffic Lights (where applicable) working with no evident damage?				
11	Are there Pedestrian Lights in use? Is the Pedestrian (Green Man) phase				
12	Are there Traffic Lights in use? Is the Traffic (Green Light) phase approximately				
13	Is there a safe method of controlling traffic if the TM system fails ? Is there an emergency call out in case of wipe outs?				
14	Are Work Site entrances and exits safely located with adequate sight distance?				
15	Are all signs and devices placed such that they do not adversely impact access to properties and other road users (pedestrians, cyclists and the disabled)?				

Project	**Banniskirk substation**			**Client**	**SSEN**						
Project No.	**1002-001578**			**Risk Assessment No.**			**TMP-RA01**				
Activity	**Traffic management route to Banniskirk**										
Activity affecting *(Tick Appropriate Box)*	**Employee**	✓	**Third Party**	✓	**Vehicle**	✓	**Plant**	✓	**Environment**	✓	**Likelihood X Consequences**

No.	Hazard	Possible Consequences	Pre- Control			Control Measures	Post-Control		
			L	C	RR		L	C	RR
1	General public - pedestrians, horse riders, dog walkers, dogs, children	Severe Injury even death due to a collision	5	5	25	Drive with due care and caution. Use passing places where available. Slow down and stick to the national speed limits and keep to 20mph in designated areas. Give priority to the public. Plan the route ahead in advance, watch out for junctions' vehicles entering the A9. No use of mobile phones when driving. Deliveries to be controlled by Murphy with a material facility yard to allow deliveries to be planned and not unexpected. Reverse parking in the site compound One way traffic in the site compound with designated loading bay areas for material on/offloading Escort vehicles to guide large heavy loaded wagons and Chapter 8 traffic management installed with personnel supervising the traffic management. A copy of the traffic management plan is to be forwarded onto transport forwarders and delivery companies.	3	2	6
2	Bellmouth junction to proposed site	Poor visibility at the new junction would create a traffic collision	3	4	12	New junction to be designed and constructed to allow full visibility at either side and approved by Highland Council/SSEN standard detail drawings. Traffic management approved by Highland Council/BEAR Scotland and in accordance with Chapter 8 Regulations to be installed.	2	1	2
3	Existing infrastructure conditions	Poor carriageway conditions leading to road traffic incidents and severe injury	3	4	12	Existing infrastructure along the proposed route to be examined and recorded as a pre-construction CVI survey. The route is to be regularly monitored for any signs of deterioration. A post construction CVI survey will be completed. Advance desktop checking of road conditions. Ensuring that vehicles are in roadworthy condition	2	2	4
4	Fallen trees due to inclement weather	Road traffic incidents and severe injury	3	4	12	Checking of the weather forecast and local road network conditions prior to making the journey. Driving with care and caution, forward planning ahead and assessing the road conditions	3	2	6
5	Pollution	Nuisance and long-term health damage	3	3	9	Delivery journey times to be controlled to within agreed working hours. Vehicles to be serviced and maintained regularly. Heavy loads to be planned and communicated to the local community in advance with approved traffic management installed. Delivery of materials to be prioritised by rail or sea	2	2	4

Likelihood of Occurrence	Score	Consequence of Occurrence	Risk Rating		Action
Very Unlikely	1	Insignificant / E.g. Non- Lost Time Incident (212 – Cat. 1)	Low	1 - 5	Works may proceed
Unlikely	2	Minor / E.g. Non-Reportable Incident (212 – Cat. 2)			
Possible	3	Moderate / E.g. Reportable Lost Time Incident (212 – Cat. 3)	Medium	6 - 12	All reasonably practicable measures in place and the point of work risk assessment captures further controls as required. Works may proceed with caution.
Likely	4	Major / E.g. Reportable Incident– Permanent Disability (212 – Cat. 4)	High	13-25	Unacceptable. Do not proceed until further controls are in place and risk has been reduced with all controls in place.
Almost Certain	5	Catastrophic / E.g. Fatality (212 – Cat. 5)			

Compiled By					
Name:	**David Bush**	Signature:		Date:	**02/04/2024**
Approved by					
Name:		Signature:		Date:	

Risk Assessment Review required (*Approver to decide review period)*	**Date:**		**Rev:**	

CONTRACT NAME:	Document Number
LT407 BANNISKIRK SUBSTATION	BANN4-LT407-JMS-XX-XX-PLN-Z-0001
	ENTER ABOVE NO. ON TRANSMITTAL REGISTER AND FILE IN TRANSMITTAL FILE

ISSUED BY:		POSITION:	
SIGNATURE:		DATE:	

DOCUMENT NUMBER	DOCUMENT TITLE	REV	FOR
	Traffic Management Plan		

* Documents are for your (R) Review / Comment (A) Approval (I) Information (C) Construction or Implementation

Please confirm that superseded documents are (1) Destroyed (2) Marked Superseded (delete as applicable)

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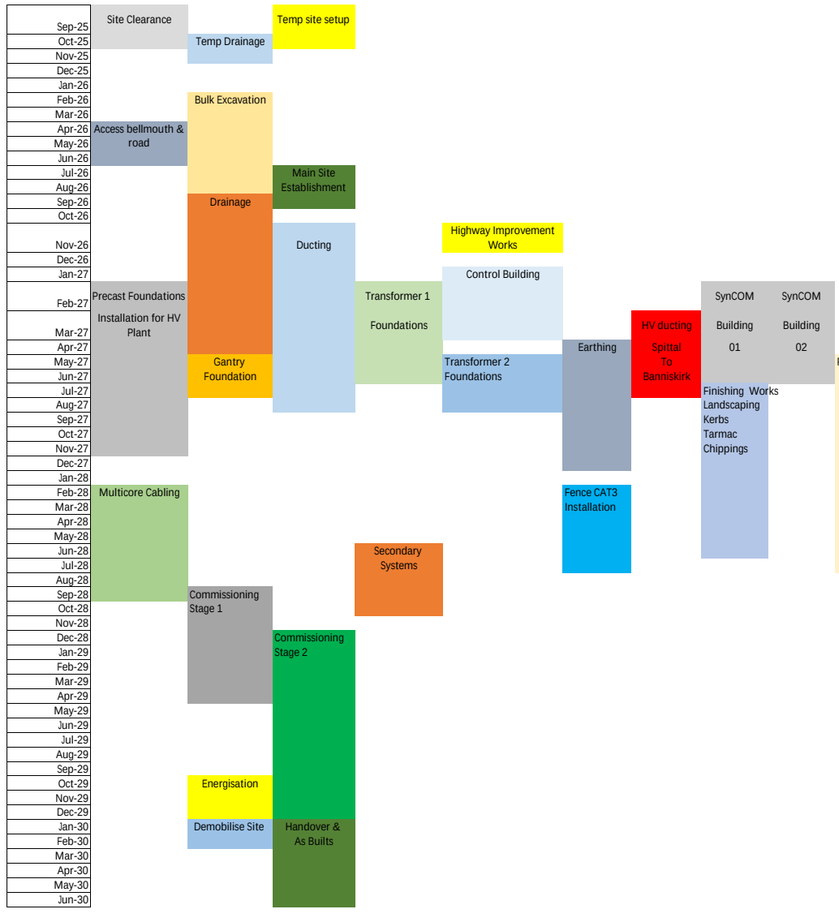
APPENDIX E



Banniskirk Vehicle Count per month (two way movements)

Month	AIL	Low Loader	Tipper	Flat Bed	Staff	Van	Concrete	Medium Wagon
Sep-25		12	20	100	1100	1100	40	110
Oct-25		12	40	160	1100	1100	40	110
Nov-25		8	80		1100	1320	40	110
Dec-25		8	100		1100	1320		110
Jan-26		8	100		1100	1320		110
Feb-26		40	100	100	1100	1320	40	110
Mar-26		8	100	100	1100	1320	40	110
Apr-26		8	100	100	1100	1320	40	110
May-26		8	100	100	1100	1320	40	110
Jun-26		8	100	100	1100	1320	40	660
Jul-26		8	100	100	1100	1320	40	660
Aug-26		8		100	1100	3300	40	660
Sep-26		40		80	1100	3300	40	660
Oct-26		8	40	80	1100	3300	40	660
Nov-26		8	40	80	1100	3300	40	660
Dec-26		8	40		1100	3300	40	660
Jan-27		8	40		1100	3300	40	660
Feb-27		8	40	130	1100	3300	200	660
Mar-27		8	40	130	1100	3300	200	660
Apr-27		8		130	1100	3300	200	660
May-27		8		130	1100	3300	200	660
Jun-27		8		130	1100	3300	200	660
Jul-27		8		130	1100	3300	200	660
Aug-27		8		130	1100	3300	200	660
Sep-27		8	400	130	1100	3300	200	660
Oct-27		8	400	130	1100	3300	200	660
Nov-27		8	400	130	1100	3300	40	660
Dec-27		8	400		1100	3300	40	440
Jan-28		8	400		1100	3300	40	440
Feb-28	12	8	400	88	1100	3300	40	440
Mar-28		8	400	88	1100	3300	40	440
Apr-28		8	400	88	1100	3300	40	440
May-28		8	400	88	1100	3300	40	440
Jun-28		8		88	1100	3300	40	440
Jul-28		8		80	1100	3300	40	440
Aug-28		24		80	1100	3300	40	440
Sep-28		8			880	3300	40	440
Oct-28		8			880	3300		440
Nov-28					880	3300		440
Dec-28					880	3300		440
Jan-29					880	3300		440
Feb-29					880	3300		220
Mar-29					880	3300		220
Apr-29					880	3300		220
May-29					880	1320		220
Jun-29					880	1320		220
Jul-29					880	1320		220
Aug-29					880	1320		220
Sep-29					880	1320		220
Oct-29					880	1320		220
Nov-29					880	1320		220
Dec-29					880	1320		220
Jan-30					440	1320		40
Feb-30				14	440	440		40
Mar-30					440	440		40
Apr-30					440	440		40
May-30					440	440		40
Jun-30					440	440		40
Total vehicle co	12	392	4780	3114	56320	137060	2840	21690

Based on 25 members of staff on site for 22 days a month at peak	Based on 150 site members on site van sharing for 22 days/ month at peak		Based on medium wagon delivery vehicles PPE, Fuel, Consumables etc. servicing site at peak 15 wagons daily

HV DC Building (two way movements)

Month	AIL	Low loader	Tipper	Flat Bed	Staff	Van	Concrete	Medium Wagons
Sep-25								
Oct-25								
Nov-25								
Dec-25								
Jan-26								
Feb-26								
Mar-26								
Apr-26								
May-26								
Jun-26								
Jul-26								
Aug-26								
Sep-26								
Oct-26			20	400	200			200
Nov-26			2	400	200			200
Dec-26			2	400	200	220	495	200
Jan-27			2	400	200	440	495	200
Feb-27			2	2000	200	660	495	200
Mar-27				2000	200	1100	1540	200
Apr-27				2000	200	1100	1540	2084	200
May-27				1400	200	1100	1540	2084	200
Jun-27			20	1000	320	1100	1540	2082	200
Jul-27			2		320	1100	1540	2082	200
Aug-27			2		320	1100	1540		200
Sep-27			2		320	1100	1540		200
Oct-27					360	1100	1540		200
Nov-27					360	1100	1540		200
Dec-27					240	1100	1540		200
Jan-28					200	1100	1540		200
Feb-28	28	54			200	1100	1540		200
Mar-28					200	1100	1540		200
Apr-28					400	1100	1540		200
May-28					400	1100	1540		200
Jun-28						1100	495		200
Jul-28						1100	495		200
Aug-28						1100	495		200
Sep-28						1100			
Oct-28						1100			
Nov-28						1100			
Dec-28						1100			
Jan-29						1100			
Feb-29						1100			
Mar-29						1100			
Apr-29						1100			
Total	28	108	10000	5240	29920	26070	8332	4600

Waiting on clarification from designers on net import for stone platform. Therefore figures are best guess	Based on 5,500t of steel at 15t per load = 366 loads for steel which equates to approx 60 steel wagons per month. Cladding is assumed as 20 wagons per month. HV Plant is assumed as 200 wagons per month for the two month duration.	Based on 25 members of staff onsite 22days a month. Commissioning phase 9 months duration also based on 25 members of staff on site for 22days a month.	Based on site members of 70 onsite for 22 days a month.	Based on 25000m3 (worst case based on building size of 33,160m2 x 0.75m deep) delivered with 6m3 wagons = 4166 wagons	Based on medium wagons for deliveries e.g. PPE, Fuel, Consumables etc.

Combined Carnaig & Banniskirk (two way movements)

Site	AIL	Low loader	Tipper	Flat Bed	Staff	Van	Concrete	Medium Wagons
Carnaig 400kV	12	536	4780	3300	58080	135960	3160	23450
Banniskirk 400kV	12	392	4780	3114	56320	137060	2840	21690
Banniskirk HVDC Converter Station	28	108	10000	5240	29920	26070	8332	4600