POWER FOR GOOD

Steeple Renewables Project

Appendix 4.5 – Outline Design Principles

Environmental Statement - Volume 2

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Appendix 4.5 – Outline Design Principles

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1.1 Introduction

1.1.1 This Outline Design Principles document supports an application for a Development Consent Order (DCO) for the construction, operation, and decommissioning of a ground mounted solar photovoltaic (PV) electricity generation station with a capacity of over 50 Megawatts (MW) and associated development comprising of energy storage and grid connection infrastructure (hereafter referred to as "the Proposed Development") on land at Sturton le Steeple (hereafter referred to as "the Site"), in accordance with the EIA Regulations and the Planning Act 2008.

1.1.2 This document sets out the design principles which the Proposed Development has been designed, and the Environmental Impact Assessment (EIA) has been undertaken. It will be secured by a Requirement in Schedule 2 to the draft DCO in order to prescribe the guiding design principles and parameters to inform the detailed design of the Scheme post DCO consent.

1.1.3 This document should be read alongside the submitted **Design and Access Statement** [**EN010163/APP/7.3**], which sets out the main design principles and design process undertaken for the Proposed Development and Environmental Statement (ES) **Chapter 4: Proposed Development** [**EN010163/APP/6.2.4**].

1.1.4 The spatial extent of the Proposed Development is referred to as the 'Order Limits' and is shown on the **Works Plans** accompanying the DCO application [**EN010163/APP/2.2**] which are secured by Article 3 of the **Draft DCO** [**EN010163/APP/3.1**]. The EIA presented in the ES [**EN010163/APP/6.1 to EN010163/APP/6.6**] has been undertaken based on the maximum extents of each of the Work Numbers described in Schedule 1 to the Draft DCO as shown on the Works Plans. This approach is known as the use of the 'Rochdale Envelope' which is described in footnote 78 to paragraph 4.2.8 of NPS EN-1 as being an assessment based on a "*series of maximum extents of a project for which the significant effects are established. The detailed design of the project can then vary within this 'envelope' without rendering the environmental impact assessment inadequate*".

1.1.5 Due to the rapidly evolving technology within the solar photovoltaics and energy storage system sectors, the in-built flexibility allows for the most up-to-date technology to be utilised for the development of the Scheme. The full detailed design at the point of construction will be managed post-consent through the Requirements set out in Schedule 2 of the Draft DCO.

1.1.6 This Outline Design Principles document defines the key design parameters which reflect the worst-case scenario adopted in the EIA that has been undertaken for the Proposed Development. As the detailed design of the Proposed Development will be in accordance with these assessed parameters, the conclusions of the ES will be upheld.

1.1.7 The Outline Design Principles have been set out in Table 2.1, organised in accordance with the description of the Works Numbers as set out in Schedule 1 to the **Draft DCO** [**EN010163/APP/3.1**]. The spatial extents of each Work Number are set out in the accompanying **Works Plans** [**EN010163/APP/2.2**]. Where applicable, outline management plans, which are submitted as appendices to the ES, will set out further details of the design, parameters and mitigation measures that will be complied with as part of the construction, operation, maintenance and decommissioning of the Proposed Development. These include:

- **Appendix 4.1 - Outline Construction and Environmental Management Plan [EN010163/APP/6.3.4]**
- **Appendix 4.2- Outline Decommissioning Plan [EN010163/APP/6.3.4]**
- **Appendix 4.3 - Outline Fire Risk Management Plan [EN010163/APP/6.3.4]**
- **Appendix 4.4 - Outline Operational Management Plan [EN010163/APP/6.3.4]**
- **Appendix 9.4 – Outline Written Scheme of Investigation for Pre-Determination Trial Trenching [EN010163/APP/6.3.9]**
- **Appendix 9.5 – Outline Written Scheme of Investigation for Post-Consent Archaeological Works [EN010163/APP/6.3.9]**
- **Appendix 10.1 - Outline Supply Chain, Employment and Skills Plan [EN010163/APP/6.3.10]**
- **Appendix 13.2 - Outline Construction Traffic Management Plan [EN010163/APP/6.3.13]**
- **Appendix 15.2 - Outline Soil Management Plan [EN010163/APP/6.3.15]**

1.1.8 All heights defined in Table 2.1 are Above Ground Level (AGL), unless otherwise specified.

1.2 Outline Design Principles

1.2.1 The Outline Design Principles are set out in Table 2.1 below.

Table 0.1 - Outline Design Principles

Scheme component	Parameter type	Design parameter and principles
Work No 1 - a ground mounted solar photovoltaic generating station		
Solar panels fitted to mounting structures	Solar module height	The maximum height of the highest part of the solar modules will be 3.0m. The minimum height of the lowest part of the solar modules at its greatest inclination will be 0.8m.
	Associated electrical infrastructure height	Electrical infrastructure associated with the panels will be elevated by the mounting structures so that it is no less than 0.3m above the 1% Annual Exceedance Probability (AEP) plus climate change fluvial flood level.
	Separation distance	Separation distance between rows of panels will be a minimum of 2.0m at the closest point, and there will be a maximum distance of 12.0m between solar module centrelines.
	Foundation depth	Maximum depth of piled mounting structures will be 2.4m below ground level.
	Alignment and slope	The solar modules will be aligned in east-west rows, and slope towards the south at a fixed slope of 10 – 26 degrees from horizontal.
	Colour	The solar modules are likely to be either black or dark blue. This will be fixed during detailed design.
	Frame type	The frame type is likely to be galvanised steel or aluminium.

Scheme component	Parameter type	Design parameter and principles
	Panel technology	The panel technology will be either monofacial or bifacial panels.
	Rack type	Modules will be mounted on a rack likely to be made with galvanised steel, aluminium or similar design material.
	Foundation type	Foundations will typically be galvanised steel poles driven into the ground. These will either be piles rammed into a pre-drilled hole or a pillar attaching to a steel ground screw. Foundations in areas of archaeological interest may constitute concrete feet to which the mounting structures will be affixed. In such circumstances, concrete feet will be set directly on the topsoil with no excavation.
Solar conversion units general	Location and elevation	All equipment will be located outside of 1% AEP plus cc fluvial flood extent and sensitive equipment will be raised as high as reasonably practicable.
Solar conversion units – containerised option	Maximum dimensions	The maximum dimension of a containerised conversion unit will be 15.2m in length and 6m in width, to a maximum height of 3.2m.
	Appearance	Containerised conversion units will sit in containers, externally finished to be in keeping with the prevailing surrounding environment.
	Monitoring and control	Monitoring and control systems will consist of manual controls at the containerised conversion units, and automatic and centralised monitoring and

Scheme component	Parameter type	Design parameter and principles
		control features at the control rooms on the onsite substations.
Solar conversion units – skid option	Maximum dimensions	The maximum dimension of a skid conversion units will be 11m in length and 3.9m in width, to a maximum height of 2.8m.
	Appearance	Skid conversion units will be exposed to the open air. Externally finished to be in keeping with the prevailing surrounding environment.
	Monitoring and control	Monitoring and control systems would consist of manual controls at the solar conversion unit, and automatic and centralised monitoring and control features at the control rooms on the onsite substations.
Solar inverter – separated option	Maximum dimensions	Separated equipment will all fit within inverter / transformer station areas of 15.2m length and 6m width.
	Appearance	Externally finished to be in keeping with the prevailing surrounding environment. The exact colour will be subject to manufacturer specifications and agreed with the relevant planning authority prior to construction but will be as similar as feasibly possible to light grey (RAL 7035) colour finish.
Solar transformer – separated option	Maximum dimensions	Separated equipment will all fit within inverter / transformer station areas of 15.2m x 6m.
	Appearance	Externally finished to be in keeping with the prevailing surrounding environment. The exact colour will be subject to manufacturer specifications and

Scheme component	Parameter type	Design parameter and principles
		agreed with the relevant planning authority prior to construction but will be as similar as feasibly possible to light grey (RAL 7035) colour finish.
Solar switchgear – separated option	Maximum dimensions	Separated equipment will all fit within inverter / transformer station areas of 15.2m length and 6m width.
	Appearance	Externally finished to be in keeping with the prevailing surrounding environment. The exact colour will be subject to manufacturer specifications and agreed with the relevant planning authority prior to construction but will be as similar as feasibly possible to light grey (RAL 7035) colour finish.
DC electrical cabling	Depths and elevations	Cabling from and between solar modules, to inverters and transformers: Onsite trench will be a minimum of 0.4m deep and 0.4m wide where cables are buried, or a trenchless technique will be used. Suspended cables will be suspended between 0.4m to 2.4m above ground level.
	Location	Cabling will be above ground level between the solar modules. These will be fixed to the mounting structure along the row of racks. Cabling between the solar modules and conversion units will be buried within underground trenches, or a trenchless technique will be used. Where non-ground-penetrative

Scheme component	Parameter type	Design parameter and principles
		works are required, cables will be suspended.
Work No. 2 – a battery energy storage system compound		
BESS compound (compound to house the BESS components and containers)	Maximum area	2.9ha
	Surfacing	Stone or localised asphalt dependent on earthing solution
	Foundation	Granular material forming subbase and capping, underlain by geotextile or geomembrane. Maximum depth of 700mm.
Battery Storage Enclosures (BSE)	Maximum number	82
	Dimensions (in metres)	6.1 x 2.4 x 2.9 (length width height)
	Colour	Dark green or recessive grey
	Elevation	Containers will be raised to a maximum of 0.5m above ground level.
BESS Power Conversion System (PCS) Units	Maximum number	41
	Dimensions (in metres)	8.1 x 2.4 x 2.4 (length width height)
	Colour	Dark green or recessive grey
	Elevation	PCS will be raised to a maximum of 0.5m above ground level.
BESS Auxiliary Transformer	Number	2 (2.5MVA each)
	Dimensions (in metres)	3.1 x 2.5 x 2.1 (length width height)
	Colour	Dark green or recessive grey
Internal BSE Fire Suppression System	Type	Each BSE will have a dedicated fire protection system, comprising flammable gas detection and venting, fire detection and alarm, and an automatic fire suppression system.
External BSE fire suppression	Type	It is the intention that the site would be self-sufficient during a potential battery-based fire event and would not require fire service intervention to prevent fire

Scheme component	Parameter type	Design parameter and principles
		spread or any other significant risks to people or property. During detailed design and following battery product selection a detailed Fire Risk Management Plan will be developed, in liaison with the Fire Service and with due consideration of the NFCC Guidance. In development of detailed design and liaison with the Fire Service, fire service intervention may be deemed a necessary part of the BESS fire suppression strategy. In this outcome, fire water storage will be provided adjacent to the BESS compound access tracks to supply water to firefighters for an adequate duration.
	Number and dimensions of water storage tank areas (in metres)	Up to 2 water storage tank areas each with dimensions of 17.3m x 13m.
Lighting	Type	Downward facing security lighting either on columns 3m high or attached to buildings.
Work No. 3 - works in connection with a new 400/33kV onsite substation		
Substation Compound (compound to house development substation buildings and components)	Maximum Area	2.42
	Surfacing	Stone or localised asphalt dependent on earthing solution
	Foundation	Granular material forming subbase and capping, underlain by geotextile. Maximum depth of 700mm.
Substation Transformer(s)	Number	3 (each is 260/130/130MVA and 400/33/33kV). Each is a three winding transformer.
	Dimensions (in metres)	16.5 x 10.0 x 5.0 (length, height, width)

Scheme component	Parameter type	Design parameter and principles
	Fire wall (in case of explosion)	4 walls up to 0.6 metres thick, up to 10 metres high above ground level. Material to be confirmed.
Substation Busbars and overhead electrical infrastructure	Dimensions	Overhead busbar height = 12.0m
Substation control building (400kV)	Number	1
	Dimensions (in metres)	15 x 10 x 4 (length width height)
	External appearance	Will be constructed per relevant substation regulations and specifications. Walls made of concrete blocks, glass reinforced plastic (GRP) or steel construction with cladding. Finished in dark green or recessive grey paint. Roof could be tiled, metal or other materials depending on final design and requirements.
Substation control building (33kV)	Number	3
	Dimensions (in metres)	12 x 3.5 x 4 (width, length, height)
	External appearance	Will be constructed per relevant substation regulations and specifications. Walls made of concrete blocks, glass reinforced plastic (GRP) or steel construction with cladding. Finished in dark green or recessive grey paint. Roof could be tiled, metal or other materials depending on final design and requirements.
Harmonic filters	Number	6
	Dimensions (in metres)	3.0 x 6.0 x 2.7 (width, length, height)

Scheme component	Parameter type	Design parameter and principles
	Elevation	Harmonic filters will be raised to a maximum of 0.5m above ground level
	External appearance	Metallic containers finished in Dark Green or Recessive Grey paint as necessary
Reactors	Number	6
	Dimensions (in metres)	3 x 5 x 2 (width, length, height)
	Elevation	Reactors will be raised to a maximum of 0.5m above ground level
	External appearance	Metallic containers finished in Dark Green or Recessive Grey paint as necessary
Capacitors	Number	6
	Dimensions (in metres)	2.8 x 6.4 x 2.6 (width, length, height)
	Elevation	Capacitors will be raised to a maximum of 0.5m above ground level.
	External appearance	Metallic containers finished in Dark Green or Recessive Grey paint as necessary
Permanent lighting	Type	Downward facing security lighting either on columns 3m high or attached to buildings.
Work No 4 – works to install 400kV electrical cables connecting Work No. 3 to Work No. 5		
Cable installation	Type	400kV underground cable, laid either by directional drilling or trenching and ducting as required. With directional drilling, a pipeline would be bored underground to emerge at a target point. Location of the drill bit is monitored using the Horizontal Directional Drilling (HDD) locating system. If trenching is chosen instead of directional drilling, standard

Scheme component	Parameter type	Design parameter and principles
		trenching techniques to break open the ground to install trench and ducting for cabling will be used, per final detailed construction designs.
	Number	One continuous trench with sections of directional drilling as required.
	Maximum width of trench (in metres)	3
	Maximum depth of trench (open trenching, in metres)	3
	Maximum depth of directional drilling (in metres)	10
	Minimum depth of cable (in metres)	1.0 – 1.2m (It is noted that warning tape would be placed at approximately 0.4 m depth for safety purposes, and an earthing cable would be placed at a similar depth)
	Maximum working width of cable corridor construction (in metres)	20m to facilitate storage/laydown/access and working machinery
	Associated works	Works associated with cable laying including trenching, jointing bays, fibre bays, cable ducts, cable protection, joint protection, manholes, kiosks, marker posts, underground cable marker, tiles and tape, send and receive pits for horizontal directional drilling, trenching, storage of excavated material, lighting, and a pit or container to capture fluids associated with drilling. All these works will be undertaken within the maximum parameters described above.

Scheme component	Parameter type	Design parameter and principles
Work No. 5 – connection and installation works to the existing transmission network substation		
Grid connection works	Type	Grid connection assets installed as required adjacent to transmission network substation. 400kV underground cable, laid either by directional drilling or trenching and ducting as required. With directional drilling, a pipeline would be bored underground to emerge at a target point. Location of the drill bit is monitored using the Horizontal Directional Drilling (HDD) locating system. If trenching is chosen instead of directional drilling, standard trenching techniques to break open the ground to install trench and ducting for cabling will be used, per final detailed construction designs.
	Maximum width of trench (m)	3
	Maximum depth of trench (m)	3
	Maximum depth of directional drilling if required (m)	10
	Maximum depth of cable (m)	1.0 – 1.2m (It is noted that warning tape would be placed at approximately 0.4 m depth for safety purposes, and an earthing cable would be placed at a similar depth)
	Maximum working corridor (m)	20m to facilitate storage/laydown/access and working machinery

Scheme component	Parameter type	Design parameter and principles
	Associated works	Works including trenching, directional drilling, clearing of vegetation and felling of trees, installation of jointing bays, fibre bays, cable ducts, cable protection, joint protection, manholes, electrical kiosks/cabinets, marker posts, underground cable marker, tiles and tape, send and receive pits for horizontal directional drilling, trenching, lighting, and a pit or container to capture fluids associated with drilling, storage of equipment, plant, materials, installing drainage features, lighting, and welfare facilities, facilities for storage and removal of waste. All these works will be undertaken within the maximum parameters described above.
Work No. 6 – works to facilitate project access and cabling		
Site entrance	Works	Works to create a new permanent access junction from the public highway or right of way. Works to widen and / or reinforce the public highway or right of way. Works to excavate and store soil, clear vegetation and fell trees, level, shape and prepare surface for construction track and permanent operational track to be installed. Temporary traffic lights or other measures to manage traffic.
Cabling (between transformer stations and proposed development substation)	Type	33kV underground cables, laid either by directional drilling or trenching and ducting as required.

Scheme component	Parameter type	Design parameter and principles
		With directional drilling, a pipeline would be bored underground to emerge at a target point. Location of the drill bit is monitored using the Horizontal Directional Drilling (HDD) locating system. If trenching is chosen instead of directional drilling, standard trenching techniques to break open the ground to install trench and ducting for cabling will be used, per final detailed construction designs.
	Maximum cable trench dimensions	Maximum dimensions per cable circuit: 1.5m deep and 1.2m wide
	Minimum cable depth (in metres)	0.9 m (It is noted that warning tape would be placed at approximately 0.4 m depth for safety purposes, and a very thin earthing cable would be placed at the same depth)
Cabling (between PV modules and inverters and from inverters to transformers)	Type	Low voltage (typically electrical cabling is required to connect the inverters to the transformers onsite, this cabling runs from ducts fastened to underside of PV module mounting structure and down one of the mounting piles to ground, where it runs in trench to the nearest transformer station) Cabling between the inverters and the transformer will be buried within underground trenches.
	Maximum cable trench dimensions	Maximum dimensions per cable circuit: 1.5m deep and 1.2m wide
	Minimum cable depth (in metres)	0.9 m (Warning tape will be placed at ~0.4 m depth for safety purposes. An earthing cable will

Scheme component	Parameter type	Design parameter and principles
		be installed at the same depth as the electric cable)
Work No. 6A – works to install 33kV cabling		
Cabling (between transformer stations and proposed development substation)	Type	33kV underground cables, laid either by directional drilling or trenching and ducting as required. With directional drilling, a pipeline would be bored underground to emerge at a target point. Location of the drill bit is monitored using the Horizontal Directional Drilling (HDD) locating system. If trenching is chosen instead of directional drilling, standard trenching techniques to break open the ground to install trench and ducting for cabling will be used, per final detailed construction designs.
	Maximum cable trench dimensions	Maximum dimensions per cable circuit: 1.5m deep and 1.2m wide
	Minimum cable depth (in metres)	0.9 m (When installed via trenching, warning tape will be placed at ~0.4 m depth for safety purposes. An earthing cable will be installed at the same depth as the electric cable)
Work No. 7 – general works		
Onsite cabling (between battery containers, Power Conversion System (PCS) units, and from PCS to transformers)	Type	Low or medium voltage
	Maximum cable trench dimensions	Maximum dimensions per cable circuit: 1.5m deep and 1.2m wide
	Minimum cable depth (in metres)	0.9 m (When installed via trenching, warning tape will be placed at ~0.4 m depth for safety purposes. An earthing cable will be installed at the same depth as the electric cable)

Scheme component	Parameter type	Design parameter and principles
Onsite cabling (between transformer stations and proposed development substation)	Type	33kV underground cables, laid either by directional drilling or trenching and ducting as required. With directional drilling, a pipeline would be bored underground to emerge at a target point. Location of the drill bit is monitored using the Horizontal Directional Drilling (HDD) locating system. If trenching is chosen instead of directional drilling, standard trenching techniques to break open the ground to install trench and ducting for cabling will be used, per final detailed construction designs.
	Maximum cable trench dimensions	Maximum dimensions per cable circuit: 1.5m deep and 1.2m wide
	Minimum cable depth (in metres)	0.9 m (When installed via trenching, warning tape will be placed at ~0.4 m depth for safety purposes. An earthing cable will be installed at the same depth as the electric cable)
Onsite cabling (between PV modules and inverters and from inverters to transformers)	Type	Low voltage (typically electrical cabling is required to connect the inverters to the transformers onsite, this cabling runs from ducts fastened to underside of PV module mounting structure and down one of the mounting piles to ground, where it runs in trench to the nearest transformer station) Cabling between the inverters and the transformer will be buried within underground trenches.

Scheme component	Parameter type	Design parameter and principles
	Maximum cable trench dimensions	Maximum dimensions per cable circuit: 1.5m deep and 1.2m wide
	Minimum cable depth (in metres)	0.9 m (Warning tape will be placed at ~0.4 m depth for safety purposes. An earthing cable will be installed at the same depth as the electric cable)
Onsite earthing infrastructure	Location	Within and around perimeter of BESS compound, substation compound, and electrical equipment foundations.
	Type	Bare copper earthing cables and rods
	Minimum buried infrastructure depth	0.5m (earthing cable)
	Maximum buried infrastructure depth	2m (earthing rod)
Perimeter fencing (around solar area)	Type and height	Stock wire deer fencing up to 2.4m tall with wooden posts piled into ground.
Perimeter fencing (around BESS and substation compounds)	Type and height	Two options: Palisade security fencing up to 3.0m tall with steel posts fixed into ground with concrete foundation. Lockable double leaf access gates. Mesh grid fencing up to 2.4m tall with stell posts fixed into ground with concrete foundation. Lockable double leaf access gates.
CCTV poles	Maximum height	3.5m
	Maximum number	750
Temporary lighting columns	Location	Construction compounds
	Maximum height	5m
	Maximum number	6 per construction compound (6 construction compounds in total to maximum of 36)
Weather stations	Maximum height	1m

Scheme component	Parameter type	Design parameter and principles
	Maximum number	10
Permanent internal access tracks	Width	4.0m wide. Widths increase at bends to accommodate vehicle turning circles
	Construction and depth	Running course overlying a sub-base layer with capping if required. Maximum depths of 0.5m.
Drainage infrastructure (solar area)	Type	Mixed grassland planting beneath panels to reduce erosion and enhance interception and evapotranspiration. Gravel filled trenches along access tracks. Gravel filled filter trenches around inverter stations.
Drainage infrastructure (BESS and substation compounds)	Type	Linear drainage features connecting to pipes that convey water towards water containment feature. Inspection chambers and manholes between runs of pipe. Outfall pipe and manhole with flow control unit discharging at limited rate into watercourse.
Water containment features (detention basin)	Type	Detention basin with banks sloping at 1:3 gradient, underlined with geosynthetic clay liner or similar.
	Number	4 – 1 serving BESS compound, 1 serving substation compound, 2 within western parcel to reduce existing flood risk within Steeple village.
Water containment features (swale)	Location	Along the eastern extent of western parcel, conveying water into detention basins reducing Steeple village flood risk. Swales and shallow ditches at the lower edge of fields within the solar area.

Scheme component	Parameter type	Design parameter and principles
Equipment foundations	Location	Underlying and localised to electrical equipment throughout development
	Type	Concrete pad, strips or footings. Heavier equipment may require pile foundations dependent on ground conditions. Substation 260MVA transformers may require sunken concrete chambers up to 2m in depth.
Building and structure foundations	Location	Underlying and localised to buildings and structures throughout the development including control rooms, storage containers, walls / fences.
	Type	Concrete pad, strips or footings. Pile foundations may be required dependent on ground conditions.
Craneage hardstanding	Location	Adjacent to solar inverter / transformer station areas.
	Size	15m x 15m
	Foundation	Granular material forming surface, subbase and capping, underlain by geotextile. Maximum depth of 700mm.
Solar inverter / transformer station area groundworks	Location	At inverter / transformer station areas across Work No 1.
	Size	15.2m x 6m
	Surfacing	Stone or localised asphalt dependent on earthing solution
	Foundation	Granular material forming subbase and capping, underlain by geotextile. Maximum depth of 700mm.
Works No. 8 – works for areas of habitat management		
Landscape and biodiversity enhancement measures; and habitat creation and management including earthworks, landscaping, means of enclosure and the laying and construction of drainage infrastructure.		
Work No. 9 – works to implement new permissive paths through Order limits comprising		

Scheme component	Parameter type	Design parameter and principles
Permissive Paths	Width of path	4-5m with associated deer fencing and hedgerow as required
	Surface	Mown grass path with wooden board walk/ditch crossings as required.
Work No. 10 - temporary construction and decommissioning of site compounds comprising		
Construction compounds	Number and size	6 in total. 2 in development substation area sized 3ha and 0.9ha. 1 in centre of eastern parcel sized 0.6ha. 2 in north of western parcel sized 1.7ha and 0.6ha. 1 in centre of western parcel sized 0.6ha.
	Associated works	Soil stripping to 300–400 mm depth, installation of non-woven geotextile membrane to separate subsoil and enhance drainage, placement of 300–400 mm compacted crushed stone (40 mm down-to-dust or MOT Type 1), depth based on load requirements. a) storage of excavated material for reinstatement following removal of construction compound b) temporary drainage measures, stormwater management, erosion and environmental controls; c) temporary access tracks, vehicle turning areas, and car and cycle parking area; d) storage of equipment and materials; e) temporary site lighting, fencing and security infrastructure; f) worker facilities including site offices, toilets, break areas, first aid station;

Scheme component	Parameter type	Design parameter and principles
		g) electricity, water, and telecommunications connections; h) waste management systems; i) fuel storage and refuelling stations; temporary road signage for construction period; and removal of temporary infrastructure.