

UNDERGROUNDING DETAILS PURSUANT TO CONDITION 64 OF PLANNING PERMISSION 191068

SOUTH WOKINGHAM SDL PHASE 2B

1. BTS

BTS has been acting on behalf of the Consortium (Kier Ventures Ltd, Miller Homes Ltd and Option Four Developments Ltd) as a specialist utilities consultant with respect to the undergrounding of the overhead electricity lines at South Wokingham for over 4 years, advising on property rights, including wayleaves and easements, and delivery of electricity apparatus diversions. We have an in-depth knowledge of the technical complexities and challenges involved in the diversions associated with this site.

BTS has extensive knowledge and experience in terms of planning, development, technical concerns, utilities and valuation. We work on site selection, energy generation, new connections, and property rights, right through to delivering complex pipeline and electricity apparatus diversions, such as South Wokingham.

2. Introduction: Ancient Tree

SSE (for the purposes of this report, this refers to Southern Electric Power Distribution Limited (SEPD) (the trading name), and Scottish and Southern Electricity Networks Limited (SSEN) (the Legal Entity), both of which form part of the SSE Plc Group) is due to deliver the undergrounding of the 132kV and 33kV overhead electricity lines (OHLs) that are currently crossing the site at South Wokingham.

Phase 1 will involve installing the underground cables within a shared trench, which will be secured by two overlaying easements. The easements (highlighted in green in **Figure 1** below) will run along the site's northern boundary and have a maximum width of 10 metres. SSE's cable designs are currently unable to avoid the presence of an ancient tree, known as **T63**, (the location of which is also shown on the plan).

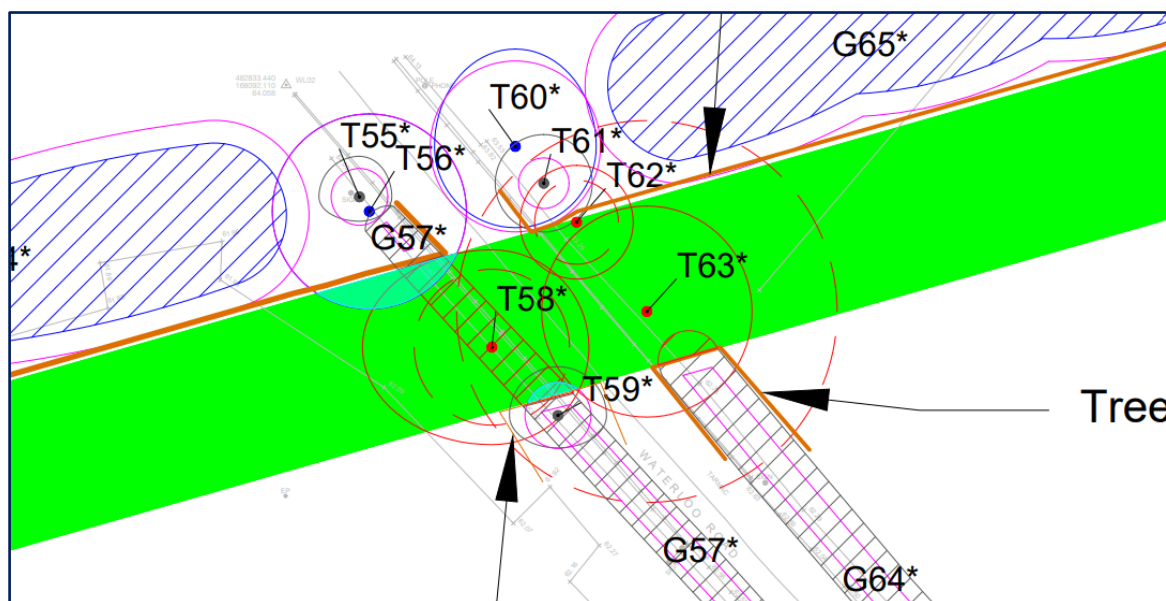


Figure 1

3. Technical Consideration

SSE have undertaken a technical review with regard to mitigating the presence of T63. This has included the possibility of drilling below T63 to install the cables.

HDD Drilling below T63

SSE's technical review has confirmed that HDD drilling below the tree would not be a feasible solution. The depth at which the cables would need to be laid would have a detrimental effect on the stability of the network. Extracts from SSE's formal response are set out below:

"Trenchless crossing within the existing parameters

SSEN have undertaken cable system design on trenchless crossing of the area under the tree in question. The best-case scenario was advised to be Horizontal Directional Drilling (HDD), as less time is spent at a depth detrimental to thermal performance due to the concaved drill ability of the technique. Our Cable system report shows there is no arrangement which would allow us to reach the required cable system performance during this HDD. The understanding was that these conditions were further likely to be made worse when considering the impacts of dry out on the area. Four different conditions were modelled, all of which limited the circuit rating to such a degree as to be unacceptable by SSEN and would impact our ability to feed Wokingham/Peacock Farm/Bracknell primary substations. Table 20 below shows rating report summary - showing that the rating achievable on the 33kV best case scenario is ~66% of the required performance, while providing ~85% of the rating required on the 132kV circuit. Table 1 shows the rating required on this line. This would as you imagine not be acceptable as a cable performance, as confirmed by SSEN DSO (Distributed System Operators), who dictate the requirements for our network.

Table 20. Waterloo Road HDD Rating Results.

	132kV Cables (XB)				33kV Cables (Solid)			
	Rating Results				Rating Results			
	cct1		cct2		cct1		cct2	
	Cond Temp (°C)	Rating (A)	Cond Temp (°C)	Rating (A)	Cond Temp (°C)	Rating (A)	Cond Temp (°C)	Rating (A)
Condition 1	90	1013	90	897	90	453	90	520
Condition 2	112.9	993	155.4	993	206.4	674	187.9	674
Condition 3	90.7	993	107.5	993	90	431	90	513
Condition 4	81.9	993	89.6	993	49	274	49	364

Table 1. Rating requirements

Circuit	Requirement	
132kV Diversion	Summer	857A
	Spring / Autumn	993A
	Winter	1067A
33kV	All Seasons	674A

The parameters used were as below:

- Summer conditions; 15°C ambient temperature
- 132kV circuits:
 - 132kV 1600mm² Cu cable design
 - Flat formation Phase spacing 950mm (C-C)
 - 150/160mm uPVC ducts
 - Crossbonded system
 - Depth of 132kV circuits = 5200mm TOD
 - Spacing between 132kV cct centres = 4900mm
- Spacing between 132kV and 33kV ccts = 3000mm
- 33kV circuits:
 - 33kV 1000mm² Cu cable design
 - 189/200mm uPVC ducts
 - Solidly bonded system
 - Depth of 33kV ccts = 5180mm TOD
 - Spacing between 33kV cct centres = 2000mm

Isotherm calculations were not carried out on this element as it showed no rating which would comply with the levels required. 1000mm² Cu was used to produce these calculations for the 33kV circuit, as this is the highest rated type tested conductor available for 33kV circuits at present.”

Thomas Ecob, Project Manager (Distribution – Large Capital Delivery)

SSE have therefore concluded that the only feasible way of retaining the tree on the site would be to re-route the cables around T63, to the south. This is subject to design, and an indicative route is shown in **Figure 2**.

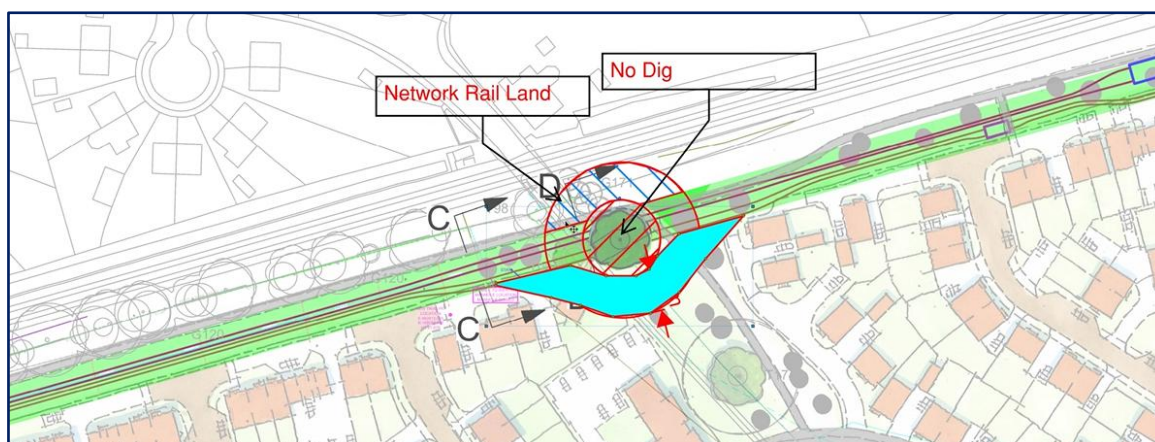


Figure 2

Re-routing the cable to the south (as shown above), however, would then create a legal constraint.

4. Legal Consideration

Two easements have been granted to SSE (SEPD Plc being the named party on the agreements) from multiple landowners, for the 132kV and the 33kV cables. The easements extend to a 10 metre width for the 132kV and a 4 metre width for the 33kV, and overlay one another in the section of the route where T63 is located. The easements granted allow SSE the right to lay, repair and maintain their apparatus within it.

Under a Works Agreement and a separate Development Agreement, between the Consortium members (Kier, Miller and Option Four Ltd) and SSE (SEPD Plc) SSE will design and deliver the diversionary works associated with the easements granted.

The existing easements for the apparatus and the route granted to SSE, will not accommodate a re-routing of the cable to the south, to avoid T63.

This is due to the anticipated bending radii that would be required for the re-routed cable, as these would extend the cable beyond the parameters of the existing easements.

A review of the existing easements, undertaken by the Consortium's (Kier's) legal advisors, has confirmed that there are relocation clauses within the deeds that apply to both the 132kV and the 33kV easements. However, these could only be activated upon a minimum of 12 months' (or reduced to at least 6 months) notice being served on SSE and are subject to numerous provisions.

It would also be necessary to re-draft the easement agreements and their associated documents to facilitate this re-design. Due to the number of landowners associated with the existing cable route, the existing easement took over 18 months to agree. SSE believe this is a major risk to the programme, and anticipating that it would take 6 months to re-draft the documents.

5. Consequences of Re-Routing

Re-routing would require service of legal notices, a re-design of the cable and a re-drafting of new easements. SSE anticipate that the re-design would take 3 months and both SSE and the Consortium anticipate the re-draft of the legal documentation taking 4 to 6 months, with particular risk being attached to re-drafting the new easements, as this will necessitate the involvement of multiple third parties.

Delays to SSE's indicative programme would undoubtedly push back the physical removal of the 33kV OHL beyond the anticipated delivery date of Summer 2026. With the information provided to date from SSE, it is anticipated that this would extend the date for the removal of the 33kV pylons to between 9 and 12 months (at best).

It should also be noted that high voltage diversion works can only be undertaken during the summer months (April to October). Therefore, any delay due to missing this 'outage' window might extend SSE's programme by a further 6 months.

The removal of the 33kV overhead apparatus following the energisation of the new underground diversion will be necessary for certain elements of the SWDR construction to take place. The result will be a delay in delivering the road and much needed new homes.

6. Conclusions and Mitigation

Following on from the Planning Note submitted by Nexus Planning in July 2025, the above submission has been prepared to provide further substantiation, on behalf of the Consortium, that based on the current designs for the underground cable route and existing easements, it will not be possible for SSE to provide an acceptable technical solution that would enable the tree to be retained. It is also clear that there would be significant consequences for the wider development were the cable to be re-routed to the south.

To compensate for the loss of the tree T63, separate plans will be provided to demonstrate that the planting proposals for the site will adequately mitigate the loss of the tree's amenity and ecological value. Full details will be provided through the reserved matters application for Parcel R9.

I trust this statement provides the information the Planning and Tree officers require to consider the route for the cables being retained in its current proposed location, as put forward within the submitted strategy.



Laura Smith
Director
BTS

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