

# Scotland England Green Link 2 - English Onshore Scheme

Environmental Statement:  
Volume 3

Appendix 3A: Schedule of Proposed DC Cable  
Route Crossings

May 2022

For: National Grid Electricity Transmission

### Quality information

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### Revision History

<b>Revision</b>	<b>Revision date</b>	<b>Details</b>
Rev 1	31 <sup>st</sup> May 2022	Final issued to client

## Tables

Table 3A-1: Schedule of Proposed DC Cable Route Crossings.....2

# Appendix 3A Schedule of Proposed DC Cable Route Crossings

Table 3A-1: Schedule of Proposed DC Cable Route Crossings

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>Route Section 1</b>					
LF01	Landfall	North of Fraisthorpe Sands	HDD	Landfall	Not applicable
UT030	Utility	N/A	HDD	Landfall	Not applicable
WC001	Water	Auburn Beck - East Riding of Yorkshire Council	HDD	HDD_001	Culvert (within 40m swathe)
UT080	Utility	N/A	HDD	HDD_002	Off-line (haul road and on public highway)
WC003	Water	East Riding of Yorkshire Council	HDD	HDD_002	Off-line (haul road and on public highway)
WL018	Woodland	Woodland strip East of A165	HDD	HDD_002	Off-line (haul road and on public highway)
UT033	Utility	N/A	HDD	HDD_002	Off-line (haul road and on public highway)
RD006	Road	A165	HDD	HDD_002	Off-line (haul road and on public highway)
UT170	Utility	N/A	HDD	HDD_002	Off-line (haul road and on public highway)
UT079	Utility	66KV - 300 SQ.MM COPPER POLYMERIC SINGLE CORE (UG CABLE)	HDD	HDD_002	Off-line (haul road and on public highway)
UT035	Utility	N/A	HDD	HDD_002	Off-line (haul road and on public highway)
UT034	Utility	N/A	HDD	HDD_002	Off-line (haul road and on public highway)
UT027	Utility	N/A	HDD	HDD_002	Off-line (haul road and on public highway)
UT083	Utility	11KV - CROSHAM HILL 7592 - WILSTHORPE LSI 6088 TEED (OHL)	HDD	HDD_002	At-grade haul road crossing (within 40m cable swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>UT082</b>	Utility	11KV - LANCASTER ROAD WEST END 8566 - LOW STONEHILLSCOTTAGES 2312 TEED (OHL)	HDD	HDD_002	At-grade haul road crossing (within 40m cable swathe)
<b>WC005</b>	Water	East Riding of Yorkshire Council	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT084</b>	Utility	N/A	Haul road only (no cable crossing)	N/A	Off-line (temporary haul road only)
<b>UT028</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>RD007</b>	Road	Access track off A165	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT085</b>	Utility	11KV - SOUTH KINGSFIELD 9400 - NORTH KINGSFIELD 1955 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC008</b>	Water	East Riding of Yorkshire Council	Open Cut	N/A	Culvert (within 40m swathe)
<b>WC457</b>	Water	The Earl's Dike - Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_003	Culvert (within 40m swathe)
<b>WL016</b>	Woodland	Woodland adjacent to The Earl's Dike	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC455</b>	Water	Burton Drain - Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_004	Culvert (within 40m swathe)
<b>UT001</b>	Utility	Burton Agness to Paull – 750mm dia. (high pressure)	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>WC451</b>	Water	East Riding of Yorkshire Council	Open Cut	N/A	Culvert (within 40m swathe)
<b>PROW001</b>	PROW	Burton Agnes Bridleway No.5 - BAGNB05	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>UT086</b>	Utility	11KV - CROSHAM HILL 7592 - WILSTHORPE LSI 6088 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT218</b>	Utility	N/A	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>RD009</b>	Road	Moor Lane, Gransmoor	HDD - Potentially Open Cut	HDD_005	At-grade haul road crossing (within 40m cable swathe)
<b>UT037</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_005	At grade haul road crossing (potential protection of utility required)
<b>UT172</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_005	At grade haul road crossing (potential protection of utility required)
<b>UT175</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_005	At grade haul road crossing (potential protection of utility required)
<b>WC490</b>	Water	East Riding of Yorkshire Council	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC491</b>	Water	East Riding of Yorkshire Council	HDD - Potentially Open Cut	HDD_006	At-grade haul road crossing (within 40m cable swathe)
<b>RD159</b>	Road	Quarry access track	HDD - Potentially Open Cut	HDD_006	At-grade haul road crossing (within 40m cable swathe)
<b>WC492</b>	Water	Gransmoor Drain - Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_006	At-grade haul road crossing (within 40m cable swathe)
<b>PROW002</b>	PROW	Kelk Bridleway No. 3 - KELKB03	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>RD160</b>	Road	Gransmoor Lane	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC035</b>	Water	Beverley & North Holderness IDB	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>UT073</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>WL094</b>	Woodland	Strip of woodland East of Main Street	HDD	HDD_007	Off-line (on public highway)
<b>RD014</b>	Road	Main Street	HDD	HDD_007	Off-line (on public highway)
<b>UT176</b>	Utility	N/A	HDD	HDD_007	Off-line (on public highway)
<b>WC446</b>	Water	Kelk Beck - Environment Agency	HDD	HDD_008	Temporary bridge
<b>EN001</b>	Environmental	River Hull Headwaters	HDD	HDD_008	Combined (refer to notes)
<b>WC489</b>	Water	Unnamed Drain	Open Cut		Culvert (within 40m swathe)
<b>UT091</b>	Utility	11KV - OUTGATES 9129 - TWYDALES LITTLE KELK SPUR 9266 TEED (OHL)	HDD - Potentially Open Cut	HDD_009	At-grade haul road crossing (within 40m cable swathe)
<b>RD015</b>	Road	Out Gates	HDD - Potentially Open Cut	HDD_009	At-grade haul road crossing (within 40m cable swathe)
<b>PROW031</b>	PROW	Way of the Roses & Yorkshire Wolds National Cycle Network Route	HDD - Potentially Open Cut	HDD_009	N/A
<b>WC480</b>	Water	Warren Hill Drain - Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_009	Culvert (within 40m swathe)
<b>UT039</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_009	At grade haul road crossing (potential protection of utility required)
<b>WC053</b>	Water	Drain - Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_009	Culvert (within 40m swathe)



Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>WC059</b>	Water	White Dike Branch - Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_010	Culvert (within 40m swathe)
<b>WC086</b>	Water	White Dike - Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_010	Culvert (within 40m swathe)
<b>UT092</b>	Utility	11KV - NAFFERTON CARR LANE 6650 GVR - SPRING COTTAGE 1754 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT040</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>RD018</b>	Road	Hords Lane	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>PROW032</b>	PROW	Way of the Roses & Yorkshire Wolds National Cycle Network Route	Open Cut	N/A	N/A
<b>WC062</b>	Water	Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_011	Culvert (within 40m swathe)
<b>WC439</b>	Water	Nafferton Drain - Environment Agency	HDD	HDD_012	Temporary bridge
<b>RD019</b>	Road	Carr Lane	HDD - Potentially Open Cut	HDD_013	At-grade haul road crossing (within 40m cable swathe)
<b>UT177</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_013	At grade haul road crossing (potential protection of utility required)
<b>WC438</b>	Water	Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_013	Culvert (within 40m swathe)
<b>WC065</b>	Water	Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_013	Culvert (within 40m swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>PROW003</b>	PROW	Skerne & Wansford Footpath No.10 - SKERF10	HDD	HDD_014	At-grade haul road crossing (within 40m cable swathe)
<b>WC435</b>	Water	Nafferton Beck - Environment Agency	HDD	HDD_014	Temporary bridge
<b>WC067</b>	Water	Beverley & North Holderness IDB	HDD	HDD_014	Culvert (within 40m swathe)
<b>UT093</b>	Utility	11KV - WANSFORD SPUR 8726 LSI - NORTH CATTLEHOLMES 1316 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>RD020</b>	Road	Wansford Road	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT178</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT041</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>WC075</b>	Water	Beverley & North Holderness IDB	HDD	HDD_015	Culvert (within 40m swathe)
<b>UT036</b>	Utility	N/A	HDD	HDD_015	At grade haul road crossing (potential protection of utility required)
<b>UT042</b>	Utility	N/A	HDD	HDD_015	At grade haul road crossing (potential protection of utility required)
<b>UT094</b>	Utility	66KV - LISSETT WIND FARM 49426 - NCTM - NCTM-00738697 TEED (UG CABLE)	HDD	HDD_015	At grade haul road crossing (potential protection of utility required)
<b>RD022</b>	Road	B1249	HDD	HDD_015	Off-line (on public highway)
<b>WC416</b>	Water	Driffield Canal - Environment Agency	HDD	HDD_015	Off-line (on public highway)
<b>WC078</b>	Water	Beverley & North Holderness IDB	HDD	HDD_015	Off-line (on public highway)
<b>WC415</b>	Water	River Hull - Environment Agency	HDD	HDD_015	Off-line (on public highway)
<b>EN002</b>	Environmental	River Hull Headwaters	HDD	HDD_015	Off-line (on public highway)
<b>PROW004</b>	PROW	Skerne & Wansford Footpath No.6 - SKERF06	HDD	HDD_015	Off-line (on public highway)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>WC417</b>	Water	Beverley & North Holderness IDB	HDD	HDD_015	Off-line (on public highway)
<b>UT095</b>	Utility	66KV - DRIFFIELD 6103 - SEATON 754 (OHL)	Open Cut		At-grade haul road crossing (within 40m cable swathe)
<b>WC081</b>	Water	Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_016	Culvert (within 40m swathe)
<b>RD027</b>	Road	Access track from Skerne	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC091</b>	Water	East Riding of Yorkshire Council	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT096</b>	Utility	11KV - SKERNE VILLAGE ROAD 6114 - DRIFFIELD 6103 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC092</b>	Water	East Riding of Yorkshire Council	HDD	HDD_017	Culvert (within 40m swathe)
<b>RD028</b>	Road	Driffield Road	HDD	HDD_017	At-grade haul road crossing (within 40m cable swathe)
<b>PROW033</b>	PROW	Way of the Roses & Yorkshire Wolds National Cycle Network Route	HDD	HDD_017	At-grade haul road crossing (within 40m cable swathe)
<b>UT043</b>	Utility	N/A	HDD	HDD_017	At grade haul road crossing (potential protection of utility required)
<b>UT097</b>	Utility	11KV - SKERNE SOUTHFIELD 48300 - CORPS LANDING ROAD 7057 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT003</b>	Utility	N/A	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC388</b>	Water	Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_018	At-grade haul road crossing (within 40m cable swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>WC094</b>	Water	Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_018	At-grade haul road crossing (within 40m cable swathe)
<b>WC096</b>	Water	Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_019	Culvert (within 40m swathe)
<b>UT098</b>	Utility	66KV - DRIFFIELD 6103 - BURTON PIDSEA 5620 (OHL)	HDD - Potentially Open Cut	HDD_019	Culvert (within 40m swathe)
<b>WC386</b>	Water	Knorka Dike - Beverley & North Holderness IDB	HDD - Potentially Open Cut	HDD_019	Culvert (within 40m swathe)
<b>RA001</b>	Rail	Driffield to Hutton Cranswick Line	HDD	HDD_020	Off-line (on public highway)
<b>WC099</b>	Water	Beverley & North Holderness IDB	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT099</b>	Utility	11KV - SUNDERLANDWICK GREEN LANE 7737 - KEEPERS COTTAGE 2787 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC383</b>	Water	Northfield Beck - Beverley & North Holderness IDB	HDD	HDD_021	Culvert (within 40m swathe)
<b>PROW005</b>	PROW	Hutton Cranswick Footpath No.18-HCRAF18	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT100</b>	Utility	11KV - SUNDERLANDWICK GREEN LANE 7737 - KEEPERS COTTAGE 2787 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>RD035</b>	Road	Jenkinson Lane	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT044</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>WC380</b>	Water	East Riding of Yorkshire Council	HDD - Potentially Open Cut	HDD_022	Culvert (outside 40m swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>WC381</b>	Water	East Riding of Yorkshire Council	HDD - Potentially Open Cut	HDD_022	At grade haul road crossing (potential protection of utility required)
<b>UT046</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_022	Off-line (temporary haul road only)
<b>RD037</b>	Road	Hutton Balk	HDD - Potentially Open Cut	HDD_022	Not applicable
<b>RD036</b>	Road	Agricultural Access Track	HDD - Potentially Open Cut	HDD_022	At-grade haul road crossing (outside 40m cable swathe)
<b>RD034</b>	Road	Beverley Road A164	HDD - Potentially Open Cut	HDD_022	At-grade haul road crossing (outside 40m cable swathe)
<b>UT101</b>	Utility	11KV - HUTTON LSI 6561 - SOUTHBURN KEEPERS HOUSE 830 TEED (OHL)	HDD - Potentially Open Cut	HDD_022	At-grade haul road crossing (outside 40m cable swathe)
<b>UT045</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_022	At-grade haul road crossing (outside 40m cable swathe)
<b>WC102</b>	Water	East Riding of Yorkshire Council	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT142</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>PROW006</b>	PROW	Hutton Cranswick Footpath No.11 - HCRAF11	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>PROW007</b>	PROW	Hutton Cranswick Footpath No.12- HCRAF12	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>RD038</b>	Road	Burnbutts Lane	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>Route Section 2</b>					

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>PROW028</b>	PROW	Minster Way	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>RD142</b>	Road	Oldfield Lane	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>PROW008</b>	PROW	Watton Footpath No.1 - WATTF01	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT179</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_023	At grade haul road crossing (potential protection of utility required)
<b>UT180</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_023	At grade haul road crossing (potential protection of utility required)
<b>RD049</b>	Road	Station Road B1248	HDD - Potentially Open Cut	HDD_023	At-grade haul road crossing (outside 40m cable swathe)
<b>UT102</b>	Utility	11KV - HORN HILL 7077 - BAINTON 7076 TEED (OHL)	HDD - Potentially Open Cut	HDD_023	At grade haul road crossing (potential protection of utility required)
<b>UT047</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>RD050</b>	Road	Lane connecting Middleton Road and Station Road	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT048</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT103</b>	Utility	11KV - MOUNT PLEASANT PMAR 46564 - LUND NORTH SPUR 6242 (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT049</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>RD053</b>	Road	Beverley Road	Open Cut	N/A	At-grade haul road crossing (outside 40m cable swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>UT076</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT104</b>	Utility	11KV CORPORATION FARM SPUR 9341 - NCJT - 17489317 (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>RD054</b>	Road	Unnamed Road off B1248, Lund	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT050</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT051</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>RD055</b>	Road	Unnamed Lane North of Kiplingcotes	Open Cut	N/A	At-grade haul road crossing (outside 40m cable swathe)
<b>UT105</b>	Utility	11KV CORPORATION FARM SPUR 9341 - NCJT - 17489317 (OHL)	Open Cut	N/A	At-grade haul road crossing (outside 40m cable swathe)
<b>UT181</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT182</b>	Utility	Fire Hydrant	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>PROW009</b>	PROW	Lund Footpath No.2 - LUNDF02	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT106</b>	Utility	11KV CORPORATION FARM SPUR 9341 - NCJT - 17489317 (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>RD155</b>	Road	N/A	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>RD156</b>	Road	N/A	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>PROW034</b>	PROW	Dalton Holme Footpath No.3 - DHOLF03	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>UT167</b>	Utility	N/A	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>RD157</b>	Road	Kipling Cotes Race Course	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT300</b>	Utility	N/A	Haul road only (no cable crossing)	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT301</b>	Utility	N/A	Haul road only (no cable crossing)	N/A	At grade haul road crossing (potential protection of utility required)
<b>RD059</b>	Road	N/A	Haul road only (no cable crossing)	N/A	Off-line (temporary haul road only)
<b>UT188</b>	Utility	N/A	Haul road only (no cable crossing)	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT189</b>	Utility	N/A	Haul road only (no cable crossing)	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT055</b>	Utility	N/A	Haul road only (no cable crossing)	N/A	At grade haul road crossing (potential protection of utility required)
<b>RD062</b>	Road	N/A	Haul road only (no cable crossing)	N/A	Off-line (temporary haul road only)
<b>UT056</b>	Utility	N/A	Haul road only (no	N/A	At grade haul road crossing (potential protection of utility required)



Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
			cable crossing)		
<b>UT057</b>	Utility	N/A	Haul road only (no cable crossing)	N/A	At grade haul road crossing (potential protection of utility required)
<b>RD061</b>	Road	N/A	Haul road only (no cable crossing)	N/A	At-grade haul road crossing (outside 40m cable swathe)
<b>PROW010</b>	PROW	Wilberforce Way / Etton Bridleway No.5 - ETTOB05	Haul road only (no cable crossing)	N/A	
<b>WL090</b>	Woodland	Strip of woodland adjacent to Station House	Haul road only (no cable crossing)	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT190</b>	Utility	N/A	HDD	HDD_024	Off-line (haul road and on public highway)
<b>UT191</b>	Utility	N/A	HDD	HDD_024	Off-line (haul road and on public highway)
<b>UT168</b>	Utility	N/A	HDD	HDD_024	Off-line (haul road and on public highway)
<b>RD062</b>	Road	Spring Road	HDD	HDD_024	Off-line (haul road and on public highway)
<b>UT169</b>	Utility	N/A	HDD	HDD_024	Off-line (haul road and on public highway)
<b>RD158</b>	Road	Access Track to Station House	HDD	HDD_024	Off-line (haul road and on public highway)
<b>PROW010</b>	PROW	Wilberforce Way / Etton Bridleway No.5 - ETTOB05	HDD	HDD_024	Off-line (haul road and on public highway)
<b>RD063</b>	Road	Kiplingcotes Lane	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT108</b>	Utility	11KV - ARRAS GPO TEE 51164 - GARDHAM ROAD LSI 8398 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
UT072	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
EN003	Environmental	Yorkshire Wolds Way	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
PROW011	PROW	Goodmanham Footpath No.6 - GOODF06	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
UT109	Utility	11KV - EVERLEY ROAD 6903 - ARRAS KIPLINGCOATES LANE 5728 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
UT058	Utility	N/A	HDD	HDD_025	At grade haul road crossing (potential protection of utility required)
RD073	Road	Weighton Hill A1079	HDD	HDD_025	At-grade haul road crossing (outside 40m cable swathe)
UT192	Utility	N/A	HDD	HDD_025	At grade haul road crossing (potential protection of utility required)
UT110	Utility	11KV - MIDDLEDALE FARM 10421 - NCTM - 00733393 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
RD074	Road	N/A	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
UT111	Utility	11KV - SANCTON ROAD PMAR 52098 - SANCTON ROAD 4591 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
UT112	Utility	33KV - BEVERLEY LANE 51737 - SANCTON ROAD LSI 33 KV 7346 (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
PROW012	PROW	Market Weighton Footpath No.7 - MWEIF07	Haul road only (no cable crossing)	N/A	N/A

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
UT059	Utility	N/A	HDD	HDD_026	At grade haul road crossing (potential protection of utility required)
RD075	Road	Sancton Road/ Gaufer Hill A1034	HDD	HDD_026	At-grade haul road crossing (outside 40m cable swathe)
WC365	Water	East Riding of Yorkshire Council	Open Cut	N/A	Culvert (within 40m swathe)
UT004	Utility	N/A	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
WC339	Water	East Riding of Yorkshire Council	Open Cut	N/A	Culvert (within 40m swathe)
PROW013	PROW	Market Weighton Footpath No.11 - MWEIF11	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
WC131	Water	Bowman Drain - East Riding of Yorkshire Council	Open Cut	N/A	Culvert (within 40m swathe)
UT216	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
UT113	Utility	11KV - MIDDLEDALE FARM 10421 - NCTM - 00733393 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
WC132	Water	East Riding of Yorkshire Council	Open Cut	N/A	Culvert (outside 40m swathe)
UT060	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
WC133	Water	East Riding of Yorkshire Council	Open Cut	N/A	Culvert (outside 40m swathe)
RD076	Road	Cliffe Road	Open Cut	N/A	At-grade haul road crossing (outside 40m cable swathe)
UT114	Utility	11KV - WEIGHTON LONG LANE HSAR 10430 - CROSSFIELD DRAIN 53331 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (outside 40m cable swathe)
<b>Route Section 3</b>					
WC134	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
WC135	Water	East Riding of Yorkshire Council	Open Cut	N/A	Culvert (within 40m swathe)
RD145	Road	N/A	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>UT061</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT115</b>	Utility	11KV - RED HOUSE SPUR SECTIONALISERS 51463 - COMPACT FARM LSI 6886 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC155</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT116</b>	Utility	11KV - CARR LANE 1595 - LONG LANE PMAR 46461 (OHL)	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>RD077</b>	Road	Sand Lane	Open Cut	N/A	At-grade haul road crossing (outside 40m cable swathe)
<b>UT062</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT194</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT195</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT063</b>	Utility	N/A	Haul road only (no cable crossing)	N/A	At grade haul road crossing (potential protection of utility required)
<b>WC157</b>	Water	Drain - Ouse & Humber Drainage Board	HDD	HDD_027	Culvert (within 40m swathe)
<b>WC185</b>	Water	Drain - Ouse & Humber Drainage Board	HDD	HDD_027	Culvert (within 40m swathe)
<b>WC333</b>	Water	Back Delfin - Ouse & Humber Drainage Board	HDD	HDD_027	Culvert (outside 40m swathe)
<b>PROW035</b>	PROW	To be confirmed	HDD	HDD_027	At-grade haul road crossing (outside 40m cable swathe)
<b>WC331</b>	Water	Market Weighton Canal - Environment Agency	HDD	HDD_027	Temporary bridge
<b>UT196</b>	Utility	N/A	HDD	HDD_027	At grade haul road crossing (potential protection of utility required)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>UT117</b>	Utility	11KV - CARR LANE 1595 - LOCK LANE 6880 TEED (OHL)	HDD	HDD_027	At-grade haul road crossing (outside 40m cable swathe)
<b>WC332</b>	Water	Egremont Drain - Ouse & Humber Drainage Board	HDD	HDD_027	Culvert (outside 40m swathe)
<b>WC159</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>WC161</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>WC164</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT064</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>RD078</b>	Road	Lock Lane	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT197</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>WC328</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>WC326</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>RD079</b>	Road	Skiff Lane	HDD - Potentially Open Cut	HDD_028	At-grade haul road crossing (outside 40m cable swathe)
<b>UT065</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_028	At grade haul road crossing (potential protection of utility required)
<b>UT118</b>	Utility	11KV - LOCK LANE 6880 - HOLME AIRFIELD INDUSTRIAL 10422 TEED (UG CABLE)	HDD - Potentially Open Cut	HDD_028	At grade haul road crossing (potential protection of utility required)
<b>UT198</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_028	At grade haul road crossing (potential protection of utility required)
<b>WC165</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>WC324</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>UT199</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_029	At grade haul road crossing (potential protection of utility required)
<b>WC321</b>	Water	Main Drain - Ouse & Humber Drainage Board	HDD - Potentially Open Cut	HDD_029	Culvert (within 40m swathe)
<b>WC152</b>	Water	Ouse & Humber Drainage Board	HDD - Potentially Open Cut	HDD_029	Culvert (within 40m swathe)
<b>UT066</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_029	At grade haul road crossing (potential protection of utility required)
<b>RD080</b>	Road	Drain Lane	HDD - Potentially Open Cut	HDD_029	At-grade haul road crossing (outside 40m cable swathe)
<b>WC316</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>WC314</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT119</b>	Utility	11KV - BURSEA LODGE FARM 55456 - BURSEA LANE END SPUR 50371 (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC311</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT202</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>RD089</b>	Road	Bursea Lane	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT067</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>WC306</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT120</b>	Utility	11KV - NEWPORT 7307 - HOLME ON SPALDING MOOR 2899 (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>UT121</b>	Utility	11KV - NEWPORT NORTH 6809 - SSWH-00130237 (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC303</b>	Water	Ouse & Humber Drainage Board	HDD	HDD_030	Culvert (outside 40m swathe)
<b>WC302</b>	Water	River Foulness - Ouse & Humber Drainage Board	HDD	HDD_030	Temporary bridge
<b>WL058</b>	Woodland	Woodland adjacent to River Foulness	HDD	HDD_030	Off-line (temporary haul road only)
<b>WC172</b>	Water	Ouse & Humber Drainage Board	Open Cut		Culvert (within 40m swathe)
<b>PROW014</b>	PROW	Spaldington Footpath No.12 - SPALF12	Open Cut		At-grade haul road crossing (within 40m cable swathe)
<b>WL060</b>	Woodland	Strip of woodland adjacent to Commonend/Feathered Drain	HDD	HDD_031	Off-line (on public highway)
<b>WC173</b>	Water	Commonend/Feathered Drain	HDD	HDD_031	Off-line (on public highway)
<b>WC487</b>	Water	Unnamed drain off Commonend/Feathered Drain	HDD	HDD_031	Off-line (on public highway)
<b>WC299</b>	Water	Bishopsoil Drain / Featherbed Drain - Ouse & Humber Drainage Board	HDD	HDD_031	Off-line (on public highway)
<b>UT215</b>	Utility	N/A	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC174</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT203</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>RD092</b>	Road	Sleights Lane	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT123</b>	Utility	N/A	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT124</b>	Utility	11KV - YOKEGATE SPUR 11070 - OAKDENE 3930 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT125</b>	Utility	11KV - YOKEGATE SPUR 11070 - OAKDENE 3930 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>UT204</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>WC179</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>WC301</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>WC181</b>	Water	Ouse & Humber Drainage Board	HDD	HDD_032	Culvert (within 40m swathe)
<b>RD093</b>	Road	A614	HDD	HDD_032	At-grade haul road crossing (outside 40m cable swathe)
<b>UT205</b>	Utility	N/A	HDD	HDD_032	At grade haul road crossing (potential protection of utility required)
<b>WC295</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>RD147</b>	Road	N/A	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT126</b>	Utility	11KV - SPALDINGTON LANE 7348 - CAVILLE HALL 7333 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC158</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>EN004</b>	Environmental	N/A	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC184</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT127</b>	Utility	11KV - BRIND EAST SPUR 49925 - NCTM-00805129 (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC183</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT068</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)



Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>UT128</b>	Utility	33KV - SPALDINGTON AIRFIELD WINDFARM 54148 - STATION ROAD HOWDEN 54164 (UG CABLE)	HDD - Potentially Open Cut	HDD_033	At grade haul road crossing (potential protection of utility required)
<b>RD094</b>	Road	Wood Lane B1228	HDD - Potentially Open Cut	HDD_033	At-grade haul road crossing (within 40m cable swathe)
<b>UT207</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_033	At grade haul road crossing (potential protection of utility required)
<b>UT208</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_033	At grade haul road crossing (potential protection of utility required)
<b>UT209</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_033	At grade haul road crossing (potential protection of utility required)
<b>EN005</b>	Environmental	Trees adjacent to unnamed drain, North Howden	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC186</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>RA003</b>	Rail	Wressle to Howden Line	HDD	HDD_034	Off-line (haul road and on public highway)
<b>WL091</b>	Woodland	Strips of Woodland adjacent to railway line	HDD	HDD_034	Off-line (haul road and on public highway)
<b>PROW015</b>	PROW	Howden Footpath No.13 - HOWDF13	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>PROW016</b>	PROW	Wressle Footpath No.9 - WRESF09	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT129</b>	Utility	33KV - THORPE ROAD 7424 - NCTM-00742329 (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>PROW017</b>	PROW	Wressle Footpath No.8 - WRESF08	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC366</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>UT075</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT130</b>	Utility	33KV - OSGODBY 7443 - THORPE ROAD WEST LSI 51327 (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>PROW018</b>	PROW	Wressle Footpath No.10 - WRESF10	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT131</b>	Utility	11KV - NEWSHOLME BEECHTREE FARM 11155 - HOWDEN STATION ROAD SPUR 50835 TEED (OHL)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC290</b>	Water	Black Dyke - Ouse & Humber Drainage Board	HDD - Potentially Open Cut	HDD_035	Culvert (within 40m swathe)
<b>EN006</b>	Environmental	N/A	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT210</b>	Utility	N/A	HDD	HDD_036	At grade haul road crossing (potential protection of utility required)
<b>WC191</b>	Water	Ouse & Humber Drainage Board	HDD	HDD_036	Culvert (outside 40m swathe)
<b>UT026</b>	Utility	N/A	HDD	HDD_036	At grade haul road crossing (potential protection of utility required)
<b>RD095</b>	Road	A63	HDD	HDD_036	At-grade haul road crossing (outside 40m cable swathe)
<b>UT132</b>	Utility	11KV - 185 SQ.MM PICAS, DERWENT PUMPING STATION 7328 - HOWDEN COCKED HAT CLOSE 10520 TEED (UG CABLE)	HDD	HDD_036	At grade haul road crossing (potential protection of utility required)
<b>UT069</b>	Utility	N/A	HDD	HDD_036	At grade haul road crossing (potential protection of utility required)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>WL092</b>	Woodland	Newsholme Christmas Tree Farm	HDD	HDD_036	At-grade haul road crossing (outside 40m cable swathe)
<b>WC287</b>	Water	New Drain - Ouse & Humber Drainage Board	HDD	HDD_036	Culvert (within 40m swathe)
<b>WC286</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>PROW019</b>	PROW	Asselby Footpath No.1 - ASSEF01	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC285</b>	Water	Asselby Marsh Drain - Ouse & Humber Drainage Board	HDD - Potentially Open Cut	HDD_037	Culvert (within 40m swathe)
<b>PROW020</b>	PROW	Asselby Footpath No.2 - ASSEF02	HDD - Potentially Open Cut	HDD_037	At-grade haul road crossing (within 40m cable swathe)
<b>WC198</b>	Water	Asselby Marsh Lane Drain - Ouse & Humber Drainage Board	HDD - Potentially Open Cut	HDD_037	Culvert (within 40m swathe)
<b>UT019</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT211</b>	Utility	N/A	HDD	HDD_038	At grade haul road crossing (potential protection of utility required)
<b>UT070</b>	Utility	N/A	HDD	HDD_038	At grade haul road crossing (potential protection of utility required)
<b>RD097</b>	Road	Main Street, Asselby	HDD	HDD_038	At-grade haul road crossing (within 40m cable swathe)
<b>PROW030</b>	PROW	Trans Pennine Trail National Cycle Network Route	HDD	HDD_038	At-grade haul road crossing (within 40m cable swathe)
<b>UT133</b>	Utility	11KV - KNEDLINGTON PINFOLD LANE 7025 - MARSH CLOUGH 563 TEED (OHL)	HDD	HDD_038	Off-line (haul road and on public highway)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>WL093</b>	Woodland	Strip of woodland near Main Street, Asselby	HDD	HDD_038	Off-line (haul road and on public highway)
<b>WC199</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>RD098</b>	Road	Back Lane, Asselby	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC276</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT074</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>RD100</b>	Road	Holycroft Lane	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>UT013</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>WC278</b>	Water	Ouse & Humber Drainage Board	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT012</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>WC277</b>	Water	Seave Carr Drain	Open Cut	N/A	N/A
<b>WC471</b>	Water	Lowfield Drain - Ouse & Humber Drainage Board	HDD - Potentially Open Cut	HDD_039	Culvert (within 40m swathe)
<b>UT071</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_039	At grade haul road crossing (potential protection of utility required)
<b>RD102</b>	Road	Gateland Field Lane	HDD - Potentially Open Cut	HDD_039	At-grade haul road crossing (within 40m cable swathe)
<b>UT134</b>	Utility	11KV - ASSELBY GAS SPUR 11153 - ASSELBY GAS 7302 TEED (OHL)	HDD - Potentially Open Cut	HDD_039	At-grade haul road crossing (within 40m cable swathe)
<b>UT219</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_040	At grade haul road crossing (potential protection of utility required)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>RD150</b>	Road	Bankfield Lane	HDD - Potentially Open Cut	HDD_040	At-grade haul road crossing (within 40m cable swathe)
<b>WC203</b>	Water	Bankfield Lane Drain - Ouse & Humber Drainage Board	HDD - Potentially Open Cut	HDD_040	Culvert (within 40m swathe)
<b>WC203</b>	Water	Ouse & Humber Drainage Board	HDD - Potentially Open Cut	HDD_040	Culvert (within 40m swathe)
<b>PROW021</b>	PROW	Ouse Towpath/Barmby on the Marsh Footpath No.3 - BOTMF03	HDD	HDD_041	Off-line (on public highway)
<b>WC202</b>	Water	River Ouse - Environment Agency	HDD	HDD_041	Off-line (on public highway)
<b>Route Section 4</b>					
<b>PROW023</b>	PROW	35.47/5/2 (footpath)	HDD	HDD_041	Off-line (on public highway)
<b>PROW024</b>	PROW	35.47/5/2 (footpath)	Open Cut		Not applicable
<b>WC472</b>	Water	Black Tom Drain - Selby Area IDB	HDD - Potentially Open Cut	HDD_042	Culvert (within 40m swathe)
<b>PROW026</b>	PROW	35.47/5/2 (footpath)	HDD - Potentially Open Cut	HDD_042	Not applicable
<b>PROW027</b>	PROW	35.47/9/1 (footpath)	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC481</b>	Water	Unnamed Drain - Selby Area IDB	Open Cut	N/A	Culvert (within 40m swathe)
<b>UT164</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT165</b>	Utility	N/A	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)
<b>UT140</b>	Utility	LV - 300 SQ.MM WAVEFORM - 3 CORE (UG CABLE)	Open Cut	N/A	At grade haul road crossing (potential protection of utility required)

Obstruction Reference	Type	Name / Description	Crossing Method	HDD Crossing Reference (where applicable - see Table 3-5)	Haul Road Arrangement
<b>RD148</b>	Road	Main Road	Open Cut	N/A	At-grade haul road crossing (within 40m cable swathe)
<b>WC482</b>	Water	Selby Area IDB	Open Cut	N/A	Culvert (within 40m swathe)
<b>WC483</b>	Water	Selby Area IDB	Open Cut	N/A	Culvert (within 40m swathe)
<b>PROW029</b>	PROW	35.26/6/1 (footpath)	HDD - Potentially Open Cut	HDD_043	At-grade haul road crossing (within 40m cable swathe)
<b>WC488</b>	Water	Back Lane Drain	HDD - Potentially Open Cut	HDD_043	Culvert (within 40m swathe)
<b>PROW028</b>	PROW	35.26/5/1 (footpath)	HDD - Potentially Open Cut	HDD_043	At-grade haul road crossing (within 40m cable swathe)
<b>UT217</b>	Utility	N/A	HDD - Potentially Open Cut	HDD_043	At grade haul road crossing (potential protection of utility required)
<b>UT141</b>	Utility	11KV - DRAX BACK LANE 7534 - BARLOW PMAR 46490 TEED (OHL)	HDD - Potentially Open Cut	HDD_043	At-grade haul road crossing (within 40m cable swathe)
<b>RD149</b>	Road	Wren Hall Lane	HDD - Potentially Open Cut	HDD_043	At-grade haul road crossing (within 40m cable swathe)



# Scotland England Green Link 2 - English Onshore Scheme

Environmental Statement:  
Volume 3 - Appendices

Appendix 3B - Electric and Magnetic Fields



## **Scotland to England Green Link 2 (SEGL 2) AC and DC cables- Electric and Magnetic Fields (EMFs)**

### **What electric and magnetic fields could the SEGL2 project produce?**

Electric and magnetic fields (EMFs) are produced wherever electricity is used. A key characteristic of EMFs is their frequency. They always have the same frequency as the electricity that produced them. Most electricity supply in the UK is alternating current (AC) with a frequency of 50 cycles per second or 50 hertz (Hz). So, the EMFs it produces also alternate or changes direction with a frequency of 50 Hz. Some cables however use direct current (DC), so they will produce steady EMFs that always point in the same direction. The longest cable routes proposed for this project are DC cables, carrying power from Scotland to England, starting and ending at converter stations. AC cables circuits are also proposed as part of the project to take power from the converter stations and connect to the existing transmission system.

Converter stations at the ends of DC cable circuits, convert DC to AC power so that it can be connected to the main AC transmission system, or the reverse. As these convert the power from AC to DC, they produce both AC and DC EMFs. The EMFs from the equipment inside a converter station do not extend much, if at all, beyond the perimeter fence - the EMFs outside the perimeter come from the cables entering or leaving the converter station.

Underground cables, whether AC or DC have a metal sheath (a metallic cover surrounding the cable), which screens the electric field altogether. So, the only field that would be produced by these cables is a magnetic field. AC and DC magnetic fields have different effects; therefore, each has a separate and distinct set of exposure guidelines. (A different set of EMFs again are produced by radiofrequency electricity such as TV, radio and mobile communications – these have frequencies of typically hundreds of millions of Hz.)

This project will use both AC and DC technology, so we consider each of these magnetic fields separately.

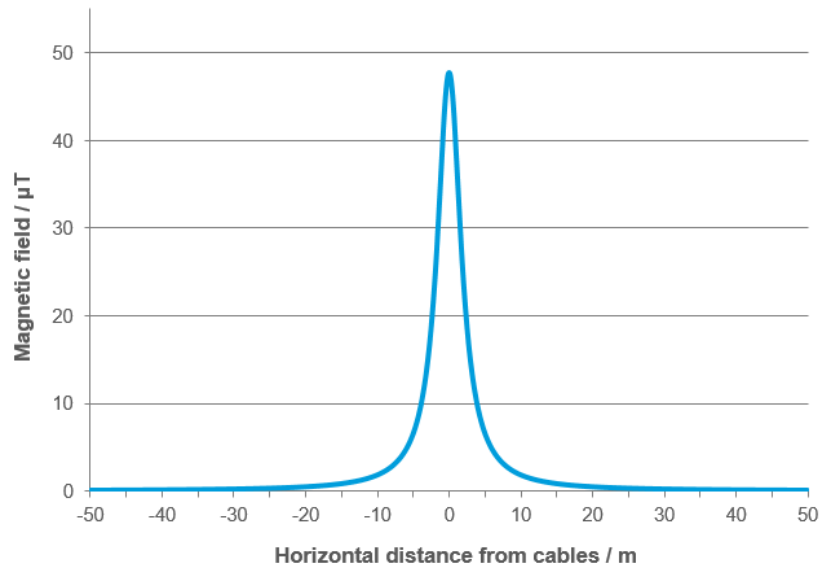
### **DC cables: the Earth's field and the field from DC cables**

The Earth has its own natural DC magnetic field (or geomagnetic field). In the UK, this is around 50 microtesla but varies slightly with geographic location. The Earth's magnetic field is always present, and it is this field that compasses respond to.

The magnetic field that a DC cable produces depends on the current that it is carrying at any one time and the cable design. For the SEGL2 cable designs, the maximum EMF the cables could produce when operating at maximum capability is about 50 microteslas ( $\mu\text{T}$ ) at 1m above ground. This falls rapidly to the sides of the cable, as shown below.

This DC field from the cable combines with the Earth's magnetic field and can either increase or decrease the overall field depending on the relative directions. As a result, close to the cable route, the overall DC magnetic field is altered by the cable. However, at a distance beyond about 13 m, the field from the cable would be below 1  $\mu\text{T}$  and would make little difference to the Earth's field.

#### **What effects do DC fields have?**



Because the field from the cable alters the Earth's magnetic field, there is an effect on magnetic compasses when they are close to the cable – they can point in the wrong direction. This very rarely causes problems in practice, mainly because the effect is localised – it is only within about 10 m of the cable itself.

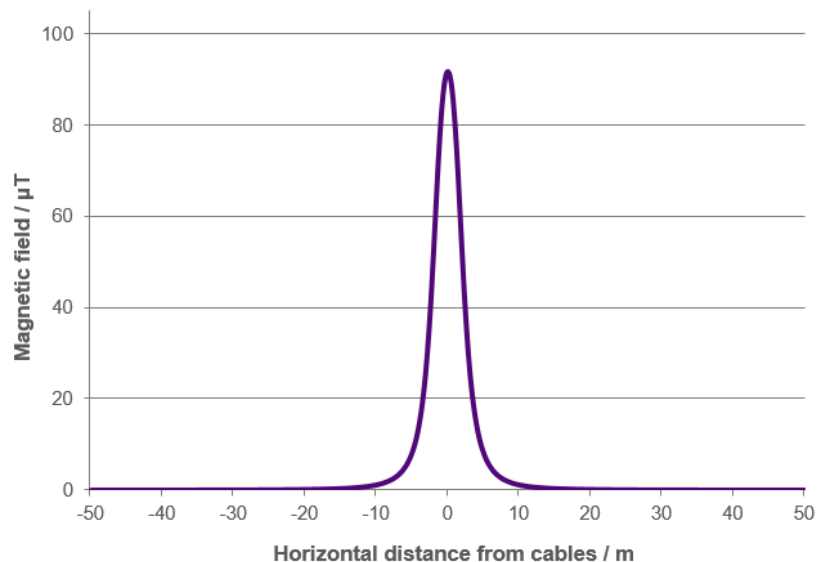
The exposure guideline for the public in the UK (which is set by the International Commission on Non-Ionizing Radiation Protection) for DC magnetic fields is 40,000  $\mu\text{T}$ . Additionally, many appliances we use contain magnets, such as our mobile phones which can produce DC magnetic fields in excess of 1000  $\mu\text{T}$ , significantly more than the 50  $\mu\text{T}$  produced by a cable.

The fact that we have evolved in the Earth's DC magnetic field makes it unlikely that there are any adverse health effects from any sources of fields at these levels. The available evidence from studies of humans (epidemiological studies) and animals has been reviewed by the UK's Health Protection Agency and internationally by the World Health Organization and the International Agency for Research on Cancer. None of these expert bodies has identified any health risk for humans or animals.

#### **AC cables: magnetic fields**

The AC cable circuits proposed as part of the SEGL2 project will operate at 50 Hz and therefore produce magnetic fields at the same frequency. Our household wiring, appliances and electricity supply are all sources of 50 Hz magnetic fields. So, they are around us all the time in modern life and cables are a source, but just one of many.

As with DC cables, the magnetic field AC cables produce also depends primarily on the current. The design of the cables and distance between circuits can also influence the fields produced. The maximum magnetic field the proposed AC cable designs for SEGL2 is capable of producing is 92  $\mu\text{T}$ . The magnetic fields reduce very quickly with distance to the sides of the cables, and 20 m from the outer cable the fields have reduced to 0.12  $\mu\text{T}$ . These are also very worst-case examples, where the maximum current is flowing through the cables. On a day-to-day basis typical magnetic fields would be significantly lower.



### Are there any health effects associated with AC fields?

Some people worry that EMFs from our equipment have negative health effects. We take these concerns seriously and want to keep the public, our contractors and employees safe.

In the UK, we have a carefully thought-out set of exposure guidelines and policies set to protect us all against EMF exposure. These policies and guidelines have been set by independent scientific experts who have reviewed all of the science investigating EMF and health outcomes. Research into the potential health risks associated with EMFs has been ongoing for more than 30 years and a large body of scientific evidence has been amassed. After decades of research the weight of evidence is against there being any health risks of EMFs below the guideline limits.

The guideline limit for public exposure to 50 Hz magnetic fields is 360  $\mu\text{T}$ . National Grid has policies and procedures in place, at the design phase of any every project, to ensure that all equipment we build will comply with public EMF exposure limits.

The maximum magnetic field from the proposed AC cables will be around 25% of the public exposure limit. On any typical day the cables do not operate at their maximum capacity, so this represents a very worst-case. The magnetic field from the cables also reduces extremely quickly with distance to the sides, and typically will have reduced to a background level 20m from the cables.

All of the equipment proposed for the SEGL2 connection complies with independent safety guidelines set to protect us all against EMF exposure.

### More information

More information is available from National Grid's website at [www.emfs.info](http://www.emfs.info), or from the EMF helpline on 0845 702 3270 or [emfhelpline@nationalgrid.com](mailto:emfhelpline@nationalgrid.com).