



**RWE Renewables UK Dogger Bank
South (West) Limited**

**RWE Renewables UK Dogger Bank
South (East) Limited**

Dogger Bank South Offshore Wind Farms

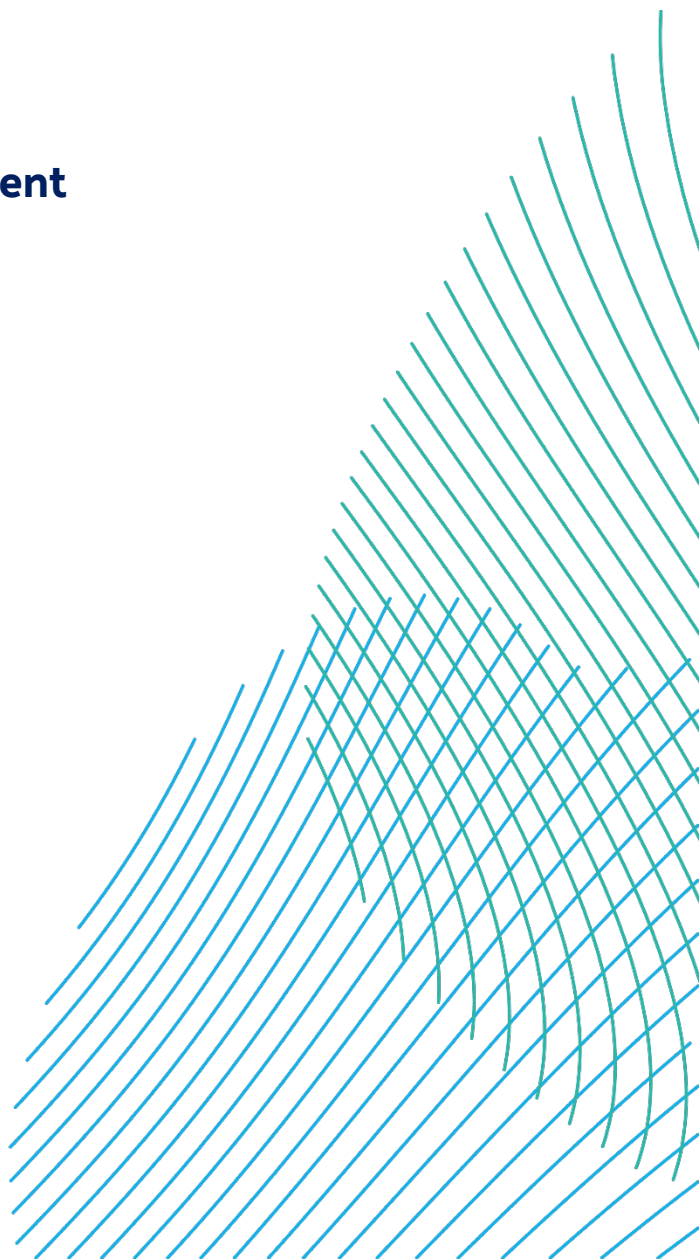
Appendix 24.1 Transport Assessment

25/04/2023

Document Reference: 004300133

Revision: 04

Unrestricted





Company:	RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited	Asset:	Development
Project:	Dogger Bank South Offshore Wind Farms	Sub Project/Package:	Consents
Document Title or Description:	Appendix 24.1 Transport Assessment		
Document Number:	004300133-04	Contractor Reference Number:	PC2340-RHD-ON-ZZ- AX-Z-0024

The document Originator shall complete this Cover Sheet and may give guidance below on any actions required by the recipient(s). The document Checker and Approver must not be the same person. The Document Author and Approver must not be the same person. The Approver must not be less senior than the Author.

COPYRIGHT © RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited.
All pre-existing rights reserved.
This document is supplied on and subject to the terms and conditions of the Contractual Agreement relating to this work, under which this document has been supplied, in particular:

LIABILITY
In preparation of this document RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited has made reasonable efforts to ensure that the content is accurate, up to date and complete for the purpose for which it was contracted. RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited makes no warranty as to the accuracy or completeness of material supplied by the client or their agent.
Other than any liability on RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited detailed in the contracts between the parties for this work RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited shall have no liability for any loss, damage, injury, claim, expense, cost or other consequence arising as a result of use or reliance upon any information contained in or omitted from this document.
Any persons intending to use this document should satisfy themselves as to its applicability for their intended purpose.
The user of this document has the obligation to employ safe working practices for any activities referred to and to adopt specific practices appropriate to local conditions.

Rev No.	Date	Status/Reason for Issue	Author	Checked by	Approved by
02	09/03/2023	First Issue	ST	JF	RH
03	28/03/2023	Second Issue	ST	JF	JF
04	25/04/2023	Third Issue	CB	JF	LT

Unrestricted

Contents

24.1	Transport Assessment	5
24.1.1	Introduction	5
24.1.1.1	Background	5
24.1.1.2	Transport Assessment Scope.....	5
24.1.1.3	Consultation.....	7
24.1.2	Baseline Traffic Flows	8
24.1.2.1	Baseline Traffic Data Collection	8
24.1.2.2	Future Year Traffic Flows	10
24.1.2.3	Summary of Baseline Traffic Flows	10
24.1.3	Baseline Road Safety	11
24.1.3.1	Introduction	11
24.1.3.2	Collision Rates	12
24.1.3.3	Collision Clusters	16
24.1.3.4	Collision Analysis	17
24.1.3.4.1	Link 1 – A165 (Carnaby to Lissett)	17
24.1.3.4.2	Link 2 – A165 (Lissett to Beeford).....	18
24.1.3.4.3	Link 4 – B1242 (Lissett to Skipsea)	19
24.1.3.4.4	Link 5 – B1249/Beeford Road	20
24.1.3.4.5	Link 6 – B1242 (Skipsea to end of Travel and Transport Study Area (TTSA))	20
24.1.3.4.6	Link 8 – Catfoss Road	21
24.1.3.4.7	Link 9 – A165 (Brandesburton to Leven).....	21
24.1.3.4.8	Link 10 – A1035 (Leven Roundabout to end of TTSA).....	23
24.1.3.4.9	Link 12 – A165 (Leven Bypass).....	24
24.1.3.4.10	Link 15 – A165 (Skirlough to Coniston).....	25
24.1.3.4.11	Link 16 – A165 Coniston	26
24.1.3.4.12	Link 18 – Holderness Road.....	28
24.1.3.4.13	Link 19 – Mount Pleasant/A1033.....	28
24.1.3.4.14	Link 20 – A1033 Slip Road	32
24.1.3.4.15	Link 24 – A63	34
24.1.3.4.16	Link 26 – A63	38

24.1.3.4.17	Link 28 – A15/Boothferry Road	38
24.1.3.4.18	Link 29 – A15/Humber Bridge	40
24.1.3.4.19	Link 30 – A164 (Wingfield Farm roundabout to B1231).....	41
24.1.3.4.20	Link 32 – A164 (B1232/Albion Lane roundabout to Castle Road roundabout)	42
24.1.3.4.21	Link 35 – A164 (Dunflat Road to A1079).....	44
24.1.3.4.22	Link 36 – Dunflat Road.....	45
24.1.3.4.23	Link 37 – Copplesflat Lane	45
24.1.3.4.24	Link 38 – A164 (A1079 to A164/Victoria Road/Wingfield Way Roundabout)	46
24.1.3.4.25	Link 40 – A1033 (Ennerdale roundabout to Roebank roundabout).....	47
24.1.3.4.26	Link 45 – A1033	49
24.1.3.4.27	Link 46 – A1174 (Dunswell Roundabout to A1174/Ferry Lane/Long Land junction).....	51
24.1.3.4.28	Link 49 – A1174 (Ferry Lane/Long Lane/A1174 to A164/Eastfields Rad roundabout).....	53
24.1.3.4.29	Link 51 – A164 / Woodmansey.....	54
24.1.3.4.30	Link 55 – A1035.....	55
24.1.3.4.31	Link 59 – A164/Drifffield Road	56
24.1.3.4.32	Link 60 – A1035.....	57
24.1.3.4.33	Link 61 – A1035/Dog Kennel Lane	57
24.1.3.4.34	Link 62 – A1174/York Road	59
24.1.3.4.35	Link 65 – A1079/Bishop Burton.....	60
24.1.3.4.36	Link 74 – A1033 and A1165.....	61
24.1.3.4.37	Link 75 – A1033/Sutton Road.....	64
24.1.4	Construction Trip Generation and Assignment	66
24.1.4.1	Introduction	66
24.1.4.2	Construction Scenarios	66
24.1.4.3	Material and Personnel Demand	73
24.1.4.4	Construction Traffic Assignment.....	75
24.1.4.4.1	Construction Traffic Assignment (Destinations)	75
24.1.4.4.2	Construction traffic assignment (origins).....	81
24.1.4.5	Construction Traffic Assignment Summary	83
24.1.5	Access Strategy	84

24.1.5.1	Introduction	84
24.1.5.2	Onshore Export Cable Corridor and Landfall Accesses	84
24.1.5.3	Onshore Substation Zone 1 Access	85
24.1.5.4	Onshore Substation Zone 4 Access	85
24.1.5.5	Access Design Development	86
24.1.6	Summary	87

Tables

Table 24-1	Document Map	6
Table 24-2	Traffic Flow Data Sources	9
Table 24-3	Baseline Collision Rates per Link	12
Table 24-4	Summary of Vehicle Trips Per Scenario	69
Table 24-5	Traffic and Transport Worst Case Scenarios	71
Table 24-6	Proposed Accesses and Associated Sections	76

Volume 2 - Figures

Figure 24-1-1 Traffic Survey Locations

Figure 24-1-2 Proposed Accesses and Crossings

Volume 3 – Annexes

Annex 1 Summary of ATC traffic counts

Annex 2 Details of growth factors

Annex 3 Forecast future year (2026) traffic flows

Annex 4 Calculation of collision rates

Annex 5 Summary of HGV and LV trips per section (All scenarios)

Annex 6 Derivation of HGV and LV trips

Annex 7 HGV and LV trips per section per month (Projects in Isolation)

Annex 8 HGV and LV trips per section per month (Projects Concurrently)

Annex 9 Distribution of local accommodation

Annex 10 Distribution of local employees

Annex 11 Assignment of LV trips (Projects in Isolation)

Annex 12 Assignment of LV trips (Projects Concurrently)

Annex 13 Assignment of HGV trips (Projects in Isolation)

Annex 14 Assignment of HGV trips (Projects Concurrently)

Annex 15 Summary of HGV and LV assignment per link (Projects in Isolation)

Annex 16 Summary of HGV and LV assignment per link (Projects Concurrently)

Annex 17 Outline Access Designs

Glossary

Term	Definition
The Applicant	RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited as the owners of DBS West and DBS East respectively are the named undertakers that will have the benefit of the Development Consent Order. References in this document to obligations on, or commitments by, 'the Applicant' are given on behalf of RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited.
Dogger Bank South (DBS) offshore wind farms	The collective name for the two Projects, DBS East and DBS West.
Heavy Goods Vehicle (HGV)	HGV is the term for any vehicle with a Gross Weight over 3.5 tonnes. This is also used as a proxy for HGVs and buses / coaches recognising the similar size and environmental characteristics of the respective vehicle types.
Landfall	The point on the coastline at which the offshore export cables are brought onshore, connecting to the onshore export cables at the Transition Joint Bay.
Light Vehicle (LV)	The term 'light vehicle' is used to describe the range of vehicles that would be used by construction employees, i.e. cars, vans, pick-ups, minibuses, etc.
Movement	A single trip (i.e. the arrival or departure from site) for the transfer of employees or delivery of goods.
Onshore Export Cables	Onshore export cables take the electricity from the Transition Joint Bay to the onshore substations.
Onshore Substations Zone	Parcels of land within the Onshore Development Area where the onshore substation infrastructure (including the haul roads, temporary construction compounds and associated cable routeing) may be located.

Term	Definition
Onshore Export Cable Corridor	This is the area which includes cable trenches, haul roads, spoil storage areas, and limits of deviation for micro-siting. For assessment purposes, the cable corridor does not include the onshore substations, Transition Joint Bays or temporary access routes; but includes construction compounds (purely for the cable route).
The Projects	DBS East and DBS West (collectively referred to as the Dogger Bank South offshore wind farms).
Relevant Highway Authorities	The term relevant highway authorities for the Projects includes all highway authorities within the traffic and transport study area, namely, East Riding of Yorkshire Council, Hull City Council and National Highways.
Serious Collision	A collision resulting in serious injury for which a person is detained in hospital as an 'in-patient', or any of the following injuries whether or not they are detained in hospital: fractures, concussion, internal injuries, crushing, burns (excluding friction burns), severe cuts, severe general shock requiring medical treatment and injuries causing death 30 or more days after the accident.
Slight Collision	A collision resulting in a slight injury of a minor character such as a sprain (including neck whiplash injury), bruise or cut which are not judged to be severe, or slight shock requiring roadside attention. This definition includes injuries not requiring medical treatment.
Traffic and Transport Study Area (TTSA)	Area where potential impacts from the Projects could occur, as defined for the traffic and transport EIA topic.
Vehicle (HGV, Traffic) trips	A vehicle movement (i.e. the arrival or departure from site) for the transfer of employees or delivery of goods.

Acronyms

Term	Definition
AADT	Annual Average Daily Traffic
AAWT	Annual Average Weekday Traffic
AC	Access
ATC	Auto Matic Traffic Count
CR	Crossing Point
CTMP	Construction Traffic Management Plan
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
EIA	Environmental Impact Assessment
ETG	Expert Topic Group
GEART	Guidelines for the Environmental Assessment of Road Traffic
HGV	Heavy Goods Vehicle
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
LV	Light Vehicle
OCTMP	Outline Construction Traffic Management Plan
PEIR	Preliminary Environmental Information Report
PPG	Planning Practice Guidance
TA	Transport Assessment
TEMPro	Trip End Model Presentation Programme
TTSA	Traffic and Transport Study Area

Term	Definition
UK	United Kingdom

24.1 Transport Assessment

24.1.1 Introduction

1. This Transport Assessment (TA) is provided as Appendix 24-1 to **Chapter 24 Traffic and Transport** of the Preliminary Environmental Information Report (PEIR) for Dogger Bank South (DBS) East and DBS West offshore wind farms, collectively known as DBS offshore wind farms (herein 'the Projects').
2. Following the introductory sections, the TA is structured as follows:
 - Section 24.1.2 provides detail of the derivation of baseline and future year traffic flows;
 - Section 24.1.3 provides the baseline road safety data;
 - Section 24.1.4 provides details of the derivation of construction traffic demand and the assignment of this demand to the traffic and transport study area;
 - Section 24.1.5 provides details of the proposed access strategy including the design of new temporary points of access to the highway network; and
 - Section 24.1.6 provides a summary.

24.1.1.1 Background

3. The following section provides a brief overview of the Projects, further detail is provided within **Chapter 5 Project Description** of the PEIR.
4. The proposed onshore construction works consist of installation of buried onshore export cables, from a landfall on East Riding of Yorkshire coastline near Skipsea to termination at newly constructed onshore substations. These will be located close to a proposed new National Grid Substation at Creyke Beck, to the south of Beverley.

24.1.1.2 Transport Assessment Scope

5. It was agreed with East Riding of Yorkshire Council (at a meeting on the 23/11/2022) and Hull City Council and National Highways (at a meeting on the 21/11/2022) that **Chapter 24 Traffic and Transport** of the PEIR should be supported by a Transport Assessment (TA).
6. The TA constitutes an abridged document providing the technical inputs informing the PEIR. This includes establishing baseline traffic flows, baseline road safety data, the derivation and distribution of construction traffic and the access strategy.

7. For the purpose of assessing the impact of the Projects on the highway network, the relevant Planning Practice Guidance is 'Travel Plans, Transport Assessment and Statements' (the Transport PPG) (Department for Levelling Up, Housing and Communities, March 2014).
8. The Transport PPG key principles have shaped the development of the TA which has in turn, informed the impact assessment contained in the PEIR **Chapter 24 Traffic and Transport**. In this context, **Table 24-1** provides a summary of the requirements of the transport assessment process and where they are considered.

Table 24-1 Document Map

Transport Assessment Requirements	Where Considered
Review of salient policy and guidance	PEIR section 24.4.1
Review of baseline highway conditions	PEIR section 24.5
Derivation of baseline traffic flows	TA section 24.1.2
Derivation of future year traffic flows	TA section 24.1.2.2
Review of baseline road safety conditions	TA section 24.1.3
Derivation of construction traffic demand	TA section 24.1.4
Distribution of construction traffic	TA section 24.1.4.4
Access Strategy	TA section 24.1.5
Impact Assessment: • Severance; • Amenity; • Road Safety; • Driver Delay; and • Abnormal Loads.	PEIR section 24.6
The approach to consideration of cumulative effects	PEIR section 24.4.4

9. The PEIR **Chapter 5 Project Description** outlines that whilst DBS East and DBS West will be the subject of a single Development Consent Order (DCO) application (with a combined Environmental Impact Assessment (EIA) process), the assessment considered both DBS East and DBS West being developed in isolation, sequentially and concurrently, so that mitigation is specific to each development scenario.
10. The terms heavy goods vehicles (HGVs) and light vehicles (LVs) is used throughout this TA and are defined as follows:
 - HGV is the term for any vehicle with a Gross Weight over 3.5 tonnes, this TA also uses the term HGV as a proxy for HGVs and buses / coaches recognising the similar size and environmental characteristics of the respective vehicle types.
 - LV is used as a term to refer to employee vehicle trips and for light commercial vehicles (LCVs) deliveries to the Projects and describes the range of vehicle types that could be used (e.g. cars, vans, pick-ups, minibuses, etc).

24.1.1.3 Consultation

11. Consultation with regard to traffic and transport has been undertaken in line with the general processes described in **Chapter 6 Environmental Impact Assessment Methodology**. The key elements to date have included scoping and the ongoing technical consultation via the traffic and transport Expert Topic Group (ETG) meetings.
12. Table 24-1 of the PEIR **Chapter 24 Traffic and Transport** provides a summary of the scoping and ETG consultation responses received to date relevant to traffic and transport, and details of how these have been considered in preparing the TA and PEIR **Chapter 24 Traffic and Transport**.
13. This TA will be updated following the consultation on the PEIR in order to inform the final assessment that will be submitted with the DCO application. Full details of the consultation process will also be presented in the Consultation Report as part of the DCO application.

24.1.2 Baseline Traffic Flows

24.1.2.1 Baseline Traffic Data Collection

14. The PEIR **Chapter 24 Traffic and Transport**, is underpinned by the Guidelines for the Environmental Assessment of Road Traffic (GEART) (Institute of Environmental Assessment, 1993) for the purpose of establishing the potential impacts associated with changes in traffic from the Projects. GEART sets out broad thresholds for where changes in total daily traffic flows and HGVs may be considered significant, for the EIA impacts of:
 - Severance;
 - Amenity;
 - Road Safety; and
 - Driver Delay.
15. In the context of GEART thresholds, it is necessary to establish the following baseline traffic flows for all links within the traffic and transport study area (TTSA):
 - Annual average daily traffic flows (AADT) (including HGV component);
 - Annual average weekday traffic flows (AAWT) (including HGV component); and
 - Peak hour traffic flows (including HGV component).
16. The extent of the TTSA is shown in Figure 24-1 of the PEIR **Chapter 24 Traffic and Transport**. The TTSA is divided into 66 separate highway sections known as links, which are sections of road with similar characteristics and traffic flows. The 66 links are notated 1 to 75, noting that some links have been omitted during the development of the Projects.
17. Traffic flow data has been captured for all 66 links forming the TTSA. The datasets that are used in the assessment are summarised in **Table 24-2** and are presented graphically in **Figure 24-1-1**.

Table 24-2 Traffic Flow Data Sources

Data Set	Source	Spatial Coverage	Dates	Notes
Traffic Flows	Road Traffic Statistics (Department for Transport, 2019)	46 of the 66 links within the TTSA, including links: 1, 2, 3, 9, 12 - 35, 37, 38, 40, 45, 50 - 57, 60, 61, 63, 66, 74, 75	Traffic flows were obtained for 2019. Whilst more recent 2020/2021 data is provided, these data include periods where traffic flows were impacted due to the Covid-19 pandemic and have therefore been discounted.	National road traffic statistics provides a summary of traffic flows and vehicle composition (e.g. HGV, car, motorcycle) for a range of motorways, 'A' road and minor roads across the UK.
Traffic Flows and Vehicle Speeds	Commissioned Automatic Traffic Counts (ATCs)	18 of the 66 links within the TTSA, including links: 4 - 8, 10, 11, 36, 46, 49, 59, 62, 64, 65, 68 - 73	Traffic flows and vehicle speeds were obtained for 24 hours a day for seven days between the 01/11/2022 and 07/11/2022.	Traffic counts commissioned by the Applicant which provide classified hourly and daily count and speed data. A summary of the ATC survey results are provided as Annex 1 of this TA.

24.1.2.2 Future Year Traffic Flows

18. It is currently estimated that the earliest date that construction could commence would be 2026.
19. In order to consider a worst-case scenario, a reference year for background traffic of 2026 has been derived. The rationale for this is later years could result in potentially higher background traffic flows and therefore a lesser magnitude of change.
20. To take account of sub-regional growth in housing and employment, a proportionate approach to forecasting future traffic growth for the 2026 reference year has been agreed with Hull City Council and National Highways (at a meeting on the 21/11/2022).
21. It was agreed that the baseline flows should be factored to the future year baseline traffic demand (year 2026) using the growth factors derived from the Trip End Model Presentation Programme (known as TEMPro) Version 7.2.
22. Recognising the different baseline highway characteristics between roads within Hull City Council administration area and roads within East Riding of Yorkshire Council it was also agreed to utilise separate growth factors for the respective areas, namely:
 - TEMPro data set 72 for the Kingston upon Hull area and factoring the growth rate using the National Traffic Model Dataset AF15 all areas (a combination of urban and rural area types); and
 - TEMPro data set 72 for the East Riding of Yorkshire area and factoring the growth rate using the National Traffic Model Dataset AF15 all areas.
23. Details of the growth factors that have been applied are provided within **Annex 2**.

24.1.2.3 Summary of Baseline Traffic Flows

24. **Annex 3** provides a summary of the forecast future year 2026 traffic flows (including HGV component) for each of the links within the TTSA.

24.1.3 Baseline Road Safety

24.1.3.1 Introduction

25. To assess whether the Projects would have a significant effect on road safety, it is necessary to establish a baseline and identify any inherent road safety issues within the TTSA.
26. This review utilises historic collision data obtained from East Riding of Yorkshire Council and Hull City Council (known as STATS19 data). STATS19 includes accidents on the public highway that are reported to or by the police and which involve injury or death. These data reported to or by the police are captured on a document known as a STATS19 form. The form collects a wide variety of information about accidents (such as time, date, location, road conditions).
27. STATS19 collision data has been obtained from East Riding of Yorkshire Council for the period, 01/01/2017 to 31/12/2021 inclusive and Hull City Council for the period 31/10/2017 to 31/10/2022 inclusive. The collision data has been source for a five-year period as there can be significant variations in trends from year to year.
28. It has been agreed with Hull City Council and National Highways (at a meeting on the 21/11/2022) and East Riding of Yorkshire Council (at a meeting on the 23/11/2022) that the road safety review should examine the baseline collision data to identify those areas that are potentially sensitive to changes in traffic. It was agreed this should consists of:
 - Examining the rate of collisions per length of road in miles (known as collision rates); and
 - Reviewing the types of collisions at defined clusters to understand any patterns or trends, especially those involving HGVs and vulnerable road users (namely cyclists, pedestrians and motorcyclists).

24.1.3.2 Collision Rates

29. Collision rates have been calculated in billion vehicle miles to enable direct comparison with national road safety statistics provided within Road Casualties Great Britain (Department for Transport, 2021). The following formula has been utilised to calculate the collision rate,

$$\text{Collision rate (PIC)} = \frac{\text{Number of recorded collisions} \times 10^9}{1,825 \times \text{AADT} \times \text{Length of road (miles)}}$$

where 1,825 is the sample size in number of days over which the collision data has been sourced for the data from East Riding of Yorkshire Council (i.e. there are 1,825 days between 1 January 2017 to 31 December 2021). Similarly for the links in Hull City Council's area a sample size of 1,826 days has been used (i.e. 31 October 2017 to 31 October 2022).

30. A summary of the analysis is presented in **Table 24-3**, details of the derivation are included as **Annex 4** of this TA.

Table 24-3 Baseline Collision Rates per Link

Links	Link Description	Calculated Collision Rate (Collisions per Billion Vehicle Miles)	National Average Collision Rate (Collisions per Billion Vehicle Miles)
1	A165 Carnaby to Lissett	185	188
2	A165 Lissett to Beeford	153	188
3	A165 Beeford to Brandesburton	177	188
4	B1242 Lissett to Skipsea	517	324
5	Beeford Road	641	324
6	B1242 Skipsea to End	526	324
7	Dunnington Lane	0	324
8	Catfoss Road	1,506	324
9	A165 Brandesburton to Leven	342	188
10	A1035 Leven to Catwick	235	188
11	Catwick Stub	0	324

Links	Link Description	Calculated Collision Rate (Collisions per Billion Vehicle Miles)	National Average Collision Rate (Collisions per Billion Vehicle Miles)
12	A1035 Leven to A165	170	188
13	A165 from A1035 to Skirlaugh	161	188
14	A165 through Skirlaugh	185	188
15	A165 from Skirlaugh to Coniston	235	188
16	A165 from Coniston to Holderness Road	304	188
17	A165/Holderness Road	465	695
18	A165/Holderness Road	2,790	695
19	Mount Pleasant/A1033	854	695
20	A1033 Slip Road	713	695
21	A1033/Hedon Road	296	695
22	A1033/Hedon Road	326	695
23	A63	213	695
24	A63	474	695
25	A63	255	695
26	A63	45	188
27	A63	150	188
28	A15/Boothferry Road	214	188
29	Humberbridge	508	188
30	A164	290	188
31	A164	126	188

Links	Link Description	Calculated Collision Rate (Collisions per Billion Vehicle Miles)	National Average Collision Rate (Collisions per Billion Vehicle Miles)
32	A164	293	188
33	A164	64	188
34	A164	125	188
35	A164	305	188
36	Dunflat Road off A164	498	324
37	Coppleflat Lane	616	324
38	A164	598	188
39	B1248	0	324
40	A1033/Thomas Clarkson Way	550	695
45	A1033	707	695
46	A1174	322	188
49	A1174	292	188
50	A164/ Woodmansey	183	188
51	A164/Woodmansey	440	188
52	A1174/A164	112	695
53	A1174/A164/Swinemoor Lane	504	695
54	A1035	160	188
55	A1035	188	188
56	A1035	121	188
57	A1035/A164	176	188
58	Stub off A1035	0	324

Links	Link Description	Calculated Collision Rate (Collisions per Billion Vehicle Miles)	National Average Collision Rate (Collisions per Billion Vehicle Miles)
59	A164/Driffield Road	621	188
60	A1035	314	188
61	A1035/Dog Kennel Lane	391	188
62	A1174	261	188
63	A1079	94	188
64	Killingwoldgraves Lane	257	324
65	A1079/Bishop Burton	246	188
66	A1079	99	188
68	Coppleflat Lane	96	324
69	B1230	264	324
71	Broadgate/B1230	303	324
73	Eske Lane	0	324
74	Mount Pleasant/A1033 and Stoneferry Rd/A1165	597	695
75	Sutton Road/A1033	879	695
	Links with a collision rate higher than the national average for comparable roads.		

31. It is evident from **Table 24-3** that 30 links have a collision rate that is higher than the national average for comparable road types and may be particularly sensitive to changes in traffic flow / type. The remaining links have collision rates below the national average and are therefore not considered further.
32. Section 24.1.3.4 provides a review of the types of collisions occurring along the 30 sensitive links to understand any emerging patterns or trends that could potentially be exacerbated by an increase in traffic.

24.1.3.3 Collision Clusters

33. During consultation with the relevant highway authorities (East Riding of Yorkshire Council, Hull City Council and National Highways) it was agreed that the road safety review should also examine the baseline collision data to identify any areas where there are concentrations of collisions (known as collision clusters).
34. A definition for a collision cluster was provided to the Applicant by Hull City Council, as:
 - Areas where there have been more than four collisions in four years; or
 - Three collisions in one year.
35. It is considered that Hull City Council's definition would be equally applicable for determining potential clusters for roads within the administration areas of East Riding of Yorkshire Council and National Highways (where no definition exists).
36. A review of the STATS19 data has identified a total of 31 collision clusters within the TTSA. Section 24.1.3.4 provides a review of the types of collisions occurring at these 31 cluster sites to understand any emerging patterns or trends that could potentially be exacerbated by an increase in traffic.

24.1.3.4 Collision Analysis

37. **Section 24.1.3.2** and **24.1.3.3** identifies 30 links with a collision rate that is higher than the national average and 31 collision clusters, respectively. These locations are considered to be particularly sensitive to changes in traffic flow / type and the following section presents a review of the types of collisions occurring at these locations to understand any emerging patterns or trends that could potentially be exacerbated by an increase in traffic.
38. An assessment of the Project's construction traffic upon these links is presented within section 24.6.1 of the PEIR, **Chapter 24 Traffic and Transport** a detailed description of the baseline road safety environment follows.

24.1.3.4.1 Link 1 – A165 (Carnaby to Lissett)

39. Link 1 consists of the A165 between Wilsthorpe roundabout and Lissett. It is a rural A-road and is four miles in length and has a collision rate below the national average. A cluster of collisions (cluster 1) is however identified at the junction between link 1 and the Manor Farm access track.
40. There have been five collisions at cluster 1 during the study period comprising of four slight collisions and one serious collision; no fatalities were recorded. The collisions included:
- A rear-end shunt type collision between one car turning left into the access track and the car behind; and
 - Four rear-end shunt type collisions between cars turning right into the access track and cars behind, one being a serious collision.
41. To summarise there have been five collisions at cluster 1, all of which were rear-end shunt type collisions. There is an emerging pattern of rear-end shunt type collisions.

24.1.3.4.2 Link 2 – A165 (Lissett to Beeford)

42. Link 2 consists of the A165 between Lissett and Beeford. It is a rural A-road and is 2.9 miles in length and has a collision rate below the national average. A cluster of collisions (cluster 2) is however identified at the junction between link 2 and Main Street (south of Lissett).
43. There have been five collisions recorded at cluster 2 during the study period comprising of four slight collisions and one serious collision; no fatalities were recorded. The collisions included:
- A rear-end shunt type collision on the eastern approach to the junction on the A165;
 - A loss of control by a car driver causing a serious collision with a car in the oncoming lane on the eastern approach to junction on the A165;
 - A rear-end shunt type collision between three cars at the junction on the eastern approach on the A165;
 - A loss of control by a car driver led to a collision on entry to Main Street with another car, waiting to exit Main Street; and
 - A rear-end shunt between two cars on the western approach to the junction on the A165.
44. In summary, the collisions comprised of three rear-end shunt type collisions and two losses of control. There is an emerging pattern of rear-end shunt type collisions within collision cluster 2.

24.1.3.4.3 Link 4 – B1242 (Lissett to Skipsea)

45. Link 4 consists of the B1242 between Skipsea and the A165 at Lissett. It is a rural local road and is 2.5 miles in length and has a collision rate above the national average.
46. During the study period, there have been seven collisions recorded on the link, these comprise of two serious and five slight collisions, no fatalities were recorded. One of the collisions involved an HGV. The collisions reported on Link 4 comprise of:
- A failure to give way by a car driver pulling out of the B1242 junction onto the A165 and colliding with a second car. This collision occurred during hours of darkness, with no lighting present;
 - A serious collision between a car and motorcycle, the cause of which is unclear from the data;
 - A collision between a car and two pedestrians who were on the footway, this collision occurred during the hours of darkness with no lighting present;
 - Two losses of control on the 'S bend', near the middle of the link by Ulrome, one of these losses of control occurred during the hours of darkness with no lighting present;
 - A serious collision resulting from a loss of control involving one car colliding with an oncoming goods vehicle, on the wrong side of the road; and
 - A loss of control involving a car skidding on a wet surface and colliding with a car travelling the on the other side of the carriageway. This collision occurred during the hours of darkness with no lighting present
47. To summarise, the collisions comprised of four losses of control, one was of unknown origin, one failure to give way and one was a collision between a car and pedestrians. There is no identifiable pattern in the location of the collisions. Four of the collisions occurred during the hours of darkness with no street lighting present on the link. There is an emerging pattern of loss of control collisions and collisions occurring during the hours of darkness of link 4.

24.1.3.4.4 Link 5 – B1249/Beeford Road

48. Link 5 consists of the B1249 between Beeford and Skipsea, from the A165 eastwards until it meets link 6 in Skipsea. Link 5 is a rural B-road and runs roughly east-west and is approximately 2.5 miles in length and has a collision rate above the national average.
49. During the study period, four collisions were recorded on this link, all four were slight collisions, no serious or fatal collisions were reported. The collisions reported on Link 5 comprise of:
- A loss of control by a motorcyclist;
 - A loss of control by a car, on a wet road surface;
 - A loss of control leading to a car leaving the carriageway, this collision occurred during the hours of darkness, with no street lighting present; and
 - A failure to look by one car driver, who was reported to be driving unsafely, colliding with another car.
50. To summarise, the collisions comprised of three loss of control and the other was a failure to look properly. No identifiable pattern in the location of the collisions was identified along the link. It can be considered that there is no significant emerging pattern of collisions along on link 5.

24.1.3.4.5 Link 6 – B1242 (Skipsea to end of Travel and Transport Study Area (TTSA))

51. Link 6 is a continuation of the B1242 through Skipsea village in the west and towards the coast to the east, it then turns south towards Hornsea. Link 6 is a rural B-road and is approximately one mile long and has a collision rate above the national average.
52. During the study period three collisions were recorded on link 6, these were all slight in severity, there were no fatal or serious collisions were reported. The collisions reported on Link 6 comprise of:
- A collision involving a motorcycle whose rider lost control and collided with two vehicles in the oncoming lane;
 - A failure to look properly by a van driver executing a U-turn in a private driveway who collided with a vehicle on the carriageway; and
 - A rear-end shunt type collision which occurred between a car waiting to turn right being struck from behind by a second car.

53. To summarise, the collisions comprised of one loss of control, one failure to look properly, and one rear-end shunt type collision. None of the collisions involved HGVs. There is no identifiable pattern in the location of the collisions. It is considered that there is no emerging pattern of collisions on link 6.

24.1.3.4.6 Link 8 – Catfoss Road

54. Link 8 comprises of Catfoss Road from the A165 (Link 3) eastwards to the end of the TTSA. Link 8 is a rural local road and is 1.8 miles long and has a collision rate above the national average.
55. During the study period there were five collisions recorded on link 8, these comprised of four slight collisions and one serious collision, no fatal collisions were reported. The collisions reported on Link 8 comprise of:
- A failure to give way at the junction with the A165 with one car colliding with another who was waiting to turn into the junction, this collision occurred during the hours of darkness (with no lighting present) and inclement weather conditions;
 - A collision between two cars, with unknown causes in the data;
 - A serious collision which occurred during the hours of darkness and involved a car driver losing control and colliding with a tree off the carriageway;
 - A collision between a van and an oncoming motorcycle (the cause of the collision is identified to be unknown) during the hours of darkness without lighting present; and
 - A car driver losing control on a bend.
56. To summarise, the collisions comprised of two losses of control, two had unknown causes, and one was a failure to give way. Three of the five collisions occurred during the hours of darkness. There is no identifiable pattern in the location of the collisions on link 8. It is considered that there is no significant emerging pattern of collisions on link 8.

24.1.3.4.7 Link 9 – A165 (Brandesburton to Leven)

57. Link 9 consists of the A165 from Brandesburton north/south to Leven. The link is a rural A-road and 1.3-miles long and has a collision rate above the national average.

58. During the study period, there were a total of nine collisions recorded on Link 9, these comprise of six slight collisions, two serious collisions and one fatal collision. There is also a cluster of collisions (cluster 3) located at the Leven roundabout junction between links 9, 10, 12 and the Hornsea Road. To summarise, there were nine collisions on link 9, with five taking place on/near the Leven Roundabout. The collisions reported on Link 9 comprise of:

- A failure to look properly leading to two cars colliding on the circulatory of the Brandesburton roundabout, this collision occurred in the hours of darkness with street lighting present;
- A failure to give way by a car driver who subsequently collided with a cyclist on the Brandesburton roundabout;
- A serious collision which occurred when a car driver lost control after overtaking a vehicle, this collision occurred during the hours of darkness with no lighting present;
- A fatal collision which occurred when a car aquaplaned, causing the driver to lose control and collide with the central reservation and a second car;
- The following collisions all took place on/around the Leven Roundabout (collision cluster 3) at the southern end of the link 9 (where it bisects Link 10, Link 12 and the Hornsea Road):
- A loss of control by a car driver;
- A loss of control by a car driver (reported to be intoxicated), this collision took place at night with street lighting present;
- A loss of control by a car driver due a reported medical incident;
- A serious collision between two cars at the roundabout exit caused by one car driving in the incorrect lane colliding with the second;
- A collision caused by a car being driven in the left-hand lane and attempting to turn right on the roundabout and colliding with a car in the right-hand lane travelling straight over; and
- A rear-end shunt type collision on approach to the roundabout due to one car colliding with the rear of another.

59. To summarise, the collisions comprised of four losses of control, two collisions caused by poor lane discipline at the roundabout, a failure to give way, a failure to look properly and a rear-end shunt collision. It is considered there is no overall emerging pattern in the collisions on link 9, however an emerging pattern of loss of control collisions is identified at the Leven roundabout.

24.1.3.4.8 Link 10 – A1035 (Leven Roundabout to end of TTSA)

60. Link 10 consists of the A1035 from the Leven Roundabout. Link 10 is a rural A-road and is 1.9 miles long and has a collision rate above the national average.
61. During the study period seven collisions were recorded on link 10, two were serious and five were slight collisions; no fatal collision were recorded. Two clusters of collisions are located on the link, cluster 3 is located at the Leven Roundabout (detailed in link 9) and cluster 4 is located at the junction of link 10 and Catwick Lane. At collision cluster 4 there have been four collisions recorded during the study period, three slights and one serious. The collisions comprised:
- A serious collision between a car and a motorcycle due to the car turning right into the path of the motorcycle;
 - Two rear end shunt type collisions between cars turning right into Catwick Lane; and
 - A three-car collision caused by a rear-end shunt type collision which occurred due to a car failing to slow behind a car waiting to turn right into a layby opposite Catwick Lane.
62. The collisions reported on Link 10, outside of the collision cluster, comprise of:
- A motorcycle losing control whilst negotiating a bend;
 - A serious collision involving a car which failed to give way coming out of the minor arm of the priority junction with Main Road and colliding with a car on the major arm; and
 - A collision caused by a driver overtaking and colliding head on with an oncoming vehicle.
63. To summarise, there have been seven collisions recorded, these comprised of three rear-end shunt type collisions, two failures to give way, one loss of control and an overtaking incident. It is considered that there is no identifiable pattern of collisions on link 10, however at cluster 4 (on link 10) there have been three rear-end shunt type collisions and one loss of control, which could indicate an emerging pattern of slight rear-end shunt type collisions at this location.

24.1.3.4.9 Link 12 – A165 (Leven Bypass)

64. Link 12 consists of the A165 between the Leven roundabout and the White Cross roundabout. It is a rural A-road and is four miles in length and has a collision rate below the national average.
65. Two clusters of collisions (cluster 3 and 5) are identified on link 12, cluster 3 is located at the Leven roundabout (considered within link 9) and cluster 5 is located at the White Cross Roundabout junction between links 12, 13 and 14.
66. There have been 11 collisions recorded at collision cluster 5, of which six were recorded as serious collisions and five as slight. These collisions comprised:
- A rear-end shunt type collision between two cars on approach to the roundabout on the north-eastern arm;
 - A failure to give way by a car driver, causing a collision with a cyclist on the roundabout;
 - A failure to give way by a car driver, causing a collision with a car on the roundabout;
 - A loss of control by a motorcyclist caused a collision with another vehicle;
 - A rear-end shunt type collision between two cars on approach to the roundabout on the southern arm;
 - A rear-end shunt type collision between a car and a motorcycle on approach to the roundabout on the southern arm;
 - A loss of control by a motorcycle when exiting the roundabout on the southwestern arm;
 - A rear-end shunt type collision near the southwestern arm of the roundabout;
 - Two losses of control by motorcyclists upon entry to the roundabout from the south-eastern arm; and
 - A collision between two vehicles caused by poor lane discipline on entry to the roundabout.
67. To summarise, on link 12 there have been 17 collisions (attributed to collision clusters 3 and 5), these comprised of: seven losses of control, six rear-end shunts, three collisions caused by poor lane discipline and two failures to give way. A high proportion of collisions involved motorcyclists. It is considered that there is an emerging pattern of collisions occurring at collision cluster 5.

24.1.3.4.10 Link 15 – A165 (Skirlaugh to Coniston)

68. Link 15 consists of the A165 from the south of Skirlaugh to the north of Coniston. Link 15 is a rural A-road and is 2.6 miles long and has a collision rate above the national average.
69. During the study period there have been 11 collisions recorded along link 15, four were serious collisions and seven were slight collisions, no fatal collisions were recorded on this link. The collisions reported on Link 15 comprised:
- A loss of control by a car driver veering into the path of an oncoming HGV, whose driver swerved and collided with another car. The car that lost control also collided with a fourth vehicle;
 - A serious collision caused by a car driver losing control and colliding with an oncoming car;
 - A serious collision caused by a motorcyclist losing control;
 - A rear-end shunt type collision between two cars after one stopped on the carriageway;
 - A serious collision involving a cyclist falling from their bike;
 - A serious collision involving a motorcyclist falling from their bike;
 - A collision between a cyclist and a car, which was driving too closely to the cyclist;
 - A loss of control collision between a car and the roadside safety barrier;
 - A rear-end shunt type collision between three cars which occurred when one car was waiting to turn right onto the carriageway; and
 - A collision between a cyclist and a car, which occurred at night, due to the car driver reportedly not seeing the cyclist.
70. To summarise, there have been 11 collisions during the study period, these comprised of seven losses of control, two collisions involving cyclists and two rear-end shunt type collisions. It can be considered that there is a pattern of emerging of loss of control collisions on this link.

24.1.3.4.11 Link 16 - A165 Coniston

71. Link 16 consists of the A165 between Coniston and A165/Main Road/Shannon Road roundabout. Link 16 is a rural A-road and is two miles long and has a collision rate above the national average.
72. During the study period there were a total of 11 collisions recorded on link 16. These 11 collisions comprised of one fatal collision, six serious collisions and 13 slight collisions. Link 16 also contains collision cluster 6, which is located at the roundabout junction with link 17. There have been nine collisions recorded in collision cluster 6, four serious and five slight collisions; no fatalities were recorded. The recorded collisions at cluster 6 comprised:
- A failure to give way by a car driver causing a collision with a motorcycle;
 - A failure to give way by an HGV driver changing lanes which led to a collision with a car;
 - A collision between a car and a bicycle which occurred when the cyclist has crossed the road without looking properly;
 - A collision between a car and a pedestrian, who stepped into the road, this collision occurred during the hours of darkness with streetlights present and lit;
 - A rear-end shunt type collision on approach to the roundabout between two cars;
 - A failure to give way by a motorcyclist led to a collision with a car already on the roundabout;
 - Two failures to give way by car drivers, who entered the roundabout without giving way, colliding with cyclists on the roundabout; and
 - A rear-end shunt type collision between two cars exiting the roundabout.

73. The collisions reported on Link 16, away from collision cluster 6, comprise of:
- A three-car rear-end shunt type collision which occurred when one car was waiting to turn right into Main Street and was struck from behind;
 - A car driver colliding with a cyclist;
 - A three-car collision caused by one car driver, who lost control and crossed the centre-line and collided with an oncoming car which was then impacted by a third car;
 - A three-car rear-end shunt type collision which occurred when one car was waiting to turn right into Thirtleby Lane and was struck from behind;
 - A serious collision caused by a car driver, who lost control and crossed onto the wrong side of the road and collided with an oncoming HGV;
 - A failure to give way by a car driver pulling out of Longdales Lane which led to a serious collision with a motorcycle;
 - A failure to give way by a car driver turning left out of Longdales Lane which led to a collision with another car;
 - A five-vehicle rear-end shunt type collision involving four cars in slow moving traffic;
 - A fatal collision between a car and a pedestrian after the car has mounted the kerb/footway at speed and collided with the pedestrian;
 - A loss of control by a car driver which led to the car mounting the kerb; and
 - A failure to give way by a car driver which led to a collision with a cyclist.
74. To summarise, on link 16 during the study period there have been 20 collisions (inclusive of the cluster), these comprised of: eight failures to give way, three rear-end shunt type collisions, three losses of control, one failure to look properly and one collision with a pedestrian. It can be considered that there is a pattern of emerging failure to give-way collisions on this link.

24.1.3.4.12 Link 18 – Holderness Road

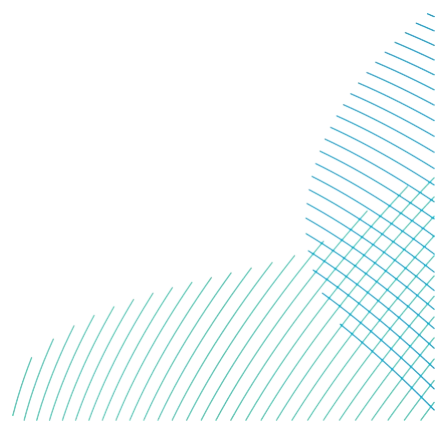
75. Link 18 comprises of A165/Holderness Road between the Mount Pleasant/Holderness Road junction to the A165/B1237/Diadem Grove roundabout. Link 18 is an urban A-road and is 2.4 miles long and has a collision rate below the national average.
76. During the study period there were 173 collisions recorded on link 18. These consisted of two fatal, 40 serious and 131 slight collisions. The collisions reported on Link 18 comprise:
- 87 failures to give way leading to collisions between vehicles at junctions;
 - 37 rear-end shunts;
 - 22 collisions between vehicles and pedestrians / cyclists not at crossings;
 - 16 collisions between vehicles and pedestrians / cyclists at crossings;
 - 10 collisions where bus passengers fell (when on the bus) due to the bus stopping abruptly;
 - six losses of control collisions;
 - four collisions caused by vehicles reversing onto/off the carriageway;
 - two collisions which occurred for an unknown reason;
 - two collisions caused by car doors being opened into the path of cyclists; and
 - two collisions which occurred during overtakes.
77. It can be considered that there is a pattern of collisions along this link involving collisions between cars and cyclists where cars have failed to give way to cyclists when entering the main road from side roads.

24.1.3.4.13 Link 19 – Mount Pleasant/A1033

78. Link 19 consists of the A1033 between the Mount Pleasant North roundabout and the Holderness Road junction. Link 19 is an urban A-road and is 0.3 miles long and has a collision rate above the national average.
79. During the study period a total of 33 collisions were recorded on link 19 (including two collision clusters), of which, ten were serious and 23 were slight collisions; no fatal collisions were recorded. There are also two clusters of collisions, cluster 9 located at the junction between links 18, 19 and 74 and cluster 10, which is located at the Mount Pleasant North Roundabout junction.

80. During the study period there has been a total of 23 collisions recorded within collision cluster 9, these comprised of 19 slight collisions and four serious collisions, no fatalities were recorded. These collisions comprised:
- A collision between a cyclist and car in the centre of the Holderness Road junction;
 - A collision between a car and a pedestrian, as the pedestrian crossed during a red pedestrian signal;
 - A collision between a bus and a pedestrian, where the pedestrian stepped out as the bus was turning and collided with the side of the bus;
 - A rear-end shunt type collision on approach to the junction between two cars;
 - A failure to give way by a turning car driver caused the car to collide with an oncoming cyclist;
 - A collision in the centre of the junction between a car and an ambulance;
 - A head-on collision between two right turning cars due to poor lane discipline;
 - A rear-end shunt type collision between two cars on approach to the junction, this serious collision occurred during the hours of darkness with streetlights present and lit;
 - A rear-end shunt type collision between two cars on approach to the junction;
 - A collision between car, turning left onto Link 74 and colliding with a pedestrian in the road;
 - A collision between a bus and pedestrian, as the pedestrian crossed at a signalised crossing. This collision occurred during the hours of the darkness with streetlights present and lit;
 - A collision between a turning car and a motorcycle travelling straight on in the opposite direction;
 - A rear-end shunt type collision between two turning cars;
 - Two rear-end shunt type collisions between two cars, with one waiting at traffic signals;
 - A collision between two cars, with no reason given in the data;
 - A failure to give way by a right turning car driver which led to a collision with a car travelling straight on, in the opposite direction, this collision occurred during the hours of darkness with streetlights present and lit;

- A collision between a car and a pedestrian, as the pedestrian has been in the path of a turning car;
- A serious collision between a turning car and a motorcycle, this collision occurred during the hours of darkness with streetlights present and lit;
- A rear-end shunt type collision involving a cyclist colliding with the rear of a car on approach to the junction;
- A failure to give way by a right-turning car driver, which led to a collision with a left turning cyclist;
- A serious collision between an HGV and a bicycle in the middle of the Holderness Road junction, this collision occurred during the hours of darkness with streetlights present and lit; and
- A serious two car collision which occurred when one car changed lanes without looking properly and collided with the other car.



81. Collision cluster 10 consists of the Mount Pleasant North roundabout between links 19 and 20. During the study period there have been a total of eight collisions recorded, comprising three serious and five slight collisions; no fatalities were recorded. These collisions comprised:
- A collision between a car and a bicycle, caused by poor lane discipline during road works, this collision occurred during the hours of darkness with streetlights present and lit;
 - A rear-end shunt type collision between two cars exiting the roundabout, this collision occurred during the hours of darkness with streetlights present and lit;
 - A failure to give way on the roundabout by a car driver led to a serious collision with a motorcycle on the roundabout, when the car has entered the roundabout junction;
 - A serious collision between a crossing cyclist and a car exiting the roundabout;
 - A failure to give way by a car driver who has entered the roundabout without giving way and has collided with a cyclist, causing a serious collision;
 - A rear-end shunt type collision on entry to the roundabout between a car and an HGV;
 - A collision between a cyclist and a car caused by the driver entering the roundabout without giving way to the cyclist; and
 - A collision between two cars on approach to the roundabout, the cause of collision is not given in the data. This collision occurred during the hours of darkness with streetlights present and lit.
82. Three of the nine collisions on link 19 occurred north of the Mount Pleasant North roundabout, these comprised of:
- A loss of control by car driver who has collided with kerb, this collision occurred at night with streetlights present and lit;
 - A rear-end shunt type collision between a car and an HGV on the approach to the Mount Pleasant North roundabout; and
 - Two rear-end shunt type collisions in traffic between two cars.

83. To summarise, on link 19 there were 33 collisions during the study period, these comprised of:
- 14 rear-end shunt type collisions;
 - 14 failures to give way;
 - seven collisions involving cars colliding with crossing cyclists and pedestrians;
 - two collisions caused by poor lane discipline;
 - one collision between a cyclist and an HGV on the carriageway;
 - one loss of control; and
 - two collisions with reasons not given in the data.
84. There is no significant emerging pattern in the location and type of collisions on this link. It can however be considered that there is a pattern of emerging of failures to give-way and rear end shunt collisions on this link.

24.1.3.4.14 Link 20 – A1033 Slip Road

85. Link 20 consists of the A1033/Hedon Road which acts as a slip road for the A63. It is an urban A-road and is 0.6 miles long and has a collision rate below the national average.
86. During the study period there have been a total of 27 collisions recorded on link 20, ten were serious and 17 were slight collisions, no fatal collisions were reported. There are also two clusters of collisions (clusters 10 and 11), cluster 10 is located at the junction with link 20 (detailed in link 19) and cluster 11 located at the Southcoates Roundabout junction between links 20, 21 and 23.
87. During the study period, there have been 18 collisions at collision cluster 11 comprising of, six serious collisions and 12 slight collisions, no fatalities were reported. These collisions comprise of:
- A head-on serious collision between two cars due to one driver travelling on the wrong side of the road (believing it to be a dual carriageway);
 - A rear-end shunt type collision at the A63/A1033 roundabout due to one car colliding with the rear of a car waiting to join the roundabout. This collision occurred during the hours of darkness with streetlights present and lit;
 - A serious collision between a crossing cyclist and a car exiting the roundabout, this collision occurred during the hours of darkness with streetlights present and lit;

- A collision between a car and an HGV caused by the HGV driver driving into the lane with the car in without looking and colliding with the car. This collision occurred during the hours of darkness with streetlights present and lit;
 - A loss of control by a motorcycle rider, leading to them falling off the motorcycle on the circulatory lanes of the roundabout;
 - A collision between a motorcycle and a car, when the motorcycle rider has changed lanes on the roundabout without giving way to a car in the lane which the rider has driven into;
 - Five rear-end shunt type collisions between two cars on the entry to the roundabout;
 - A collision involving two cars and a motorcycle, the cause is not given in the data;
 - A failure to give way by a car driver entering the roundabout which led to a serious collision with another car;
 - A loss of control by an HGV entering the roundabout, causing it to tip over;
 - A collision caused by a car driver travelling in the incorrect lane on the roundabout and colliding with a car exiting;
 - A rear-end shunt type collision involving three cars on approach to the roundabout;
 - A loss of control by a car driver on approach to the roundabout; and
 - A failure to give way by a car driver entering the roundabout caused a collision with two cars travelling on the roundabout.
88. The collisions reported on Link 20 (excluding those in collision cluster 11) comprise of:
- A failure to give way by a car driver who has entered the roundabout without giving way and has collided with a cyclist;
 - A loss of control by a motorcyclist who has collided with the kerb upon entry to Link 20 resulting in serious injuries;
 - A serious collision between a car which was driving out of a side road and collided with motorcyclist which was on Link 20. This collision occurred during the hours of darkness with streetlights present and lit;
 - A collision between a car and parked vehicles, possibly caused by a loss of control, this collision occurred during the hours of darkness with streetlights present and lit;

- A serious collision between a van driver, who has failed to give way to a motorcycle leaving a side road, as the van was entering the side road. This collision occurred during the hours of darkness with streetlights present and lit;
 - A failure to look properly by a car driver which led to the car colliding with a pedal cyclist on the carriageway as the car was joining the carriageway from a parking bay; and
 - A collision between a cyclist and an overtaking car.
89. To summarise, during the study period on link 20 (and collision cluster 11) there have been 27 collisions, these comprised of:
- Eight rear-end shunt type collisions;
 - Six failures to give way;
 - Five losses of control;
 - Three failures to give way when changing lanes;
 - One head-on collision;
 - Two collisions between a car and cyclist;
 - One driver driving the wrong way down the road, leading to a collision; and
 - One collision with no cause given in the data.
90. It can be considered that there is a pattern of rear-end shunts, failure to give way and loss of control collisions on this link.

24.1.3.4.15 Link 24 – A63

91. Link 24 consists of the A63 between the middle of the Mount Pleasant roundabout and the Mytongate roundabout. Link 24 is an urban A-road and is 1.5 miles in length and has a collision rate below the national average.
92. Link 24 also contains collision clusters 12, 13, 14 and 15. Cluster 12 consists of the roundabout junction between link 24 and A1165, cluster 13 comprises the priority junction between link 24 and Market Place and cluster 14 comprises the priority junction between link 24 and Dagger Lane and cluster 15 at the priority junction between link 24 and Mytongate.
93. During the study period there have been 48 collisions recorded along link 24, these comprise of 11 serious collisions and 37 slight collisions, no fatalities were recorded.

94. Collisions which occurred in cluster 12 comprise of:
- A serious collision between a motorcycle and a car caused by the motorcycle rider not looking properly when changing lanes and colliding with the car;
 - Four rear-end shunt type collisions between two cars on approach to the roundabout;
 - A collision between two cars, during the hours of darkness with streetlights present and lit, with no known cause in the data;
 - A failure to give way by a car driver which led to a collision with another car;
 - A head-on collision in a stretch of temporary traffic measures due to one car not sighting a red signal and colliding with an on-coming car, this collision occurred during the hours of darkness with streetlights present and lit;
 - Four collisions between two cars, due to one car's driver not sighting a red light on the signals controlling the junction and colliding with a car that had priority, one of the collisions was a serious collision and occurred during the hours of darkness with streetlights present and lit;
 - A collision between a motorcycle and a car, caused by the motorcycle's rider misjudging of the space between the car and the restraint barrier;
 - A collision between a car and motorcycle, both exiting the roundabout caused by poor lane discipline;
 - A collision between an HGV and a cyclist after exiting the roundabout;
 - A failure to give way when changing lanes led to a collision between two cars;
 - A failure to give way when changing lanes led to a serious collision between two cars, which occurred during the hours of darkness, with streetlights present and lit;
 - A collision between a car and an HGV, cause is not provided in the data;
 - A loss of control by an HGV led it to tip over on the roundabout;
 - A rear-end shunt type collision on approach to traffic signals; and
 - A serious collision between an unspecified vehicle and a pedestrian who was stood on the pedestrian refuge.
95. Collision cluster 13 comprises the priority junction between link 24, Market Place and Queen Street, approximately 900m west of collision cluster 12. During the study period, there have been a total of five collisions, one was a serious collision and four were slight collisions. These collisions comprised:

- A collision between a car and a pedestrian, who was crossing the road when road traffic had priority;
 - A collision between an unknown vehicle and a pedestrian as the pedestrian was waiting to cross on the central refuge;
 - A rear-end shunt type collision between a car and a cyclist as the car has joined the main carriageway, this collision occurred during the hours of darkness with streetlights present and lit;
 - A serious collision between a car and a cyclist crossing at a signalised 'toucan' crossing; and
 - A loss of control by a car.
96. Collision cluster 14 comprises the priority junction between link 24 and Dagger Lane, approximately 250m west of collision cluster 13. During the study period, there have been nine collisions at collision cluster 14, five were serious and four were slight collisions. These comprised:
- A serious collision between a car and a crossing pedestrian;
 - A collision between a car and a crossing cyclist;
 - A loss of control by an electric scooter on the footway which caused the rider to collide with an HGV on the carriageway;
 - A rear-end shunt between two unspecified vehicles;
 - Three serious collisions between a car and pedestrian, who is crossing in the middle of the road, away from a crossing; and
 - A collision between a car and a crossing pedestrian during the pedestrian phase of the signals;
 - Collision cluster 15 consists of the roundabout junction between links 24, 25 and Mytongate. Works are underway to improve the junction, to include an underpass. During the study period there have been 13 collisions recorded, one serious and twelve slight collisions; no fatal collisions were recorded. These comprised:
 - A collision between a car and an HGV on the circulatory of the roundabout;
 - Two collisions between two cars due to reported defective traffic signals;
 - A serious collision between a pedestrian, on the carriageway, and a car. This collision occurred during the hours of darkness with streetlights present and lit;
 - A collision between a pedestrian, on the carriageway, and a motorcyclist;

- A failure to give way leading to a collision between two cars;
- A failure to give way by an HGV changing lanes has led to a collision with a car;
- A failure to give way by a car led to a collision with an emergency vehicle that was moving into the lane of the car whilst on an emergency call;
- A loss of control by a car driver has caused a collision with a traffic signal pole, which has then caused debris to impact a pedestrian;
- A rear-end shunt type collision between two cars;
- A rear-end shunt type collision between three cars;
- A collision between a pedestrian waiting to cross and an HGV; and
- A rear-end shunt type collision between a bicycle and a car.

97. To summarise, there have been 48 collision recorded within the clusters on link 24, these comprise of:

- 14 collisions with pedestrians / cyclists;
- Ten rear-end shunt type collisions;
- Seven collision caused by drivers not sighting red signals and stopping;
- Five losses of control (two of which were by HGVs);
- Four collisions which occurred when drivers did not look properly before changing lane;
- Four failures to give way;
- Two collisions which occurred for unknown reasons; and
- One collision on the roundabout with no cause given in the data.

98. It is considered that there is a pattern of collisions between vehicles and pedestrians / cyclists, rear end shunts, failures to head traffic signals and loss of control collisions on this link.

24.1.3.4.16 Link 26 – A63

99. Link 26 consists of the A63 between the St Andrew's Quay roundabout and the A15 junction. Link 26 is a A-road and is 6.7 miles long and has a collision rate below the national average. Link 26 also contains collision cluster 16.
100. During the study period there have been a total of four collisions at cluster 16. Collision cluster 16 is located, 2km east of the junction with the A15. There has been one fatal, one serious and two slight collisions. These collisions comprise of:
- Two rear-end shunt type collision between two cars;
 - A fatal loss of control collision by a motorcyclist, this collision occurred during the hours of darkness, with streetlights present and lit; and
 - A rear-end shunt type collision between two cars leading to a serious collision.
101. To summarise, on link 26 there were a total of four collisions at cluster 16, these comprise of: three rear-end shunt type collisions and a loss of control collision. It is considered that there is an emerging pattern of rear-end shunt type collisions in collision cluster 16.

24.1.3.4.17 Link 28 – A15/Boothferry Road

102. Link 28 consists of the A15/Boothferry road from the exit / entry slips of the A63 to the Wingfield Farm Roundabout. Link 28 is a A-road and is approximately 0.9 miles long and has a collision rate above the national average.
103. During the study period there were nine collisions recorded on this link, five serious and four slight collisions; no fatal collisions were recorded. There is also a cluster of collisions (cluster 18, detailed in link 29) located at the roundabout junction between links 28, 29 and 30. Six of the collisions occurred along the exit / entry slips of link 28 and comprised:
- A serious collision attributed to a loss of control by a car driver which caused the vehicle to cross into oncoming traffic and collide head-on with another vehicle;
 - A serious collision involving a car which failed to give way and driving out of a junction and collided with one car, which was then pushed into another car;
 - An HGV colliding with the kerb and hedgerow. This collision occurred during the hours of darkness with streetlights present and lit;

- A car driver, who was driving on the wrong side of the road requiring a bus driver to perform an emergency stop which caused a casualty inside the bus;
 - A serious head-on collision between two cars due to one car driver driving on the wrong side of the road, this occurred during the hours of darkness with streetlights present and lit; and
 - A serious rear-end shunt type collision on the exit slip from the A63 onto the Humber Bridge, which occurred as a van was pulling off the carriageway to assist a broken-down vehicle and another car collided with the rear of the van.
104. Three of the 12 collisions on link 12 occurred on the A15/Ferriby Road roundabout and comprised:
- A collision caused by an HGV colliding with a car when entering the roundabout, due to a failure to give way;
 - A serious collision between a car and a motorbike caused by poor lane discipline by the motorcyclist on the roundabout; and
 - A rear-end shunt type collision between two cars at the approach to the roundabout.
105. To summarise, on link 28 there were 12 collisions during the study period, these comprised of:
- Five rear-end shunt type collisions;
 - Four losses of control (including driving on the wrong side of the road);
 - Two incorrect uses of lanes on a roundabout; and
 - One failure to give way.
106. It is considered that there is an emerging pattern of rear end shunt and loss of control collisions on the A15/Ferriby Road roundabout.

24.1.3.4.18 Link 29 – A15/Humber Bridge

107. Link 29 consists of the A15/Humber Bridge from midway across the bridge north until the Wingfield roundabout. Link 29 is a main A-road and includes the toll booths for the Humber Bridge crossing. The link is one mile long and has a collision rate above the national average.
108. During the study period there were 44 collisions recorded on link 29, 19 were slight and two were serious collisions, with no fatal collisions recorded. There are also two clusters of collisions located on link 29, cluster 17 is located at the toll booths and cluster 18 is located at the roundabout junction between links 28, 29 and 30. In total of the 21 collisions recorded along link 29, 13 occurred in the vicinity of the toll booths (cluster 17) and comprised:
- Nine rear-end shunt collisions between vehicles on the approach to the toll booths;
 - A failure to look properly by an HGV driver who moved across lanes and collided with a car in the adjacent lane;
 - A serious collision, at the toll booth on the bridge, which occurred when the driver was distracted taking a payment card from a passenger and collided with the barrier between toll booths;
 - A rear-end shunt type collision which occurred between two cars just after departing from the toll booths; and
 - A collision between a car and the toll barrier after the barrier reportedly failed as the car was driving through.
109. The remaining eight collisions on link 29 occurred on approach to the Wingfield Farm roundabout (cluster 18) and comprised:
- A failure to look properly at the A15 arm of the roundabout by a car driver who changed direction whilst on the roundabout and collided with a vehicle joining the roundabout;
 - Six rear-end shunt type collisions between two cars on the entry to the roundabout; and
 - A failure to give way by a motorcyclist entering the roundabout coming from the eastern arm of the roundabout and a car turning into Link 29.
110. To summarise on link 29 there were 21 collisions in the study period, these included: 17 rear-end shunt type collisions, two failures to look properly, one failure to give way and one collision with a failed toll barrier. It is considered that there is an emerging pattern of rear-end shunt type collisions on this link.

24.1.3.4.19 Link 30 – A164 (Wingfield Farm roundabout to B1231)

111. Link 30 consists of the A164 northwards from the Wingfield Farm roundabout until the roundabout which connects to the B1231. Link 30 is a rural A-road and is one mile long with a collision rate above the national average.
112. In the study period, there were a total of nine collisions recorded on this link, all nine have been slight collisions; no fatal or serious collisions were reported. Link 30 also contains collision cluster 17, reported under link 29.
113. The following collisions occurred on the entry/exit of the Wingfield Farm roundabout from link 30:
 - Three rear-end shunt type collisions between two cars on the entry to the roundabout;
 - A rear-end shunt type collision between two cars on the entry to the roundabout, this collision occurred during the hours of darkness with streetlights lit and present;
 - A collision on the roundabout between two cars after one has joined the roundabout whilst failing to give way;
 - A three car rear-end shunt type collision caused by a car travelling too quickly and colliding with a slow-moving car which was subsequently pushed into a third car;
 - A loss of control by a car exiting the roundabout onto link 30 and colliding with the central island;
 - A loss of control by a car exiting the roundabout and skidding; colliding with the safety barrier on a wet road surface; and
 - A four-car rear-end shunt type collision on approach to the roundabout.
114. To summarise, during the study period on link 30 there were nine collisions, these included: six rear-end shunt type collisions, two losses of control and one failure to give way. It is considered that there is an emerging pattern of rear-end shunt type collisions on this link.

24.1.3.4.20 Link 32 – A164 (B1232/Albion Lane roundabout to Castle Road roundabout)

115. Link 32 consists of the A164 between the A164/B1232/Albion Lane roundabout and the A164/Castle Road roundabout. Link 32 is a rural A-road and is 0.9 miles long and has a collision rate above the national average.
116. During the study period there have been a total of 15 collisions reported, three have been serious collisions and 13 have been slight collisions; no fatal collisions were reported.
117. There are also two clusters of collisions on link 32, cluster 19 is located at the Willerby Hill Roundabout junction and cluster 20 is located on the roundabout junction between link 32 and Castle Road. The following collisions occurred in proximity to or on the Willerby Hill roundabout (collision cluster 19):
 - A serious collision between two cars caused by a car driver entering the roundabout without giving way to a car already on the roundabout;
 - A serious collision caused by a loss of control at the roundabout;
 - A loss of control by a motorcycle rider leading to a collision with the kerb; and
 - A serious collision caused by a loss of control by the motorcycle rider which led to a collision close to the A164/Willerby Court roundabout. This collision occurred during the hours of darkness with streetlights present and lit.
118. The following collisions occurred at collision cluster 20:
 - A rear-end shunt type collision between two cars on the southern arm of the roundabout;
 - A loss of control collision by a car driver, which occurred during darkness with streetlights present and lit;
 - Two rear-end shunt type collisions between two cars on the entry arm from Castle Road; and
 - A collision between a car and motorcycle, where a car collided with a motorcycle exiting the roundabout owing to poor lane discipline.

119. The following collisions occurred on the A164/B1232/Albion Lane roundabout:
- A loss of control collision by a car driver, who was reported to be driving excessively fast and collided with the central barrier on the roundabout. This collision occurred during the hours of darkness with streetlights present and lit;
 - A rear-end shunt type collision between two cars on approach to the roundabout; and
 - A loss of control by a motorcycle rider on the roundabout causing the motorcycle to collide with a car.
120. The following collisions occurred between the A164/B1232/Albion Lane and Willerby Hill roundabouts along the A164:
- A failure to give way by one car driver on the dual carriageway which led to the car colliding with another car in the adjacent lane;
 - A collision between a car and a cyclist, which occurred during the hours of darkness with streetlights present and lit, on the approach to the A164/Willerby Court roundabout; and
 - A rear-end shunt type collision between a car and van.
121. To summarise, there have been 15 collisions during the study period, these comprised:
- Six losses of control;
 - Four rear-end shunt type collisions;
 - Two failures to give way;
 - One collision caused by poor lane discipline;
 - One collision with a cyclist; and
 - One collision with no cause given in the data.
122. It is considered that there is a pattern of rear end shunts and loss of control collisions on this link.

24.1.3.4.21 Link 35 – A164 (Dunflat Road to A1079)

123. Link 35 consists of the A164 between Dunflat Road and midway over the A1079 bridge (where link 35 becomes link 38). Link 35 is a rural A-road and is one mile long and has a collision rate above the national average.
124. During the study period there were 19 collisions reported on link 35, seven were serious collisions and 12 were slight collisions; no fatal collisions were recorded. There is also a cluster of collisions (cluster 21) located at the priority junction between the A1079 and the A164 (northbound carriageway). The following collisions occurred at collision cluster 21:
- Two serious rear-end shunt type collisions between two cars which occurred at the traffic signals for entry onto the A1079;
 - Three rear-end shunt type collisions between three cars, when one failed to stop in time approaching traffic and collided with the rear of two cars in front; and
 - Two rear-end shunt type collisions between two cars approaching the A1079 traffic signals.
125. The collisions reported on link 35 (not within collision cluster 21) comprised:
- A loss of control by a cyclist, leading to a collision with the road surface, this occurred during the hours of darkness with streetlighting present and lit;
 - Two losses of control by motorcyclists causing serious collisions;
 - Two rear-end shunt type collisions, both involving four cars;
 - A rear-end shunt type collision between two cars;
 - A serious collision between four cars when one car stopped to allow an HGV to turn right into a layby. The stopped car caused a car behind to slow down, which was then impacted in the rear by a third car causing it spin into oncoming traffic and colliding with another car;
 - A rear-end shunt type collision between two cars in a traffic queue;
 - A five vehicle (three cars and two vans) rear-end shunt type collision which occurred during queuing traffic;
 - A rear-end shunt type collision involving two cars during slow moving traffic;
 - A loss of control by a car driver which led to the car entering the opposing lane and caused a serious collision with an oncoming car, this collision occurred during darkness with streetlights present and lit; and
 - A serious collision caused by a motorcycle rider losing control.

126. To summarise, there were 19 collisions on link 35, these comprise: 14 rear-end shunt type collisions and five losses of control. It can be considered that there is an emerging pattern of rear-end shunt type collisions along link 35.

24.1.3.4.22 Link 36 – Dunflat Road

127. Link 36 consists of 0.5 miles of Dunflat Road from the A164 until Coppleflat Lane; link 36 has a collision rate above the national average. There has however been only one slight collision on link 36 within the study period. The collision was a loss of control by a car driver. It can therefore be considered that there is no discernible pattern of collisions.

24.1.3.4.23 Link 37 – Coppleflat Lane

128. Link 37 consists of Coppleflat Lane from link 36 (Dunflat Road) until the junction with links 68 (Coppleflat Lane), 69 (B1230) and 71 (Broadgate / B1230).
129. Link 37 is a rural unclassified road and is 1.4 miles long and has a collision rate above the national average. In the study period, there have been four collisions reported on link 37, one was serious collisions and three were slight collisions, there were no fatal collisions reported. The collisions reported on link 37 comprised:
- A collision between a motorcycle and a car as the car driver entered the path of the motorcycle on a right-hand bend;
 - A collision between two cars after one car crossed the centreline and collided with an oncoming car;
 - A serious collision caused by a loss of control by a motorcycle rider; and
 - A rear-end shunt type collision between two cars, with one failing to stop in time on the approach to traffic.
130. To summarise, there were four collisions during the study period, these comprised of: two collisions due to vehicles crossing the centreline on curves, one loss of control and one rear end shunt. There is no significant identifiable pattern in the location and type of the collisions along link 37.

24.1.3.4.24 Link 38 – A164 (A1079 to A164/Victoria Road/Wingfield Way Roundabout)

131. Link 38 consists of the A164 between the centre of the A1079 junction bridge (north from link 35) until the A164/Victoria Road/Wingfield Way roundabout. Link 38 is a A-road and is 0.4 miles long and has a collision rate above the national average.
132. During the study period there have been a total of ten collisions recorded on link 38, one serious collision and nine slight collisions; no fatal collisions were reported. There is also a cluster of collisions on link 38 (cluster 22), which is located at the roundabout junction between the A164 and link 51. The following collisions occurred on approach to the A164/Victoria Road/Wingfield Way roundabout (collision cluster 22):
- Two rear-end shunt type collisions involving three cars;
 - A loss of control by a car driver causing the car to collide with an oncoming car, leading to a serious collision;
 - A rear-end shunt type collision involving a car braking to avoid colliding with a police vehicle and the car behind not reacting in time and colliding with the rear of the braking car; and
 - A collision between a cyclist and a car on the roundabout with the car colliding with a cyclist as it exited the roundabout.
 - The remaining collisions reported on link 38 occurred at the junction between A164 and A1079:
 - Three rear-end shunt type collisions between two cars;
 - A rear-end shunt type collision between a car and an HGV as the car was waiting at traffic signals the HGV collided with the rear of the car at slow speed; and
 - A loss of control by a car driver on the exit slip of the A1079.
133. To summarise, on link 38 there were ten collisions during the study period, these comprised of: seven rear-end shunt type collisions, two losses of control and one collision involving a cyclist. It can be considered that there is a pattern of rear end shunts on link 38.

24.1.3.4.25 Link 40 – A1033 (Ennerdale roundabout to Roebank roundabout)

134. Link 40 comprises the A1033 from the Ennerdale roundabout to the Roebank roundabout. Link 40 is an urban A-road and is 0.9 miles long and has a collision rate below the national average. There is however two clusters of collisions on link 40, cluster 23 which is located at the roundabout junction between links 40 and 75 and collision cluster 24 which is located at the roundabout junction between links 40 and 45.
135. During the study period there have been 19 collisions recorded, two have been serious collisions and 17 have been slight collisions; no fatalities were recorded within the collision clusters. The collisions at collision cluster 23 comprise:
- Two failures to give way by car drivers, who when entering the roundabout caused a collision with cyclists on the roundabout;
 - A failure to give way by a cyclist who entered the roundabout and collided with a car;
 - A failure to give way by a car driver when entering the roundabout which caused a collision with two cyclists, who were on the roundabout;
 - Two rear-end shunt type collisions between two cars on entry to the roundabout;
 - A collision between a car and a bicycle, for reasons not given in the data; and
 - A failure to give way by a car driver entering the roundabout and colliding with a cyclist, this collision occurred during the hours of darkness, streetlights were present and lit.

136. The collisions at collision cluster 24 comprise:
- A collision between a car and a cyclist, who entered the carriageway from the footway;
 - Four rear-end shunt type collisions between two cars on approach to the roundabout, one of the four collisions occurred during darkness with streetlights present and lit;
 - Two collisions between two cars due to poor lane discipline on the roundabout;
 - A failure to give way with a car entering the roundabout into the path of a cyclist;
 - A failure to give way within the roundabout caused a collision between two cars; and
 - Two collisions between a car and a cyclist on the roundabout, no cause is given in the data.
137. To summarise, at the two collision clusters on link 40 there have been 19 collisions, these comprise:
- Seven failures to give way;
 - Six rear-end shunt type collisions;
 - Four collisions between cars and cyclists; and
 - Two collisions caused by poor lane discipline.
138. It is considered that there is an emerging pattern of failing to give way and of rear-end shunt type collisions within the clusters on link 40.

24.1.3.4.26 Link 45 - A1033

139. Link 45 comprises the A1033 from the Roebank roundabout to the Dunswell Roundabout. Link 45 is an urban A-road and is 0.7 miles long and has a collision rate above the national average.
140. During the study period there were a total of 38 collisions recorded, these comprise of three serious and 35 slight collisions, no fatal collisions were reported. There are also two clusters of collisions on link 45, cluster 24 (reported under link 40) and cluster 25, which is located at the roundabout junction with links 46 and 63. The collisions within collision cluster 25 comprise:
- Eight rear-end shunt type collisions between two cars when approaching the roundabout, one of which occurred during the hours of darkness with streetlights present and lit;
 - A loss of control collision by a car driver which caused the car to collide with the kerb on approach to the roundabout;
 - A failure to give way by a car driver which led to a collision with a cyclist on the roundabout, this collision occurred during the hours of darkness with streetlights present and lit;
 - A collision between two cars with one car using the incorrect lane on the roundabout and colliding with a car exiting the roundabout;
 - Four rear-end shunt type collisions, each involving three cars, on approach to the roundabout;
 - A rear-end shunt type collision between two cars exiting the roundabout;
 - A failure to give way by a car driver who entered the roundabout and collided with a cyclist travelling on the roundabout; and
 - A collision between two cars on the circulatory lanes of the roundabout.

141. The following collisions occurred at the signalised pedestrian crossing, 60m along link 45 westbound from the Roebank roundabout:
- A collision between a car and pedestrian, on the crossing, with vehicles having priority at the time of the collision;
 - A serious collision between a pedestrian and an HGV, who crossed the crossing when the priority was given to vehicles. This collision occurred at night with streetlights present and lit;
 - A collision between a cyclist using the crossing and car whose driver did not stop in time; and
 - A serious collision between a pedestrian on the crossing and a car, whose driver failed to see the red signal in time to stop.
142. The following collisions occurred between the pedestrian crossing and Dunswell roundabout:
- A rear-end shunt type collision between a bus and a car after the car driver lost control and stopped suddenly in the middle of the carriageway;
 - A rear-end shunt type collision between two cars after one slowed to react to traffic ahead and the other failed to slow in time;
 - A rear-end shunt type collision between two cars;
 - A failure to give way on the A1033/Gibraltar Road/Barnes Way roundabout by a car which led to the car colliding with a motorcycle already on the roundabout;
 - A loss of control by a motorcycle rider upon entry to the A1033/Gibraltar Road/Barnes Way roundabout;
 - A rear-end shunt type collision caused by a car driver losing control of the car on approach to the A1033/Gibraltar Road/Barnes Way roundabout;
 - A collision between a car and a cyclist on the carriageway, due to a failure to give way by the car driver;
 - A serious collision between a car and a cyclist crossing the road, this collision occurred during darkness with streetlights present and lit;
 - Two three-vehicle rear-end shunt type collisions;
 - A rear-end shunt type collision between two cars; and
 - A collision caused by a car driver failing to give way before changing lanes and colliding with a car in the lane they were moving into.

143. The collisions reported on the remainder of link 45 were:
- A failure to give way by a car driver who collided with another car when exiting the Roebank roundabout; and
 - A rear-end shunt type collision between two cars as one was waiting to enter the Roebuck roundabout another collided with the rear of the car. This collision occurred during darkness with streetlights present and lit.
144. To summarise, there were 38 collisions on link 45 during the study period, these comprised of:
- 21 rear-end shunt type collisions;
 - Seven failures to give way;
 - Four collisions with users of a pedestrian crossing;
 - Two collisions between cars and cyclists on the carriageway;
 - Two collisions caused by poor lane discipline; and
 - One loss of control collision.
145. It can be considered that there is an emerging pattern of rear-end shunts on link 45.
- 24.1.3.4.27 Link 46 – A1174 (Dunswell Roundabout to A1174/Ferry Lane/Long Land junction)
146. Link 46 comprises of the A1174 between the Dunswell roundabout north to the crossroads between the A1174 (north to south), Ferry Lane and Long Lane. Link 46 is a rural A-road and is 1.8 miles long and has a collision rate above the national average. There is also a cluster of collisions on link 46 (cluster 25, detailed in link 45), which is located at the roundabout junction between links 45, 46 and 63.

147. During the study period there have been a total of 11 collisions reported on the link, (excluding collision cluster 25). Two serious and nine slight collisions were recorded; no fatal collisions were reported. The collisions comprised:
- A collision between a car and a cycle on the footway;
 - A rear-end shunt type collision between two cars;
 - A collision on the footway between a car reversing out of a private driveway and a cyclist travelling along the footway;
 - A serious rear-end shunt type collision where a cyclist rode into the rear of a slowing bus;
 - A collision between a bicycle and a pedestrian who was exiting a parked vehicle onto the carriageway;
 - A failure to give way by a car driver who collided with a cyclist as the car exited a side road;
 - A failure to give way by a car driver, who was exiting a stop line-controlled priority junction and collided with a cyclist exiting a development opposite;
 - A serious collision between two right turning cars, one turning onto link 46 and the other turning off the road at the same time;
 - A loss of control by a motorcyclist;
 - A loss of control by a car driver, who moved onto the opposite carriageway, causing another car to swerve and collide with the kerb; and
 - A loss of control whilst overtaking by a car driver led to a collision with the kerb and a building.
148. To summarise, on link 46 there have been 11 collisions, these comprised:
- Three losses of control;
 - Two rear-end shunt type collisions;
 - Two failures to give way;
 - Two collisions between cars and cyclists;
 - One collision between right turning cars; and
 - One collision involving a pedestrian and a cyclist colliding.
149. It is considered that there is no identifiable pattern of collisions at this location.

24.1.3.4.28 Link 49 – A1174 (Ferry Lane/Long Lane/A1174 to A164/Eastfields Rad roundabout)

150. Link 49 consists of the A1174 from the northern end of link 46 (crossroads with Ferry Lane and Long Lane) to the A1174 / A164 / Eastfields Road roundabout. Link 49 is a rural A-road and is 1.4 miles long, with a collision rate above the national average.
151. During the study period there have been a total of 12 collisions recorded on link 49, two were serious collisions and ten were slight collisions; there were no fatal collisions recorded. The collisions reported on Link 49 comprised:
- A rear-end shunt type collision on approach to a zebra crossing, which occurred when one car has stopped to allow a pedestrian to cross and a following vehicle failed to stop in time and collided with the rear of the stopped car;
 - A rear-end shunt type collision between a right turning car and the following car;
 - A head-on collision, which occurred for reasons unknown (in the data);
 - A failure to give way by a car driver joining the carriageway resulting in a collision with a cyclist;
 - A collision between a car, failing to give way, and a cyclist on a zebra crossing;
 - A loss of control by a motorcyclist which led to a collision with a car;
 - A rear-end shunt type collision, which occurred during the hours of darkness with streetlights present and lit;
 - A four-car rear-end shunt collision;
 - A serious head-on collision between cyclists with one riding on the wrong side of the road, this collision occurred during the hours of darkness with streetlights present and lit;
 - A collision between two cars which occurred when a car crossed the centreline on a bend and collided with an oncoming car;
 - A serious collision between a pedestrian and a car after the car mounted the kerb onto the footway, this collision occurred during darkness with streetlights present and lit; and
 - A collision between an HGV and a car exiting the roundabout.

152. To summarise, there were 12 collisions on link 49, these comprised:

- Four rear-end shunt type collisions;
- Three failures to give way;
- Two losses of control;
- Two collisions involving cyclists;
- One collision involving a pedestrian on the footway; and
- One head-on collision.

153. It can be considered that there an emerging pattern of rear-end shunts along link 49.

24.1.3.4.29 Link 51 - A164 / Woodmansey

154. Link 51 consists of the A164 between the A164/Victoria Road/Wingfield Way roundabout and A164/Ward Way roundabout, this link is 0.5 miles long and has a collision rate above the national average. This link was recently redesigned to incorporate two new roundabouts, the A164/Ward Way roundabout and the A164/Lincoln Way roundabout.

155. During the study period there were a total of four collisions recorded on link 51, one collision was serious and the remaining three were slight. No fatal collisions were recorded. Link 51 also contains collision cluster 22 (reported within link 38) and link 38. The collisions reported on link 51 comprised:

- A serious collision between a car and three pedestrians on the footway, which occurred when the car driver lost control and the car left the carriageway;
- A loss of control by a car driver, this collision occurred at night with no streetlights present;
- A rear-end shunt type collision between two cars on the carriageway; and
- A rear-end shunt type collision between two cars whilst one of the cars was waiting at traffic signals.

156. To summarise, there were four collisions on link 51, these comprised of two rear-end shunt type collisions and two losses of control (one of which involved pedestrians). It is considered that there is no significant identifiable pattern in the location and type of the collisions on link 51.

24.1.3.4.30 Link 55 – A1035

157. Link 55 comprises the A1035 between the priority junction with Meaux Lane and the priority junction with Eske Lane. Link 55 is a rural A-road and is 1.3 miles long and has a collision rate the same as the national average.
158. During the study period there have been nine collisions recorded on link 55, two of these were fatal, one was serious and six were slight collisions. The collisions reported on link 55 comprised:
- A fatal collision between a car and a motorcycle, which occurred when a motorcyclist collided with a car that failed to give way emerging from a minor road;
 - A fatal loss of control collision for a cyclist;
 - A failure to give way by a car driver emerging from a minor road, this collision occurred during darkness with no streetlights present;
 - A serious rear-end shunt type collision where a cyclist collided with a slowing car;
 - A failure to give way by a car emerging from a minor road, colliding with a car turning into the minor road;
 - Three rear-end shunt type collisions between two cars; and
 - A failure to give way which led to a collision between a car on link 55 and a car exiting Meaux Lane.
159. To summarise, on link 55 there were nine collisions in the study period, these comprised: four rear-end shunt type collisions, four failures to give way and a loss of control by a cyclist. It is considered that there is a pattern of rear-end shunt type collisions and failures to give way on this link.

24.1.3.4.31 Link 59 – A164/Driffield Road

160. Link 59 comprises the A164/Driffield Road from Driffield Road roundabout north to the edge of the TTSA. Link 59 is a rural A-road and is 0.4 miles long. Link 59 has a collision rate above the national average, there is also a collision cluster on link 59 (cluster 26) located at the roundabout junction between links 58 and 69.
161. During the study period there have been nine collisions reported on link 59 (including collision cluster 26), six serious and three slight; no fatalities have been reported. The collisions at collision cluster 26 comprised:
- A loss of control by a motorcyclist on the approach to the roundabout;
 - A failure to give way by a car entering the roundabout which led to a serious collision with a car on the roundabout;
 - A loss of control by a cyclist on the roundabout which led to a serious collision;
 - A three-car rear-end shunt type collision on approach to the roundabout, this collision occurred during the hours of darkness with streetlights present but reportedly not lit;
 - A serious collision between a motorcycle and a car on the Driffield Road roundabout when the motorcycle has attempted to overtake the car; and
 - A rear-end shunt type collision on the entry to the Driffield Road roundabout, where a van collided with the rear of stationary car.
162. The collision on the rest of the link include:
- A serious three-car rear-end shunt type collision;
 - A serious loss of control collision, which occurred during darkness with no streetlights present; and
 - A serious collision where a motorcyclist attempting to overtake traffic collided head-on with an oncoming car.
163. To summarise, on link 59 there were nine collisions during the study period, these comprised of: three rear-end shunt type collisions, three losses of control, two collisions whilst vehicles performed overtaking manoeuvres, and a failure to give way. It is considered that there is no significant emerging pattern of collision along link 59.

24.1.3.4.32 Link 60 – A1035

164. Link 60 comprises the A1035 between the Driffield Road roundabout and the Dog Kennel Lane roundabout. Link 60 is a rural A-road and is one mile long and has a collision rate is above the national average.
165. During the study period there were a total of six collisions reported on link 60, one was a serious collision and five were slight collisions, no fatal collisions were reported. The collisions reported on Link 60 comprised:
- A collision between a car and a bicycle;
 - A collision between a car and a bicycle at a priority junction;
 - A serious rear end shunt type collision between two cars and a motorcycle;
 - A collision where a car driver strayed into the opposite lane and collided with an oncoming HGV;
 - A collision where an overtaking car collided with an oncoming car; and
 - A loss of control by a car driver leading to the car ending up on the verge.
166. To summarise, on link 60 there were six collisions during the study period, these comprised: two collisions with cyclists, two collisions with oncoming traffic, one loss of control, and one rear-end shunt type collision. It can be considered that there is no significant pattern in the location or type of collision on link 60.

24.1.3.4.33 Link 61 – A1035/Dog Kennel Lane

167. Link 61 consists of the A1035/Dog Kennel Lane between the Dog Kennel Lane roundabout and Killingwoldgraves roundabout. Link 61 is a rural A-road and is 1.1 miles long and has a collision rate above the national average.

168. There are two clusters of collisions on link 61, cluster 27 is located 600m south of the Dog Kennel Lane Roundabout and cluster 28 is located at the roundabout junction between links 61, 62, 63, 64 and 64. During the study period there have been 20 collisions recorded on link 61 (inclusive of both clusters), five have been serious and 15 have been slight collisions; there have been no fatal collisions recorded. The collisions at collision cluster 27 include:
- A loss of control by a car driver;
 - A loss of control by a car driver after attempting to avoid an object in the carriageway. This collision occurred during darkness with no streetlights present;
 - A loss of control by a car driver, leading to a collision with a telegraph pole; and
 - A serious loss of control collision by a car driver.
- The following collisions occurred at cluster 28:
- A failure to give way by a car driver which led to a serious collision with a car leaving the roundabout;
 - A rear-end shunt type collisions between two cars approaching the roundabout;
 - A failure to give way by a car driver entering the roundabout which led to a collision with a cyclist on the roundabout;
 - A failure to give way by a car driver entering the roundabout which led to a collision with a motorcyclist on the roundabout;
 - A collision between an HGV and a car attempting to exit the roundabout;
 - A rear-end shunt type collision between two cars reacting to car that lost control on the opposite carriageway;
 - A loss of control by a car driver on the roundabout when avoiding a car travelling across their path;
 - A loss of control by a car driver exiting the roundabout caused a collision with an oncoming car;
 - A loss of control by a car driver exiting the roundabout; and
 - A rear-end shunt type collision between two cars on approach to the roundabout.

169. The collisions reported outside the clusters on link 61 comprise:
- A loss of control by a car driver, which occurred during darkness with no streetlights present;
 - A loss of control by a car driver leading to one car travelling over the centreline and colliding with an oncoming car;
 - A rear-end shunt type collision between three cars;
 - A loss of control by a car driver;
 - A rear-end shunt type collision with a car colliding with the rear of a slowing motorbike; and
 - A serious collision caused by a loss of control by a motorcycle rider.
- To summarise, there were 20 collisions on link 61 (including clusters 27 and 28), these comprise:
- 11 losses of control collisions;
 - Five rear-end shunt type collisions;
 - Three failures to give way collisions; and
 - A collision caused by poor lane discipline.
170. It can be considered that there is an emerging pattern of loss of control and rear end shunt type collisions on link 61.

24.1.3.4.34 Link 62 – A1174/York Road

171. Link 62 is the A1174 between the Killingwoldgraves roundabout eastwards to the edge of the TTSA on the outskirts of Beverley. Link 62 is a rural A-road and is 1.3 miles long and has a collision rate is above the national average. Link 62 also contains collision cluster 28 (outlined in link 61).
172. During the study period, there were a total of four collisions on link 62 (excluding collision cluster 28), all four were slight collisions, no serious or fatal collisions were recorded.
173. The reported collisions along link 62 comprise:
- A loss of control by a (reportedly) intoxicated car driver, whose car collided with a fence;
 - A loss of control, due to icy conditions, by a car driver who collided with a fence;
 - A collision between a slow-moving car and a (reportedly) intoxicated pedestrian; and
 - A collision between a car and a cow who has entered the road, this collision occurred during darkness with no streetlights present.

174. To summarise, during the study period there were four collisions on link 62, these comprised of: two losses of control, one collision between a car and a pedestrian and one collision between a car and an animal. It is be considered that there is no significant emerging pattern of collisions along on link 62.

24.1.3.4.35 Link 65 – A1079/Bishop Burton

175. Link 65 comprises the A1079 westwards from the Killingwoldgraves roundabout until the western edge of the TTSA in Bishop Burton. Link 65 is a rural A-road and is 0.7 miles long and has collision rate is above the national average. Link 65 also contains collision cluster 28 (outlined in link 61).
176. During the study period, there were a total of two collisions reported on link 65 (excluding those occurring at collision cluster 28). All collisions were slight; no serious or fatal collisions were reported. The collisions reported comprise:
- A failure to give way leading to a car emerging from a minor road colliding with a car on the main road; and
 - A failure to give way by a car driver leading to a collision with another car.
177. To summarise, during the study period there were two collisions on link 65, comprising two failures to give way. It is considered there is no significant pattern of the type and location of the collisions.

24.1.3.4.36 Link 74 – A1033 and A1165

178. Link 74 comprises the A1033 Mount Pleasant and the A1165/Stoneferry Road between the A164/A1033 junction (link 18 and link 19) and the Holwell Road/Sutton Road roundabout. It is an urban A-road and is 2.1 miles long and has a collision rate below the national average.
179. There are however five collision clusters present on link 74, these are: collision cluster 10 (detailed in link 19), collision cluster 24 (detailed in link 40), collision cluster 29 located at the roundabout junction between link 74 and Ferry Lane, collision cluster 30 located at the roundabout junction between link 74, West Carr Lane and the B1237, and collision cluster 31 located at the roundabout junction between links 74 and 75.
180. The collisions at collision cluster 29 comprise:
- A rear-end shunt type collision between two cars on approach to the roundabout;
 - A serious collision between two cars on the slip roads of the northern arm of the roundabout, cause of collision is not given in the data;
 - Seven failures to give way by car drivers, who have entered the roundabout into the path of a cyclist on the roundabout, one of the seven collisions occurred during the hours of darkness with streetlights present and lit;
 - A rear-end shunt type collision between a car and a motorcycle on approach to the roundabout;
 - A loss of control by a motorcyclist travelling around the roundabout;
 - A collision between a car and a cyclist on the circulatory of the roundabout;
 - A loss of control by a car driver when leaving the roundabout;
 - A loss of control by a motorcyclist whilst travelling around the roundabout;
 - A rear-end shunt type collision between cars exiting the roundabout;
 - A loss of control by a motorcyclist entering the roundabout, leading to a serious collision;
 - A loss of control by a car driver leaving the roundabout;
 - A collision on the circulatory lanes of the roundabout between a cyclist and an HGV, due to the HGV not giving way to the cyclist;
 - A collision between a cyclist and a car when both were entering the roundabout, caused by poor lane discipline;

- A collision between a motorcycle and a car, caused by poor lane discipline by the motorcyclist; and
- A rear-end shunt type collision in traffic on approach to the roundabout between a car and a motorcycle.

181. The following collisions occurred within collision cluster 30 and comprise:

- A serious rear-end shunt type collision between a car and an LGV on approach to the roundabout;
- A collision between a car and a cyclist at a crossing;
- A serious collision between two cars, when one car attempted to overtake the other on approach to the roundabout;
- A rear-end shunt type collision between an HGV and a car on approach to the roundabout;
- A loss of control by a car driver on the roundabout resulting in a serious collision;
- A collision between a motorcycle and a car after the car changed lanes and the motorcycle collided with the rear of the car, this collision occurred during the hours of darkness with streetlights present and lit; and
- A rear end shunt on the roundabout.

182. The following collisions occurred within collision cluster 31 and comprise:

- Four rear-end shunt type collisions between two cars on approach to the roundabout;
- A collision between a car and a pedestrian on approach to the roundabout as the pedestrian entered the carriageway at a set of temporary traffic signals, this collision occurred during darkness with streetlights present and lit;
- A rear-end shunt type collision between a car and a bicycle on leaving the roundabout, this collision occurred during the hours of darkness with streetlights present and lit;
- A serious collision between a motorcycle and a bicycle as the bicycle was crossing the road at a cycle path crossing;
- A failure to give way by a car driver who entered the roundabout and collided with another car, which was already on the roundabout;
- A collision between two cars approaching the roundabout, the type of collision is not clear in the data;
- A collision between a car and a pedestrian crossing the road;

- A collision between two cars on the roundabout due to one car travelling the wrong way around the roundabout;
 - A collision between a motorcycle and a car as they were exiting the roundabout in separate lanes;
 - A serious collision on approach to the roundabout between two cars, the cause is not given in the data;
 - A serious collision caused by a loss of control by a car driver;
 - A loss of control by a motorcyclist; and
 - A collision caused by a HGV using lanes incorrectly at the roundabout and causing an injury to a car driver.
183. During the study period there have been 44 collisions recorded within the clusters detailed on this link, nine have been serious and 35 have been slight collisions; there have been no fatal collisions recorded.
184. To summarise, there have been 44 collisions reported during the study period. These collisions comprise:
- 11 rear-end shunt type collisions;
 - Eight failures to give way which led to collisions with cyclists;
 - Eight losses of control;
 - Five collisions caused by poor lane discipline on roundabouts;
 - Four collisions with crossing pedestrians / cyclists;
 - Three collisions with causes not given in the data;
 - Two collisions between vehicles and cyclists on a roundabout;
 - One collision caused by a driver driving the wrong way around a roundabout
 - One collision during an overtake; and
 - One failure to give way.
185. It is considered there an emerging pattern of collision with cyclists and rear-end shunt type collisions on link 74.

24.1.3.4.37 Link 75 – A1033/Sutton Road

186. Link 75 comprises the A1033 Sutton Road between the Holwell Road/Sutton Road roundabout and the Sutton Road/Ennerdale (A1033) roundabout. Link 75 is an urban A-road and is 0.5 miles long and has a collision rate above the national average. There are also two collision clusters on link 75, cluster 23 (which is detailed in link 40) and cluster 31 (which is detailed in link 74).
187. During the study period there have been a total of 12 collisions reported on link 75 (excluding those in collision clusters 23 and 31); two were fatal and 10 were slight collisions. The collisions reported on Link 75 comprise:
- A fatal collision between a car and a pedestrian on the carriageway, which occurred during darkness with lights present and lit;
 - A fatal collision caused by a loss of control by a car driver who left the carriageway, no other information was given;
 - A rear end shunt on the entry to the Holwell Road/Sutton Road roundabout between an LGV and a cyclist;
 - A collision between a car and a cyclist that entered at the side of the carriageway;
 - A collision between a car and a cyclist crossing the exit to the roundabout;
 - A collision between a U-turning car and a motorcycle;
 - A rear-end shunt type collision between two cars;
 - A three-car rear-end shunt type collision;
 - A collision between an LGV towing a caravan and an LGV, the reason for the collision is not given in the data;
 - A collision between a car and a cyclist, the reason for collision is not given in the data;
 - A rear-end shunt type collision on approach to the roundabout; and
 - A failure to give way by a car driver leading to a collision with a cyclist who was on the roundabout.

188. To summarise, on link 75 during the study period there were 16 collisions, these comprised:
- Six collisions with pedestrians / cyclists;
 - Five rear-end shunt type collisions;
 - Two collisions which occurred for unknown reasons; and
 - Three collisions as a result of failures to give way.
189. It can be considered that there is an emerging pattern of collisions with cyclists / pedestrians on this link.

24.1.4 Construction Trip Generation and Assignment

24.1.4.1 Introduction

190. The traffic generation that has informed the assessment presented in the PEIR **Chapter 24 Traffic and Transport** was derived and undertaken by way of a 'first principles' approach. The first principles approach generates traffic volumes from an understanding of material quantities and personnel numbers required for Projects and converts these metrics into vehicle trips.
191. The Applicant has commissioned construction consultants Wardell Armstrong to provide industry expertise to develop the methodologies and quantities that underpin the construction traffic forecasts for the Projects onshore infrastructure.
192. A realistic worst-case traffic demand scenario has been developed by examining:
 - The likely minimum construction programme duration (and therefore maximum activity intensity);
 - Peak demand for materials and personnel;
 - Likely mode share; and
 - The assignment of traffic.
193. The assumptions that underpin the worst-case scenario are discussed below and have been developed with input from Wardell Armstrong and the Applicant's engineering team.
194. Wardell Armstrong and the Applicant's engineering team have substantial experience gained through the construction of previous projects of a similar scope and scale.

24.1.4.2 Construction Scenarios

195. This section provides details of the rationale for the selected worst case construction scenarios that will be assessed within the PEIR **Chapter 24 Traffic and Transport**.
196. The PEIR **Chapter 5 Project Description** outlines that whilst DBS East and DBS West will be the subject of a single DCO application, DBS East and DBS West could be developed in isolation, sequentially or concurrently.

197. The construction of DBS East and DBS West sequentially would however have the same activity schedule and in turn daily traffic demand, as a DBS East or DBS West in isolation scenario as the daily traffic demand would be replicated for each project. In the event that there is an overlap between DBS East and DBS West in the sequential built out scenario, the potential maximum impacts would be assessed within the worst-case parameters identified for DBS East and DBS West concurrent built out scenario.
198. Therefore the two worst-case construction scenarios considered are:
 - Build DBS East or build DBS West in isolation; and
 - Build DBS East and DBS West concurrently.
199. **Chapter 5 Project Description** details that there are currently two possible electrical solutions being considered for DBS West, High Voltage Alternating Current (HVAC) or High Voltage Direct Current (HVDC). DBS East however, can only be constructed as an HVDC project due to the distance of the array area offshore.
200. Therefore, there are two possible electrical solutions for the Projects:
 - One HVDC project and one HVAC project; or
 - Two HVDC projects.
201. **Chapter 5 Project Description** also identifies that there are also two onshore substation Zones (Zone 1 and 4) being considered and different parameters required for the onshore substations depending on which electrical solution is selected, i.e. HDVC or HVAC. There are therefore four possible development scenarios within the onshore substation zones that could be taken forward:
 - Two HVDC substations in Substation Zone 4;
 - One HVDC substation in Substation Zone 1 and one HVAC substation in Substation Zone 4;
 - One HVDC substation in Substation Zone 4 and one HVAC substation in Substation Zone 1; or
 - One HVDC substation in Substation Zone 1 and one HVDC substation in Substation Zone 4.
202. In order to ensure that an inclusive assessment has been undertaken, construction traffic demand for all scenarios has been derived by Wardell Armstrong. These traffic flows are summarised in **Table 24-4** per section (reflecting the extent of onshore Projects infrastructure that can be served from each access). The extent of each section is depicted graphically within **Figure 24-1-2** and described further in **Table 24-6**.

203. Details of the derivation of traffic flows (summarised in **Table 24-4**) are provided within **Annex 5**.

Table 24-4 Summary of Vehicle Trips Per Scenario

Section	Construction Scenarios							
	Zone 1 HVAC Peak Daily Vehicle Trips		Zone 4 HVAC Peak Daily Vehicle Trips		Zone 1 HVDC Peak Daily Vehicle Trips		Zone 4 HVDC Peak Daily Vehicle Trips	
	LVs	HGVs	LVs	HGVs	LVs	HGVs	LVs	HGVs
Onshore export cable route -Section 1	159	116	159	116	135	81	135	81
Onshore export cable route -Section 2	110	71	110	71	110	55	110	55
Onshore export cable route -Section 3	110	73	110	73	110	44	110	44
Onshore export cable route -Section 4	97	81	97	81	97	51	97	51
Onshore export cable route -Section 5	117	88	117	88	110	52	110	52
Onshore export cable route -Section 6	168	96	168	96	154	63	154	63
Onshore export cable route -Section 7	91	71	91	71	91	48	91	48
Onshore export cable route -Section 8	91	82	91	82	91	63	91	63
Onshore export cable route -Section 9	84	75	84	75	82	35	82	35

Section	Construction Scenarios							
	Zone 1 HVAC Peak Daily Vehicle Trips		Zone 4 HVAC Peak Daily Vehicle Trips		Zone 1 HVDC Peak Daily Vehicle Trips		Zone 4 HVDC Peak Daily Vehicle Trips	
	LVs	HGVs	LVs	HGVs	LVs	HGVs	LVs	HGVs
Onshore export cable route -Section 10	154	94	154	94	154	66	154	66
Onshore export cable route - Section 15 (400kV)	91	82	91	82	91	50	91	50
Onshore export cable route -Section 16A	91	78	91	78	91	49	91	49
Onshore export cable route -Section 16B	104	123	104	96	104	64	104	61
Onshore substation Zone 1	231	177	N/A	N/A	231	120	N/A	N/A
Onshore substation Zone 1 - Onshore export cable route -Section 17	91	69	N/A	N/A	91	52	N/A	N/A
Onshore substation Zone 4	N/A	N/A	231	171	N/A	N/A	231	122
Onshore substation Zone 4 - Onshore export cable route -Section 14	N/A	N/A	99	96	N/A	N/A	97	56

204. To present a proportional assessment, all development scenarios and options have been considered to develop a ‘hybrid’ realistic worst-case electrical solutions scenario for ‘in isolation’ and ‘concurrent’ construction scenarios. Further details of the worst case scenarios adopted for traffic and transport are provided in **Table 24-5**.

Table 24-5 Traffic and Transport Worst Case Scenarios

Parameter	Construction Scenarios		
	DBS East or West in Isolation	DBS East and DBS West Concurrently	DBS East and DBS West Sequentially
Onshore export cable route (sections 1 to 10, 15 and 16A)	Table 24-4 identifies that HVAC generates higher overall traffic flows than HVDC. A worst case has therefore been adopted that utilises the HVAC traffic metrics.	If the Projects are delivered concurrently or sequentially there are two possible electrical solutions: • One HVDC project and one HVAC project; or • Two HVDC projects. Noting that Table 24-4 identifies that HVAC generates higher overall traffic flows than HVDC, a worst case has been adopted that utilises the HVAC traffic metrics for one project and the HVDC for the other.	
Onshore substations (including associated onshore export cable route sections 14, 16B and 17).	Table 24-4 identifies that HVAC generates higher overall traffic flows than HVDC. A worst case has therefore been adopted that utilises the HVAC onshore substation metrics. Noting that the onshore substation could be located in either Substation Zone 1 or 4, the assessment adopts a worst case	If DBS West and DBS East are delivered concurrently or sequentially, it is identified that there would be two onshore substations and that these could either both be located in Substation Zone 4 (but only as HVDC substations) or split between Substation Zone 1 and Substation Zone 4, with one substation being provided as HVAC and the second as HVDC or both being provided as HVDC. Table 24-4 identifies that a HVAC onshore substation generates higher overall traffic flows than a HVDC onshore substation. With regard to Substation Zone 4 the worst case scenario therefore assumes two HVDC onshore substations are provided as this represents a worst case for this zone (two	

Parameter	Construction Scenarios		
	DBS East or West in Isolation	DBS East and DBS West Concurrently	DBS East and DBS West Sequentially
	approach which assigns 100% of the onshore substation traffic to each zone, i.e. 100% to Substation Zone 1 and 100% to Substation Zone 4. The traffic generated by Section 16B is greater for Substation Zone 1 than Substation Zone 4 and therefore a HVAC Substation in Zone 1 has been taken as the worst case scenario.	HVDC onshore substations generates more traffic than a single HVAC substation). With regard to Zone 1, only one substation could be provided within this zone. The assessment therefore utilises the worst case HVAC metrics. Noting that the two onshore substations could be located in Substation Zone 4 or split between Substation Zone 1 and 4 the assessment adopts a worst case approach which assigns 100% of the possible trips to each zone. The worst case approach therefore assumes that 100% of the total trips for two onshore HVDC substations are assigned to Substation Zone 4; and 100% of the total trips for one onshore HVAC substation are assigned to Substation Zone 1.	

24.1.4.3 Material and Personnel Demand

205. Section 24.1.4.2 outlines the two worst case scenarios that will be subject to detailed assessment within the PEIR (**Chapter 24 Traffic and Transport**), namely:
- Isolation scenario – Construction of a HVAC project in isolation;
 - Concurrent scenario – Construction of one HVAC and one HVDC project concurrently.
206. The following section therefore outlines how the traffic generation that has informed the assessment (presented in the PEIR, **Chapter 24 Traffic and Transport**), has been derived.
207. **Annex 6** details the forecast quantity of materials and plant movements and associated HGV and LV trips that could be expected for each of the construction activities for the Projects.
208. To ensure that any minor omissions or design changes can be accommodated within the assessed traffic flows the following approach has been applied:
- An appropriate level of contingency (reflecting the uncertainties in the design) has been applied to all HGV and LV trips. Full details are contained within **Annex 6**.
 - LV movements contained within **Annex 6** have been based upon one employee to one vehicle, whereas, in reality, many construction employees may car-share, or travel in contractor provided minibuses. (The DCO application will be supported by an outline Construction Traffic Management Plan (OCTMP) that will contain a range of measures to encourage and promote a reduction in single occupancy vehicle trips amongst construction employees.)
209. Having derived the total traffic demand for the Projects (**Annex 6**), these movements have been distributed into 14 discrete sections reflecting the extent of onshore Projects infrastructure that can be served from each access. The extent of each section is depicted graphically within **Figure 24-1-2** and described further in **Table 24-6**.
210. To develop the construction programme, industry guidance for productivity has been utilised to forecast the shortest realistic construction duration for the Projects and therefore maximum intensity.

211. **Annex 7** and **Annex 8** disaggregates the total Projects in isolation and concurrent construction traffic demand (contained within **Annex 6**) by section and programme to provide total daily HGV and LV trips per month.
212. It can be observed from **Annex 7** and **Annex 8** that construction traffic demand fluctuates according to the intensity of activities that are occurring at any point in the programme.
213. For the Projects in isolation, it can be observed from **Annex 7** that the most intense period of construction activity would be during month 23 for all vehicles and LVs and month 19 for HGVs.
214. For the Projects concurrently, it can be observed from **Annex 8** that the most intense period of construction activity would be during month 24 for all vehicles and LVs and month 17 for HGVs.
215. **Annex 7** and **Annex 8** highlight during the peak months that:
 - For the Projects in isolation, there could be a combined peak of 1,597 LV trips (month 23) and 849 HGV trips (month 19).
 - For the Projects concurrently, there could be a combined peak of 3,027 LV trips (month 24) and 1,257 HGV trips (month 17).
216. The selection of a discrete peak month per mode would not include a tolerance for 'real-time' programme changes (e.g. slippage/acceleration). Therefore, in order to consider a worst case on the local road network, the peak trips per section are assumed to occur at the same time.
217. The selection of the peak demand per section (selecting orange highlighted cells in **Annex 7** and **Annex 8**) would provide tolerance for any slippage/acceleration in individual sections and generate a theoretical worst case scenario month for the purposes of examining the potential impacts upon the local road network.
218. The use of a theoretical worst case scenario month for the Projects in isolation results in a peak of:
 - 1,763 LV trips per day, compared to the peak 1,597 LV trips per day in month 23; and
 - 1,273 HGV trips per day, compared to the peak of 849 HGV trips per day in month 19.

219. The use of a theoretical worst case scenario month for the Projects concurrently results in a peak of:
- 3,470 LV trips per day, compared to the peak 3,027 LV trips per day in month 24; and
 - 2,144 HGV trips per day, compared to the peak of 1,257 HGV trips per day in month 17.
220. These peaks are therefore adopted for the purposes of considering a worst case scenario on the local road network. This method has the advantage of assessing the peak impact on all local links and is therefore appropriate for applying GEART screening for environmental impacts.
221. However, there is a drawback in that the potential combined traffic flows on the main A road (the 'collector roads') are unrealistically over estimated by assigning traffic flows for 14 sections of peak activity concurrently. Traffic flows have therefore been capped at:
- The worst-case peak month of month 19 when there could be 849 HGV trips per day for the Projects in isolation; and
 - The worst-case peak month of month 17 when there could be 1,257 HGV trips per day for the Projects concurrently.
222. No cap has been applied to LV trips.

24.1.4.4 Construction Traffic Assignment

223. Having derived the worst case traffic demand per section, it is necessary to assign the construction traffic to the highway network.
224. A two stage process to assigning construction traffic movements has been adopted. The first stage assigns traffic from each section to a corresponding access or accesses (known as the destination), and the second stage assigns traffic from the destination to its origin.

24.1.4.4.1 Construction Traffic Assignment (Destinations)

225. The destination for all construction traffic will be the temporary construction accesses (noted AC) from the highway network to the respective sections. **Table 24-6** describes the proposed approach to the assignment of the peak construction traffic demand (**Annex 7** and **Annex 8**) per section to a corresponding access (destination). **Figure 24-1-2** depicts the proposed construction accesses.

Table 24-6 Proposed Accesses and Associated Sections

Section	Description of Section	Peak Daily Trips per Section Projects in isolation		Peak Daily Trips per Section Projects concurrently		Access Strategy	Route
		LVs	HGVs	LVs	HGVs		
Section 1	Section 1 comprises of the landfall and onshore export cable route section from the landfall to link 7 (Dunnington Lane).	159	116	294	197	The Applicant is considering two broad alignments for the onshore export cable route close to the landfall. Therefore, the potential access numbers differ in this area to reflect the different routes. Accesses serving the southern onshore export cable route option are designated with the suffix (b), whilst the northern option is designated with the suffix (a). Traffic accessing section 1 would travel to AC1(a or b) and AC2(a or b) on the B1242 (link 6). Traffic accessing the landfall and section of onshore export cable route east of the B1242 would use AC1(a or b). Traffic accessing the section of onshore export cable route west of the B1242 (link 6) would use AC2(a or b) to access from the east and access AC3 to access from the west. To allow construction traffic to travel east/west along the temporary haul road from AC2(a or b) or AC3 and cross over Bewholme Lane and Dunnington Lane, crossing points (CR1 and CR2) would be provided. No construction traffic would be permitted to access or egress on to the public highway at crossing point CR1 and CR2.	It has been agreed with East Riding of Yorkshire Council (at a meeting on the 23/11/2022) to assess the impact of all HGV traffic routeing to AC1 and AC2 from the north via the B1242 (link 4) or the west via the B1249 (link 5). The assessment therefore assigns 100% of HGV traffic to both link 4 and link 5. It was also agreed that no HGV traffic would travel to AC1 or AC2 from the south, i.e. from the direction of Atwick and Hornsea. Traffic travelling to AC3 would travel from the west via link 7 to the A165. No traffic would access from the east. 66% of the total traffic to section 1 is assigned to AC1/2 and 33% to AC3.
Section 2	Section 2 comprises of the onshore export cable route between links 7 and 8.	110	71	220	126	Two accesses are proposed to section 2. One access (AC4) is proposed to the north via link 7 and a second to the south via link 8 (AC5). To allow construction traffic to travel north/south along the temporary haul road from AC4 or AC5 and cross over Billings Lane, a crossing point (CR3) would be provided. No construction traffic would be permitted to access or egress on to the public highway at CR3.	Traffic would travel to AC4 from the west via link 7 to the A165. No traffic would access from the east. Traffic would travel to AC5 from the west via link 8 to the A165. No traffic would access from the east. 50% of the total traffic to section 2 is assigned to AC4 and 50% towards AC5.

Section	Description of Section	Peak Daily Trips per Section Projects in isolation		Peak Daily Trips per Section Projects concurrently		Access Strategy	Route
		LVs	HGVs	LVs	HGVs		
Section 3	Section 3 comprises of onshore export cable route between links 8 and 10.	110	73	220	117	Three accesses are proposed to section 3. One access (AC6) is proposed to the north via link 8 and two accesses to the south via link 10 (AC8) and link 11 (AC7). To the south of section 3, it is unclear at this stage if traffic could cross over Catfoss Drain, therefore two accesses are proposed, AC8 to the south of Catfoss Drain and AC7 to the north. To allow construction traffic to travel north/south along the temporary haul road from AC6 or AC7 and AC8 and cross over Harsell Lane, a crossing point (CR4) would be provided. No construction traffic would be permitted to access or egress on to the public highway at CR4.	Traffic would travel to AC6 from the west via link 8 to the A165. No traffic would access from the east. Traffic would travel to AC7 and AC8 from the west via link 10 to the A165/A1035. No traffic would access from the east. Traffic travelling to AC7 would travel north from link 10 on link 11. No traffic would travel to AC7 from the north. 50% of the total traffic to section 3 is assigned to AC6 and 50% to AC7 and AC8. The traffic assigned to AC7 and AC8 is assigned to both accesses, i.e. 100% of the traffic is assigned to AC7 and 100% to AC8.
Section 4	Section 4 comprises of the onshore export cable route between link 10 and Stream Dike.	97	81	194	132	One access (AC9) is proposed to section 4. To allow construction traffic to travel southwest along the temporary haul road from AC9 and cross over Catwick Heads road and Rise Lane crossing points (CR5 and CR6) would be provided. No construction traffic would be permitted to access or egress on to the public highway at CR5 and CR6.	Traffic would travel to AC9 from the west via link 10 to the A165/A1035. No traffic would access from the east.
Section 5	Section 5 comprises of the onshore export cable route between Stream Dike and Monk Dike.	117	88	227	140	Two accesses are proposed to section 5 from A165 (link 13). One access (AC10) is proposed to the northeast and a second (AC11) to the southwest. To allow construction traffic to travel northeast along the temporary haul road from AC10 and cross over Riston Road, a crossing point (CR7) would be provided. No construction traffic would be permitted to access or egress on to the public highway at CR7.	Traffic would travel to AC10 and AC11 from the north or south via link 13 (the A165). 50% of the total traffic to section 5 is assigned to AC10 and 50% to AC11.

Section	Description of Section	Peak Daily Trips per Section Projects in isolation		Peak Daily Trips per Section Projects concurrently		Access Strategy	Route
		LVs	HGVs	LVs	HGVs		
Section 6	Section 6 comprises of onshore export cable route between Monk Dike and Holderness Drain.	168	96	322	159	Two accesses are proposed to section 6 from A1035 (link 55). One access (AC14) is proposed to the northwest and a second (AC13) to the southeast. To allow construction traffic to travel southeast along the temporary haul road from AC13 and cross over Meaux Lane, a crossing point (CR8) would be provided. No construction traffic would be permitted to access or egress on to the public highway at CR8.	Traffic would travel to AC13 and AC14 from the east of west via link 55 (the A1035). 50% of the total traffic to section 6 is assigned to AC13 and 50% to AC14.
Section 7	Section 7 comprises of the onshore export cable route between Holderness Drain and the River Hull.	91	71	182	119	Two accesses are proposed to section 7 from Eske Lane (link 73). One access (AC15) is proposed to the east and a second (AC16) to the west.	Traffic would travel to AC15 and AC16 from the south via link 73 towards the A1035. No traffic would travel from the north via Eske Lane. 50% of the total traffic to section 7 is assigned to AC15 and 50% to AC16.
Section 8	Section 8 comprises of the onshore export cable route between the River Hull and the Beverley to Bridlington railway Line.	91	82	182	145	The Applicant is considering two options to access section 8 (AC17a or AC17b). Both access options would provide a direct link to the A1035 (link 56).	Traffic would travel to AC17 (a or b) via link 56 from the east or west. The assessment assigns 100% of the total section 8 construction traffic to both AC17a and AC17b.
Section 9	Section 9 comprises of onshore export cable route between the Beverley to Bridlington railway line and Beverley to Market Weighton Rail Trail (Hudson Way).	84	75	166	110	One access (AC18) is proposed to section 9 from Ings Road (link 58).	Traffic would travel to AC18 from the south via link 58 towards the A164. No traffic would travel from the north.
Section 10	Section 10 comprises of the onshore export cable route between	154	94	308	160	Five accesses are proposed to section 10. These five accesses would facilitate construction traffic to access as follows:	Traffic would travel to AC19 and AC20 from the south via link 59 from the A1035.

Section	Description of Section	Peak Daily Trips per Section Projects in isolation		Peak Daily Trips per Section Projects concurrently		Access Strategy	Route
		LVs	HGVs	LVs	HGVs		
	the Beverley to Market Weighton Rail Trail (Hudson Way) and the A1174.					- AC19 would provide access east of the A164 towards the Beverley to Market Weighton Rail Trail (Hudson Way). - AC20 would provide access to section 10 west of the A164; - AC21 and 22 would provide access north and south of the A1035, respectively; and - AC23 would provide access north of the A1174.	No traffic would travel from the north via the A164. Access to AC21 and AC22 would be provided direct from the A1035 with traffic approaching from the east or west. Access to AC23 would be provided direct from the A1174. All HGV traffic would approach from the west (A1079/A1035), no HGV traffic would travel from the east via Beverley. It is assumed that traffic to section 10 would be split equally between the five accesses, i.e. 20% to each access.
Section 16A	Section 16A comprises of the onshore export cable route south of the A1174 to Newbald Road.	91	78	182	127	One access (AC24) is proposed to section 16A from the A1174 (link 62).	Access to AC24 would be provided direct from the A1174. All HGV traffic would approach from the west (A1079/A1035), no HGV traffic would travel from the east via Beverley.
Section 16B	Section 16B comprises of the onshore export cable route between Newbald Road and the A1079/A164.	104	123	208	184	Two accesses are proposed to section 16B from the B1230 (link 71). One access (AC25) is proposed to the north and a second to the south (AC26). To allow construction traffic to travel southeast along the temporary haul road from AC26 and cross over Victoria Road, a crossing point (CR11) would be provided. No construction traffic would be permitted to access or egress on to the public highway at CR11.	Traffic would travel to AC25 and AC26 via the B1230 (link 71) from the west before travelling north on link 68 towards the A1079 and A1035. No HGV traffic would travel west via Walkington or east towards Beverley.

Section	Description of Section	Peak Daily Trips per Section Projects in isolation		Peak Daily Trips per Section Projects concurrently		Access Strategy	Route
		LVs	HGVs	LVs	HGVs		
Section 14 and 17 and Onshore Substations	Section 14 comprises of the onshore export cable route south of the A1079 and the proposed onshore substation(s) at Zone 4. Section 17 comprises of the onshore export cable route east of the A164 and the proposed onshore substation at Zone 1.	400	177	616	296	Access to Section 14 and the proposed onshore substation at Zone 4 is proposed from a new access from the A1079. Access AC42 would comprise of a new access located within an extended layby on the southern side of the road. One access (AC44) is proposed to section 17 and the onshore substation at Zone 1 from the A164 (link 51). To allow construction traffic to travel south from AC44 and cross over Shepherd Lane, a crossing point (CR10) would be provided. No construction traffic would be permitted to access or egress on to the public highway at CR10.	Access to AC44 would be provided direct from the A164. All HGV traffic would approach from the west. Access to AC42 would be provided direct from the A1079. All HGV traffic would approach from the east. The assessment assigns 100% of the total section 14 and 17 construction traffic to all accesses.
Section 15	Section 15 comprises of the onshore cable between the onshore substation(s) and National Grid substation.	91	82	182	132	The Applicant is considering two options to access section 15 (AC43a and AC43b). AC43b is proposed in the same location as the proposed access to the Hornsea Four onshore substation (from the A1079). AC43b could therefore either provide a temporary connection to the new Hornsea Four access or in the event that Hornsea Four doesn't come forward provide a new access adopting the consented Hornsea Four onshore substation access designs. An alternative access option (AC43a) to access section 15 would utilise an existing Jillywood Farm access road from the A164.	Access to AC43a would be provided direct from the A164. All HGV traffic would approach from the south. Traffic would however not be permitted to right turn into the access and would be required to travel north and u-turn at a roundabout. Access to AC43b would be provided direct from the A1079. The assessment assigns 100% of the total section 15 construction traffic to both AC43a and AC43b.

24.1.4.4.2 Construction traffic assignment (origins)

226. At the time of drafting the PEIR (and future DCO submission), the supply chain for materials and workforce cannot be informed by early contractor involvement as the procurement process has not commenced. Therefore, for the purpose of the assessment, traffic distribution is based upon worst case assumptions for HGV distributions utilising assumed supply chain origins and refined socio economics data to identify skills and employee origins for employees.

24.1.4.4.2.1 HGV assignment

227. Bulk materials such as concrete and stone aggregate would make up the majority of the total HGV trips for the Projects. A review of the potential supply chain within the TTSA area indicates that while there are a number of local suppliers that may meet some of the demand for Projects, they are unlikely to meet the substantive material demands required of the Projects.
228. It has therefore been assumed that for the purpose of a worst case HGV assessment, HGVs have been distributed towards the ports of Hull located along the A62 and A1033 corridor. To ensure a worst case assessment 100% of HGV traffic has been assigned to all A62 and A1033 links, i.e. 100% of the Projects peak daily HGV traffic has been assigned to links, 21, 22, 23, 24, 25, 26 (detailed in Figure 24-1 of the PEIR **Chapter 24 Traffic and Transport**).
229. It has also been assumed that as a worst case 100% of HGV traffic would travel north from the A62 / A1033 via the A164 (links 30, 31, 32, 33, 34 and 35) and 100% would also travel north via the A1033 / A1079 (links 19, 74, 75, 40, 45 and 66).
230. In addition to assigning 100% of HGV traffic north from the A62 / A1033 corridor via the A164 and A1033 / A1079, a proportion of the total daily HGV traffic has also been assigned via the A165. Traffic is assigned to the A165 (links 18, 17, 16, 15, 14 and 13) as an alternative for HGVs travelling to accesses north of A165 i.e. accesses AC1 to AC11. The assignment therefore assigns 100% of the HGV traffic travelling to accesses AC1 to AC11 to the A164, A1033 / A1079 and A165.
231. The assessment strategy is not intended to preclude the local supply chain, rather trips from any local suppliers (such as quarries) within the TTSA would be captured within extant permissions and baseline traffic flows and therefore are not assessed separately.

24.1.4.4.2.2 *LV assignment*

- 232. To inform the potential distribution of construction employees for the Projects, the availability of local labour and rented accommodation has been reviewed as part of the socio economics study to inform the potential employee distribution.
- 233. The types of specialist skills required for projects such as DBS East and DBS West, means that construction personnel often have to be drawn from across the country (referred to as in-migrant labour) and not necessarily from local labour sources.
- 234. The socio-economic consultant for the Projects has estimated that 70 % of the workforce would be drawn from the local area (known as 'resident' labour). The remaining 30 % of the workforce would be sourced from a distance beyond a reasonable daily commute (referred to as 'in-migrant' labour).
- 235. For the purpose of a proportional assessment for measuring journey times for employees, a single centroid located to the south of Beverley at the intersection of the A1079 and A164 has been selected.
- 236. Those personnel who are not local (in-migrant labour) i.e. beyond a reasonable daily commute (up to a 60-minute drive), are likely to base themselves within temporary local accommodation.
- 237. The distribution of local hotel accommodation per post code cluster is outlined within **Annex 9**. The distribution of hotel bed spaces per postcode cluster has been factored using a gravity model, whereby the number of bed spaces is divided by the journey time from the centroid (taken from the google maps route planner during a 7am to 8am neutral weekday).
- 238. **Annex 9** also assigns each postcode cluster a point of entry onto the high-way network to inform the distribution of employees.
- 239. The distribution of residents within the local area with the relevant skill sets has been examined. The number of residents working in the construction sector per postcode within the region has been informed by Table QS605EW (Industry) derived from the 2011 Census (Office for National Statistics, 2011). The distribution of local employees per postcode cluster is outlined within **Annex 10**.

240. Local employees have been factored using a gravity model, whereby the number of employees is divided by the journey time from the centre of the postcode cluster to the centroid (taken from the google maps route planner during a 7am to 8am neutral weekday). **Annex 10** also shows the assignment of each postcode cluster to a point of entry on to the TTSA to inform the distribution of local employees.

24.1.4.5 Construction Traffic Assignment Summary

241. The assignment of peak daily LV trips per access from their respective origin point of entry to the TTSA (outlined in **Annex 9** and **Annex 10**) to their respective destination (outlined in **Table 24-6**) is detailed within **Annex 11** for the projects in isolation and **Annex 12** for the projects concurrently.
242. The assignment of peak HGV trips per access from their respective origin point of entry to the TTSA (the A63 and A1033) to their respective destination (outlined in **Table 24-6**) is detailed within **Annex 13** for the projects in isolation and **Annex 14** for the projects concurrently.
243. **Annex 15** and **Annex 16** provides a summary of the forecast worst-case peak daily HGV and LV trips on each of the links within the TTSA for the projects in isolation and concurrently, respectively.

24.1.5 Access Strategy

24.1.5.1 Introduction

244. The proposed access strategy for the Projects is described in **Table 24-6** and the approximate location of the proposed accesses and crossings are also shown on **Figure 24-1-2**.
245. The access locations shown in **Figure 24-1-2** are representative of the areas in which the accesses and crossings would be provided. Depending upon how the Projects are constructed there may be the requirement for one or two accesses and crossing at each access / crossing point depending upon whether the Projects are constructed in isolation or concurrently / sequentially.
246. For example, if the Projects are constructed concurrently or sequentially each project, DBS East and DBS West could have separate accesses and crossings (with the exception of the permanent accesses to the onshore substations).
247. Therefore, where an access is shown on **Figure 24-1-2** (and described in **Table 24-6**) there could potentially be two adjacent accesses (one for each project) if the Projects are constructed concurrently or sequentially. These accesses are detailed further in section 24.1.5.2.
248. **Chapter 5 Project Description** of the PEIR outlines two potential zones within which the onshore substation(s) could be located, these are notated Zone 1 and Zone 4. **Figure 24-1-2** shows the proposed location of the accesses to these onshore substation(s) zones. These accesses are also detailed further at section 24.1.5.3 and section 24.1.5.4, respectively.

24.1.5.2 Onshore Export Cable Corridor and Landfall Accesses

249. It is proposed that (with the exception of the access to the onshore substation(s)) all other construction accesses and crossings would be temporary and following completion of construction works will be removed.
250. The access strategy for these accesses has incorporated a range of indicative outline access design concepts, as follows:
 - **Type A access:** a fully standard compliant, Design Manual for Roads and Bridges (DMRB) major/minor road junction; and
 - **Type B and C access:** to facilitate the temporary haul road crossing the public highway only, via either a priority (give-way) arrangement or a traffic signal controlled arrangement. Proposed for use at all crossing points.

- 251. The access locations would allow construction traffic to access and egress from the public highway. Where accesses are located opposite each other, they would also allow construction traffic to cross from one side of the public highway to the other, i.e. to traverse along the temporary haul road and minimise trips on the local highway network.
- 252. The haul road crossings would allow construction traffic to cross the public highway (but not take direct access), thereby allowing access to be taken from a more suitable location (as detailed in **Table 24-6**).
- 253. Outline access designs for these accesses and crossings are provided within **Annex 17**.

24.1.5.3 Onshore Substation Zone 1 Access

- 254. Access AC44 would comprise of a new fourth arm from the A164 and Ward Way roundabout and provide a means of access for construction and operational traffic to the onshore substation at Zone 1.
- 255. An outline access design for this access is provided within **Annex 17**. This access would be provided for the construction of the Projects and remain for the operational life of the Projects to provide access for maintenance and inspections of the onshore substation.

24.1.5.4 Onshore Substation Zone 4 Access

- 256. Access AC42 would comprise of an extension to the existing layby on the southern side of the A1079 to provide a new access (from the extended layby) to the onshore substation(s) at Zone 4.
- 257. An outline access design for this access is provided within **Annex 17**. This access would be provided for the construction of the Projects and remain for the operational life of the Projects to provide access for maintenance and inspections of the onshore substation.

24.1.5.5 Access Design Development

258. An outline access strategy showing the location of the proposed accesses and crossings has been shared with East Riding of Yorkshire Council (at a meeting on the 23/11/2022). During this meeting, the Applicant and East Riding of Yorkshire Council agreed to engage further post PEIR to refine the design and location of each of the accesses and crossings. No accesses are proposed from roads managed by National Highways or Hull City Council.
259. It is proposed that the indicative outline access design concepts (presented in **Annex 17**) would form the basis of design for further refinement post PEIR. Any future design changes are anticipated to be minor in nature and would not materially alter the assessment presented within PEIR **Chapter 24 Traffic and Transport**.
260. The visibility splay requirements for each access and crossing would be determined based upon measured speeds and provided in accordance with the requirements of the DMRB. Where the visibility splay requirements could not be fully achieved or may have significant adverse environmental impacts (e.g. extensive tree/hedgerow removal) a reduction in the visibility requirement (through temporary speed limit reductions) would be discussed and agreed with East Riding of Yorkshire Council.
261. Prior to the commencement of construction, the technical approvals for the access and crossing designs will be submitted to and agreed with East Riding of Yorkshire Council utilising powers under the Highways Act (1980), New Roads and Street Works Act (1991), or equivalent provisions under the DCO. The technical approval process will include submission of finalised drawings, showing full details of access and crossing improvements, including drainage, lighting, signing, and standard construction details.
262. The technical approval documentation will also include Stage 1 and 2 Road Safety Audit and a Road Safety Audit Response Report (on behalf of the designers).

24.1.6 Summary

263. This TA is provided as an appendix (Appendix 24.1) to the PEIR **Chapter 24 Traffic and Transport**.
264. This TA constitutes an abridged document providing the technical inputs that inform the PEIR. This TA therefore presents details of the:
- Derivation of background and future year traffic flows;
 - Analysis of baseline road safety conditions;
 - Derivation and distribution of construction traffic; and
 - Proposed access strategy.
265. The PEIR **Chapter 24 Traffic and Transport** contains the assessment of all scoped in traffic and transport impacts, namely:
- Severance;
 - Amenity;
 - Road Safety;
 - Driver Delay; and
 - Abnormal Loads.

References

Department for Levelling Up, Housing and Communities (2014). Guidance Travel Plans, Transport Assessments and Statements. Available at: <https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements> [Accessed January 2023].

Department for Transport (2019). Road traffic statistics. Available at: <https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints> [Accessed January 2023].

Department for Transport (2021), RAS0302: Reported road collision and casualty numbers and rates by severity, road type (urban and rural) and class, Great Britain, ten years up to 2021. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1106312/ras0302.ods [Accessed January 2023]

Highways Act (1980). Available at:

<https://www.legislation.gov.uk/ukpga/1980/66/contents/1991-11-01> [Accessed January 2023]

Institute of Environmental Assessment (1993). Guidelines for the Environmental Assessment of Road Traffic Horncastle: (IEA).

New Roads and Street Works Act (1991). Available at:

<https://www.legislation.gov.uk/ukpga/1991/22/contents> [Accessed January 2023]

Office for National Statistics (2011), Industry. Available at:

<https://www.nomisweb.co.uk/census/2011/lc6602ew> [Accessed January 2023]

ATC 1, Allision Lane
Produced by Advanced Traffic Research Ltd

Channel 1 - Northbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	1076	7	900	107	50	8	4
06-22	1173	8	986	115	52	8	4
06-00	1184	8	995	117	52	8	4
00-00	1215	9	1021	119	54	8	4
02/11/2022							
07-19	1104	3	941	110	35	13	2
06-22	1222	4	1048	119	35	14	2
06-00	1232	4	1058	119	35	14	2
00-00	1260	5	1081	122	36	14	2
03/11/2022							
07-19	1093	5	919	105	49	12	3
06-22	1208	5	1020	118	50	12	3
06-00	1216	7	1025	118	50	13	3
00-00	1247	8	1053	119	51	13	3
04/11/2022							
07-19	1276	19	1074	130	37	10	6
06-22	1410	22	1194	138	40	10	6
06-00	1430	23	1212	139	40	10	6
00-00	1460	24	1237	142	41	10	6
05/11/2022							
07-19	1114	7	1017	74	13	2	1
06-22	1184	7	1083	77	14	2	1
06-00	1199	7	1096	79	14	2	1
00-00	1233	7	1127	81	15	2	1
06/11/2022							
07-19	1184	2	1110	59	9	3	1
06-22	1238	2	1159	63	10	3	1
06-00	1245	2	1166	63	10	3	1
00-00	1265	2	1184	64	11	3	1
07/11/2022							
07-19	1084	7	925	99	32	20	1
06-22	1194	11	1024	106	32	20	1
06-00	1205	11	1035	106	32	20	1
00-00	1240	12	1065	109	33	20	1
Average							
07-19	1133	7	984	98	32	10	3
06-22	1233	8	1073	105	33	10	3
06-00	1244	9	1084	106	33	10	3
00-00	1274	10	1110	108	34	10	3

Channel 2 - Southbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	1160	6	986	99	53	11	5
06-22	1230	6	1048	106	54	11	5
06-00	1241	6	1059	106	54	11	5
00-00	1261	7	1072	109	57	11	5
02/11/2022							
07-19	1180	6	1019	99	34	17	5
06-22	1264	6	1097	103	36	17	5
06-00	1280	6	1113	103	36	17	5
00-00	1292	7	1123	104	36	17	5
03/11/2022							
07-19	1133	10	955	97	53	15	3
06-22	1223	10	1037	103	54	16	3
06-00	1240	10	1053	104	54	16	3
00-00	1256	10	1068	105	54	16	3
04/11/2022							
07-19	1429	23	1240	118	34	12	2
06-22	1538	23	1340	124	36	13	2
06-00	1556	23	1357	125	36	13	2
00-00	1574	23	1372	127	37	13	2
05/11/2022							
07-19	1107	7	1019	64	15	2	0
06-22	1223	7	1129	70	15	2	0
06-00	1255	7	1156	72	15	5	0
00-00	1276	7	1173	75	15	6	0
06/11/2022							
07-19	1089	6	1027	43	10	3	0
06-22	1163	6	1096	48	10	3	0
06-00	1174	6	1105	50	10	3	0
00-00	1191	6	1119	53	10	3	0
07/11/2022							
07-19	1119	10	967	85	38	17	2
06-22	1209	12	1051	89	38	17	2
06-00	1219	12	1061	89	38	17	2
00-00	1231	13	1071	90	38	17	2
Average							
07-19	1174	10	1030	86	34	11	2
06-22	1264	10	1114	92	35	11	2
06-00	1281	10	1129	93	35	12	2
00-00	1297	10	1143	95	35	12	2

ATC 2, Alisson Lane
Produced by Advanced Traffic Research Ltd

Channel 1 - Eastbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	485	2	401	65	6	7	4
06-22	527	2	439	68	7	7	4
06-00	537	2	448	69	7	7	4
00-00	543	2	453	70	7	7	4
02/11/2022							
07-19	500	4	409	53	18	14	2
06-22	550	4	451	59	20	14	2
06-00	556	4	455	60	21	14	2
00-00	558	4	456	60	21	15	2
03/11/2022							
07-19	569	7	469	75	14	4	0
06-22	621	8	515	76	18	4	0
06-00	631	8	525	76	18	4	0
00-00	638	8	532	76	18	4	0
04/11/2022							
07-19	788	8	687	70	13	8	2
06-22	867	9	760	73	14	9	2
06-00	879	9	772	73	14	9	2
00-00	885	9	777	73	15	9	2
05/11/2022							
07-19	421	4	373	40	3	1	0
06-22	473	5	420	43	3	2	0
06-00	485	5	431	44	3	2	0
00-00	501	5	445	46	3	2	0
06/11/2022							
07-19	434	9	386	33	3	3	0
06-22	464	9	412	36	4	3	0
06-00	468	9	416	36	4	3	0
00-00	480	9	426	38	4	3	0
07/11/2022							
07-19	505	2	428	60	9	6	0
06-22	545	2	460	66	10	7	0
06-00	548	3	462	66	10	7	0
00-00	552	3	466	66	10	7	0
Average							
07-19	529	5	450	57	9	6	1
06-22	578	6	494	60	11	7	1
06-00	586	6	501	61	11	7	1
00-00	594	6	508	61	11	7	1

Channel 2 - Westbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	467	4	392	51	16	3	1
06-22	520	4	439	56	17	3	1
06-00	523	4	442	56	17	3	1
00-00	541	4	457	59	17	3	1
02/11/2022							
07-19	498	4	430	37	16	8	3
06-22	548	5	471	43	18	8	3
06-00	553	5	475	43	19	8	3
00-00	565	5	485	44	20	8	3
03/11/2022							
07-19	540	7	460	50	15	6	2
06-22	595	8	508	55	16	6	2
06-00	600	9	512	55	16	6	2
00-00	615	9	525	56	16	7	2
04/11/2022							
07-19	543	8	463	50	13	8	1
06-22	622	9	537	54	13	8	1
06-00	635	9	549	55	13	8	1
00-00	648	9	558	57	14	9	1
05/11/2022							
07-19	424	1	383	35	3	1	1
06-22	468	3	422	38	3	1	1
06-00	477	3	431	38	3	1	1
00-00	493	3	446	39	3	1	1
06/11/2022							
07-19	599	2	556	33	5	3	0
06-22	619	4	572	34	6	3	0
06-00	624	4	576	35	6	3	0
00-00	635	4	587	35	6	3	0
07/11/2022							
07-19	589	5	521	45	9	7	2
06-22	643	7	565	50	10	9	2
06-00	647	7	569	50	10	9	2
00-00	661	7	581	52	10	9	2
Average							
07-19	523	4	458	43	11	5	1
06-22	574	6	502	47	12	5	1
06-00	580	6	508	47	12	5	1
00-00	594	6	520	49	12	6	1

ATC 3, Dunnington Lane
Produced by Advanced Traffic Research Ltd

Channel 1 - Eastbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	75	0	33	9	2	31	0
06-22	77	0	34	9	2	32	0
06-00	78	0	35	9	2	32	0
00-00	88	0	44	9	2	33	0
02/11/2022							
07-19	61	1	21	4	3	32	0
06-22	67	1	26	4	3	33	0
06-00	68	1	27	4	3	33	0
00-00	71	1	30	4	3	33	0
03/11/2022							
07-19	67	2	28	4	1	32	0
06-22	67	2	28	4	1	32	0
06-00	68	2	29	4	1	32	0
00-00	78	2	37	4	1	34	0
04/11/2022							
07-19	77	3	31	8	2	33	0
06-22	82	3	32	8	3	36	0
06-00	83	3	33	8	3	36	0
00-00	91	3	41	8	3	36	0
05/11/2022							
07-19	16	0	7	0	1	8	0
06-22	17	0	7	0	1	9	0
06-00	17	0	7	0	1	9	0
00-00	22	0	12	0	1	9	0
06/11/2022							
07-19	14	1	10	1	2	0	0
06-22	15	1	10	2	2	0	0
06-00	15	1	10	2	2	0	0
00-00	15	1	10	2	2	0	0
07/11/2022							
07-19	70	1	27	3	2	37	0
06-22	73	1	28	4	2	38	0
06-00	74	1	29	4	2	38	0
00-00	82	1	37	4	2	38	0
Average							
07-19	54	1	22	4	2	25	0
06-22	57	1	24	4	2	26	0
06-00	58	1	24	4	2	26	0
00-00	64	1	30	4	2	26	0

Channel 2 - Westbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	78	1	42	5	1	29	0
06-22	81	1	44	5	1	30	0
06-00	82	1	45	5	1	30	0
00-00	93	1	50	6	1	35	0
02/11/2022							
07-19	69	0	31	4	1	33	0
06-22	72	0	33	4	1	34	0
06-00	72	0	33	4	1	34	0
00-00	72	0	33	4	1	34	0
03/11/2022							
07-19	75	1	41	6	7	20	0
06-22	81	1	43	6	7	24	0
06-00	81	1	43	6	7	24	0
00-00	86	1	43	6	7	29	0
04/11/2022							
07-19	75	1	41	9	3	21	0
06-22	80	1	45	9	3	22	0
06-00	80	1	45	9	3	22	0
00-00	87	1	46	9	3	28	0
05/11/2022							
07-19	19	1	10	2	0	6	0
06-22	21	1	12	2	0	6	0
06-00	21	1	12	2	0	6	0
00-00	24	1	12	2	0	9	0
06/11/2022							
07-19	14	0	9	3	2	0	0
06-22	14	0	9	3	2	0	0
06-00	14	0	9	3	2	0	0
00-00	14	0	9	3	2	0	0
07/11/2022							
07-19	72	0	41	7	2	22	0
06-22	77	0	43	7	2	25	0
06-00	77	0	43	7	2	25	0
00-00	82	0	43	7	2	30	0
Average							
07-19	57	1	31	5	2	19	0
06-22	61	1	33	5	2	20	0
06-00	61	1	33	5	2	20	0
00-00	65	1	34	5	2	24	0

ATC 4, Catfoss Road
Produced by Advanced Traffic Research Ltd

Channel 1 - Eastbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	404	1	348	39	6	10	0
06-22	446	1	387	42	6	10	0
06-00	451	1	392	42	6	10	0
00-00	458	1	397	43	6	11	0
02/11/2022							
07-19	382	3	313	44	6	16	0
06-22	425	3	354	45	7	16	0
06-00	433	3	360	47	7	16	0
00-00	441	3	367	48	7	16	0
03/11/2022							
07-19	408	2	354	34	5	12	1
06-22	467	2	410	37	5	12	1
06-00	476	2	419	37	5	12	1
00-00	483	2	425	38	5	12	1
04/11/2022							
07-19	537	3	481	40	5	8	0
06-22	607	3	540	50	6	8	0
06-00	623	3	556	50	6	8	0
00-00	629	3	561	51	6	8	0
05/11/2022							
07-19	316	0	282	27	3	4	0
06-22	364	0	326	31	3	4	0
06-00	372	0	332	32	3	5	0
00-00	378	0	337	33	3	5	0
06/11/2022							
07-19	342	1	320	18	1	2	0
06-22	377	1	350	23	1	2	0
06-00	380	1	353	23	1	2	0
00-00	388	1	358	26	1	2	0
07/11/2022							
07-19	372	1	315	41	2	13	0
06-22	416	1	358	42	2	13	0
06-00	421	1	362	43	2	13	0
00-00	431	1	371	44	2	13	0
Average							
07-19	394	2	345	35	4	9	0
06-22	443	2	389	39	4	9	0
06-00	451	2	396	39	4	9	0
00-00	458	2	402	40	4	10	0

Channel 2 - Westbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	351	1	309	27	6	8	0
06-22	393	2	345	31	6	9	0
06-00	394	2	346	31	6	9	0
00-00	411	2	362	32	6	9	0
02/11/2022							
07-19	346	4	286	29	6	19	2
06-22	386	4	323	30	6	21	2
06-00	389	4	326	30	6	21	2
00-00	407	4	342	31	7	21	2
03/11/2022							
07-19	341	1	288	29	7	16	0
06-22	384	1	328	32	7	16	0
06-00	388	1	332	32	7	16	0
00-00	405	1	346	33	7	18	0
04/11/2022							
07-19	365	2	324	26	8	4	1
06-22	409	2	364	29	8	5	1
06-00	412	2	366	30	8	5	1
00-00	424	2	376	32	8	5	1
05/11/2022							
07-19	282	0	254	19	5	4	0
06-22	311	0	280	22	5	4	0
06-00	318	0	286	23	5	4	0
00-00	325	0	291	25	5	4	0
06/11/2022							
07-19	519	5	477	29	0	8	0
06-22	534	5	490	31	0	8	0
06-00	539	5	495	31	0	8	0
00-00	551	5	504	34	0	8	0
07/11/2022							
07-19	400	1	349	27	7	15	1
06-22	437	1	381	28	8	18	1
06-00	439	1	383	28	8	18	1
00-00	468	1	408	31	8	19	1
Average							
07-19	372	2	327	27	6	11	1
06-22	408	2	359	29	6	12	1
06-00	411	2	362	29	6	12	1
00-00	427	2	376	31	6	12	1

ATC 5, A1035

Produced by Advanced Traffic Research Ltd

Channel 1 - Eastbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	3264	15	2589	511	109	23	17
06-22	3563	18	2835	554	113	25	18
06-00	3631	19	2888	567	113	26	18
00-00	3671	20	2914	576	115	28	18
02/11/2022							
07-19	3408	14	2808	428	108	32	18
06-22	3699	15	3050	466	116	34	18
06-00	3762	15	3099	477	118	35	18
00-00	3797	16	3123	481	122	36	19
03/11/2022							
07-19	3437	17	2741	524	105	29	21
06-22	3782	17	3024	573	114	33	21
06-00	3852	17	3083	584	114	33	21
00-00	3893	18	3107	596	117	33	22
04/11/2022							
07-19	4037	27	3240	602	111	32	25
06-22	4392	29	3530	655	118	33	27
06-00	4466	29	3593	666	118	33	27
00-00	4497	30	3613	673	120	34	27
05/11/2022							
07-19	2980	5	2556	351	47	12	9
06-22	3239	5	2764	395	50	13	12
06-00	3319	5	2835	404	50	13	12
00-00	3372	5	2871	413	57	13	13
06/11/2022							
07-19	3124	11	2765	307	22	8	11
06-22	3311	14	2915	336	25	8	13
06-00	3337	14	2937	339	26	8	13
00-00	3392	14	2975	353	28	8	14
07/11/2022							
07-19	3094	12	2477	446	96	41	22
06-22	3383	14	2713	485	101	45	25
06-00	3433	14	2758	489	102	45	25
00-00	3472	14	2786	495	104	47	26
Average							
07-19	3335	14	2739	453	85	25	18
06-22	3624	16	2976	495	91	27	19
06-00	3686	16	3028	504	92	28	19
00-00	3728	17	3056	512	95	28	20

Channel 2 - Westbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	3226	20	2916	192	71	26	1
06-22	3575	22	3232	214	76	30	1
06-00	3612	23	3268	214	76	30	1
00-00	3713	23	3356	222	80	31	1
02/11/2022							
07-19	3304	8	2997	203	68	27	1
06-22	3663	12	3321	225	71	33	1
06-00	3696	12	3353	226	71	33	1
00-00	3792	13	3438	230	77	33	1
03/11/2022							
07-19	3247	16	2929	201	72	28	1
06-22	3649	20	3296	225	75	32	1
06-00	3697	21	3340	228	75	32	1
00-00	3807	21	3439	235	78	33	1
04/11/2022							
07-19	3491	20	3192	191	59	26	3
06-22	4019	23	3678	221	63	31	3
06-00	4095	24	3750	223	63	32	3
00-00	4178	24	3825	227	67	32	3
05/11/2022							
07-19	2966	7	2825	90	29	15	0
06-22	3184	8	3027	101	33	15	0
06-00	3254	8	3090	107	34	15	0
00-00	3317	8	3143	115	36	15	0
06/11/2022							
07-19	3627	16	3491	102	12	6	0
06-22	3788	16	3645	107	14	6	0
06-00	3809	16	3664	109	14	6	0
00-00	3854	16	3704	112	16	6	0
07/11/2022							
07-19	3111	12	2814	179	65	39	2
06-22	3455	14	3126	197	71	45	2
06-00	3494	14	3160	202	71	45	2
00-00	3606	14	3261	207	75	47	2
Average							
07-19	3282	14	3023	165	54	24	1
06-22	3619	16	3332	184	58	27	1
06-00	3665	17	3375	187	58	28	1
00-00	3752	17	3452	193	61	28	1

ATC 6, Meaux Lane
Produced by Advanced Traffic Research Ltd

Channel 1 - Northbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	887	16	742	106	20	3	0
06-22	1013	16	855	118	21	3	0
06-00	1038	16	879	119	21	3	0
00-00	1073	16	914	119	21	3	0
02/11/2022							
07-19	994	16	822	129	19	8	0
06-22	1121	16	935	143	19	8	0
06-00	1135	16	948	144	19	8	0
00-00	1161	16	973	145	19	8	0
03/11/2022							
07-19	1013	10	819	135	41	8	0
06-22	1161	11	945	155	41	9	0
06-00	1174	11	956	156	42	9	0
00-00	1208	11	989	157	42	9	0
04/11/2022							
07-19	1111	16	917	154	19	5	0
06-22	1229	16	1023	164	21	5	0
06-00	1242	16	1036	164	21	5	0
00-00	1278	16	1070	165	22	5	0
05/11/2022							
07-19	823	3	734	75	9	2	0
06-22	901	3	803	84	9	2	0
06-00	931	3	831	86	9	2	0
00-00	945	3	845	86	9	2	0
06/11/2022							
07-19	785	9	708	56	8	4	0
06-22	839	9	761	57	8	4	0
06-00	844	9	766	57	8	4	0
00-00	858	9	778	59	8	4	0
07/11/2022							
07-19	873	10	740	99	20	4	0
06-22	999	12	850	109	24	4	0
06-00	1010	12	857	113	24	4	0
00-00	1038	12	882	116	24	4	0
Average							
07-19	927	11	783	108	19	5	0
06-22	1038	12	882	119	20	5	0
06-00	1053	12	896	120	21	5	0
00-00	1080	12	922	121	21	5	0

Channel 2 - Southbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	1072	12	940	105	12	1	2
06-22	1168	14	1027	112	12	1	2
06-00	1173	14	1032	112	12	1	2
00-00	1188	14	1045	114	12	1	2
02/11/2022							
07-19	1156	18	996	118	22	2	0
06-22	1256	19	1088	123	22	4	0
06-00	1271	19	1103	123	22	4	0
00-00	1286	19	1117	124	22	4	0
03/11/2022							
07-19	1196	12	1045	114	22	3	0
06-22	1297	14	1134	124	22	3	0
06-00	1312	14	1149	124	22	3	0
00-00	1328	14	1164	125	22	3	0
04/11/2022							
07-19	1124	17	991	96	19	1	0
06-22	1263	18	1120	103	20	2	0
06-00	1288	18	1145	103	20	2	0
00-00	1304	18	1160	104	20	2	0
05/11/2022							
07-19	838	3	774	55	6	0	0
06-22	911	3	842	60	6	0	0
06-00	934	3	863	62	6	0	0
00-00	948	4	875	63	6	0	0
06/11/2022							
07-19	817	13	748	49	4	3	0
06-22	871	14	798	52	4	3	0
06-00	881	14	808	52	4	3	0
00-00	894	14	821	52	4	3	0
07/11/2022							
07-19	1050	13	905	108	22	2	0
06-22	1145	14	990	116	23	2	0
06-00	1155	14	999	117	23	2	0
00-00	1171	14	1013	119	23	2	0
Average							
07-19	1036	13	914	92	15	2	0
06-22	1130	14	1000	99	16	2	0
06-00	1145	14	1014	99	16	2	0
00-00	1160	14	1028	100	16	2	0

ATC 7, Eske Lane
Produced by Advanced Traffic Research Ltd

Channel 1 - Northbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	23	0	15	5	2	1	0
06-22	26	0	17	5	3	1	0
06-00	26	0	17	5	3	1	0
00-00	26	0	17	5	3	1	0
02/11/2022							
07-19	24	0	23	1	0	0	0
06-22	26	0	25	1	0	0	0
06-00	26	0	25	1	0	0	0
00-00	26	0	25	1	0	0	0
03/11/2022							
07-19	18	0	16	1	0	1	0
06-22	22	0	20	1	0	1	0
06-00	22	0	20	1	0	1	0
00-00	22	0	20	1	0	1	0
04/11/2022							
07-19	23	0	23	0	0	0	0
06-22	27	0	27	0	0	0	0
06-00	27	0	27	0	0	0	0
00-00	27	0	27	0	0	0	0
05/11/2022							
07-19	8	0	8	0	0	0	0
06-22	10	0	10	0	0	0	0
06-00	10	0	10	0	0	0	0
00-00	10	0	10	0	0	0	0
06/11/2022							
07-19	16	0	16	0	0	0	0
06-22	18	0	17	1	0	0	0
06-00	18	0	17	1	0	0	0
00-00	18	0	17	1	0	0	0
07/11/2022							
07-19	25	1	21	0	1	2	0
06-22	29	1	25	0	1	2	0
06-00	29	1	25	0	1	2	0
00-00	29	1	25	0	1	2	0
Average							
07-19	20	0	17	1	0	1	0
06-22	23	0	20	1	1	1	0
06-00	23	0	20	1	1	1	0
00-00	23	0	20	1	1	1	0

Channel 2 - Southbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	22	0	16	3	2	1	0
06-22	25	0	18	3	3	1	0
06-00	25	0	18	3	3	1	0
00-00	25	0	18	3	3	1	0
02/11/2022							
07-19	25	0	24	1	0	0	0
06-22	25	0	24	1	0	0	0
06-00	25	0	24	1	0	0	0
00-00	25	0	24	1	0	0	0
03/11/2022							
07-19	21	0	18	1	0	2	0
06-22	24	0	21	1	0	2	0
06-00	24	0	21	1	0	2	0
00-00	24	0	21	1	0	2	0
04/11/2022							
07-19	22	0	21	0	0	1	0
06-22	24	0	23	0	0	1	0
06-00	24	0	23	0	0	1	0
00-00	24	0	23	0	0	1	0
05/11/2022							
07-19	10	0	10	0	0	0	0
06-22	13	0	13	0	0	0	0
06-00	13	0	13	0	0	0	0
00-00	13	0	13	0	0	0	0
06/11/2022							
07-19	16	0	16	0	0	0	0
06-22	18	0	17	1	0	0	0
06-00	18	0	17	1	0	0	0
00-00	18	0	17	1	0	0	0
07/11/2022							
07-19	24	1	20	2	0	1	0
06-22	28	1	24	2	0	1	0
06-00	28	1	24	2	0	1	0
00-00	28	1	24	2	0	1	0
Average							
07-19	20	0	18	1	0	1	0
06-22	22	0	20	1	0	1	0
06-00	22	0	20	1	0	1	0
00-00	22	0	20	1	0	1	0

ATC 8, Driffield Road
Produced by Advanced Traffic Research Ltd

Channel 1 - Northbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	4658	13	4209	229	71	127	9
06-22	5279	15	4778	257	84	136	9
06-00	5407	16	4898	262	85	136	10
00-00	5509	17	4986	269	87	140	10
02/11/2022							
07-19	4593	21	4116	277	63	106	10
06-22	5265	22	4727	314	69	122	11
06-00	5361	23	4817	318	70	122	11
00-00	5448	24	4884	323	75	131	11
03/11/2022							
07-19	4763	23	4217	285	119	107	12
06-22	5478	26	4870	313	129	127	13
06-00	5575	26	4962	317	130	127	13
00-00	5657	27	5026	324	134	133	13
04/11/2022							
07-19	4884	39	4330	283	103	119	10
06-22	5483	40	4879	304	115	134	11
06-00	5632	42	5022	306	117	134	11
00-00	5720	42	5096	311	121	139	11
05/11/2022							
07-19	3519	6	3343	128	27	15	0
06-22	3879	7	3680	146	28	18	0
06-00	4028	9	3818	151	30	19	1
00-00	4125	10	3902	158	34	20	1
06/11/2022							
07-19	2655	15	2504	112	19	4	1
06-22	3049	17	2885	121	20	5	1
06-00	3120	17	2955	121	21	5	1
00-00	3207	18	3035	126	21	6	1
07/11/2022							
07-19	4605	17	4076	295	101	107	9
06-22	5220	20	4638	318	114	121	9
06-00	5301	21	4715	320	114	121	10
00-00	5406	21	4811	322	117	125	10
Average							
07-19	4240	19	3828	230	72	84	7
06-22	4808	21	4351	253	80	95	8
06-00	4918	22	4455	256	81	95	8
00-00	5010	23	4534	262	84	99	8

Channel 2 - Southbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	4520	19	4130	214	74	81	2
06-22	4943	24	4510	234	89	84	2
06-00	4999	24	4556	241	91	85	2
00-00	5099	24	4641	251	94	87	2
02/11/2022							
07-19	4421	18	4061	216	56	67	3
06-22	4885	20	4478	252	63	69	3
06-00	4942	20	4530	256	63	70	3
00-00	5048	20	4614	263	67	81	3
03/11/2022							
07-19	4660	34	4212	279	83	51	1
06-22	5206	35	4700	313	99	58	1
06-00	5261	35	4748	317	100	59	2
00-00	5368	35	4835	328	104	64	2
04/11/2022							
07-19	4682	37	4235	246	101	57	6
06-22	5163	39	4672	276	109	61	6
06-00	5247	40	4747	280	111	63	6
00-00	5336	41	4823	286	113	67	6
05/11/2022							
07-19	3061	9	2885	121	34	11	1
06-22	3580	11	3352	163	40	13	1
06-00	3686	11	3447	171	43	13	1
00-00	3767	11	3515	178	47	15	1
06/11/2022							
07-19	2499	15	2320	121	28	14	1
06-22	2745	16	2550	129	34	15	1
06-00	2778	16	2582	129	35	15	1
00-00	2851	16	2648	134	36	16	1
07/11/2022							
07-19	4362	19	3988	225	61	68	1
06-22	4797	22	4388	248	65	73	1
06-00	4843	22	4429	252	66	73	1
00-00	4963	22	4528	261	69	81	2
Average							
07-19	4029	22	3690	203	62	50	2
06-22	4474	24	4093	231	71	53	2
06-00	4537	24	4148	235	73	54	2
00-00	4633	24	4229	243	76	59	2

ATC 9, A1174

Produced by Advanced Traffic Research Ltd

Channel 1 - Eastbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	2350	8	2102	167	55	18	0
06-22	2600	8	2328	182	61	20	1
06-00	2655	8	2379	185	62	20	1
00-00	2678	8	2398	186	63	22	1
02/11/2022							
07-19	2409	6	2184	148	59	8	4
06-22	2690	6	2444	161	64	11	4
06-00	2746	6	2500	161	64	11	4
00-00	2768	6	2517	163	65	13	4
03/11/2022							
07-19	2913	12	2656	167	62	13	3
06-22	3171	12	2896	180	67	13	3
06-00	3238	12	2959	184	67	13	3
00-00	3261	12	2980	185	67	14	3
04/11/2022							
07-19	2712	13	2463	161	59	13	3
06-22	3000	16	2722	178	67	14	3
06-00	3060	16	2781	178	68	14	3
00-00	3086	16	2801	179	70	16	4
05/11/2022							
07-19	2393	1	2264	97	26	5	0
06-22	2661	1	2517	106	30	7	0
06-00	2736	1	2586	109	33	7	0
00-00	2789	1	2634	112	33	8	1
06/11/2022							
07-19	2655	15	2504	112	19	4	1
06-22	3049	17	2885	121	20	5	1
06-00	3120	17	2955	121	21	5	1
00-00	3207	18	3035	126	21	6	1
07/11/2022							
07-19	2289	10	2059	152	58	8	2
06-22	2540	11	2284	171	63	9	2
06-00	2572	11	2316	171	63	9	2
00-00	2595	11	2334	173	65	10	2
Average							
07-19	2419	9	2214	137	47	10	2
06-22	2669	9	2443	150	52	12	2
06-00	2722	9	2494	152	53	12	2
00-00	2753	9	2521	154	54	13	2

Channel 2 - Westbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	2514	5	2258	160	64	20	7
06-22	2848	5	2566	178	70	21	8
06-00	2903	5	2616	181	70	23	8
00-00	2963	6	2666	187	71	25	8
02/11/2022							
07-19	2414	6	2191	144	53	14	6
06-22	2762	6	2516	159	60	15	6
06-00	2827	6	2579	160	61	15	6
00-00	2898	7	2638	164	65	17	7
03/11/2022							
07-19	2856	14	2603	160	61	12	6
06-22	3195	14	2925	167	68	13	8
06-00	3246	14	2974	169	68	13	8
00-00	3318	15	3036	174	70	14	9
04/11/2022							
07-19	2766	10	2556	130	56	7	7
06-22	3068	12	2834	143	63	9	7
06-00	3152	13	2913	144	65	10	7
00-00	3220	14	2966	150	70	11	9
05/11/2022							
07-19	2479	2	2333	113	25	5	1
06-22	2708	2	2542	125	31	6	2
06-00	2788	2	2617	127	34	6	2
00-00	2840	3	2666	127	35	7	2
06/11/2022							
07-19	1971	7	1855	74	19	15	1
06-22	2133	7	2012	78	20	15	1
06-00	2156	7	2034	78	21	15	1
00-00	2211	8	2087	78	21	15	2
07/11/2022							
07-19	2422	7	2182	163	56	11	3
06-22	2707	9	2450	172	61	12	3
06-00	2749	9	2491	173	61	12	3
00-00	2820	10	2554	177	62	13	4
Average							
07-19	2489	7	2283	135	48	12	4
06-22	2774	8	2549	146	53	13	5
06-00	2832	8	2603	147	54	13	5
00-00	2896	9	2659	151	56	15	6

ATC 10, Killingwoldgraves Lane
Produced by Advanced Traffic Research Ltd

Channel 1 - Northbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	3016	8	2568	319	63	55	3
06-22	3281	8	2805	341	67	56	4
06-00	3316	8	2838	343	67	56	4
00-00	3358	8	2871	350	67	58	4
02/11/2022							
07-19	3076	10	2605	326	72	59	4
06-22	3360	10	2861	351	74	59	5
06-00	3408	10	2903	357	74	59	5
00-00	3450	11	2933	366	75	60	5
03/11/2022							
07-19	3283	16	2803	319	80	63	2
06-22	3593	16	3086	340	85	64	2
06-00	3638	16	3129	341	86	64	2
00-00	3679	17	3161	343	89	67	2
04/11/2022							
07-19	3894	46	3358	331	77	80	2
06-22	4239	46	3669	355	81	85	3
06-00	4283	46	3713	355	81	85	3
00-00	4328	46	3749	361	83	86	3
05/11/2022							
07-19	2017	7	1882	102	20	5	1
06-22	2227	7	2076	114	23	5	2
06-00	2280	7	2126	117	23	5	2
00-00	2319	7	2162	119	24	5	2
06/11/2022							
07-19	1787	13	1676	83	9	6	0
06-22	2058	14	1935	93	10	6	0
06-00	2089	14	1965	94	10	6	0
00-00	2132	14	2003	98	10	6	1
07/11/2022							
07-19	2289	10	2059	152	58	8	2
06-22	2540	11	2284	171	63	9	2
06-00	2572	11	2316	171	63	9	2
00-00	2595	11	2334	173	65	10	2
Average							
07-19	2875	16	2493	259	56	50	2
06-22	3155	16	2748	278	59	51	3
06-00	3197	16	2788	280	59	51	3
00-00	3239	16	2823	284	61	52	3

Channel 2 - Southbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	2622	4	2198	284	70	61	5
06-22	2935	4	2482	303	73	68	5
06-00	2977	4	2523	304	73	68	5
00-00	3061	4	2593	318	73	68	5
02/11/2022							
07-19	2579	6	2170	277	69	55	2
06-22	2894	6	2446	309	76	55	2
06-00	2951	6	2499	313	76	55	2
00-00	3037	6	2573	321	79	56	2
03/11/2022							
07-19	2719	11	2297	295	62	49	5
06-22	3076	12	2629	316	64	50	5
06-00	3129	12	2679	318	65	50	5
00-00	3236	12	2759	338	71	51	5
04/11/2022							
07-19	2962	19	2530	288	51	70	4
06-22	3278	20	2814	312	56	72	4
06-00	3339	20	2872	312	59	72	4
00-00	3418	20	2935	323	63	73	4
05/11/2022							
07-19	2004	3	1855	111	30	3	2
06-22	2192	3	2032	120	32	3	2
06-00	2264	3	2099	124	33	3	2
00-00	2322	3	2152	126	36	3	2
06/11/2022							
07-19	2377	10	2196	140	21	9	1
06-22	2532	11	2338	152	21	9	1
06-00	2553	11	2357	154	21	9	1
00-00	2603	11	2403	157	22	9	1
07/11/2022							
07-19	2641	5	2194	309	54	77	2
06-22	2972	8	2486	338	60	78	2
06-00	3010	8	2522	340	60	78	2
00-00	3129	8	2622	355	63	79	2
Average							
07-19	2558	8	2206	243	51	46	3
06-22	2840	9	2461	264	55	48	3
06-00	2889	9	2507	266	55	48	3
00-00	2972	9	2577	277	58	48	3

ATC 11, B1230 Hunsley Road
Produced by Advanced Traffic Research Ltd

Channel 1 - Eastbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	1799	3	1405	274	83	30	4
06-22	2038	3	1605	302	88	34	6
06-00	2088	3	1651	305	88	35	6
00-00	2122	3	1680	309	89	35	6
02/11/2022							
07-19	1869	6	1494	260	73	33	3
06-22	2105	6	1702	279	81	34	3
06-00	2160	6	1751	284	82	34	3
00-00	2191	6	1771	293	84	34	3
03/11/2022							
07-19	1964	7	1579	272	84	19	3
06-22	2216	7	1800	295	88	20	6
06-00	2259	7	1840	297	89	20	6
00-00	2289	7	1865	300	90	21	6
04/11/2022							
07-19	2359	16	1951	293	69	27	3
06-22	2648	16	2193	329	79	27	4
06-00	2701	16	2243	332	79	27	4
00-00	2734	16	2267	337	82	28	4
05/11/2022							
07-19	1651	1	1453	179	15	3	0
06-22	1857	1	1633	198	20	4	1
06-00	1927	1	1698	202	21	4	1
00-00	1967	1	1725	211	24	4	2
06/11/2022							
07-19	1524	6	1366	134	11	7	0
06-22	1739	7	1559	151	14	7	1
06-00	1782	7	1596	156	14	7	2
00-00	1831	7	1636	163	15	7	3
07/11/2022							
07-19	1751	5	1366	279	70	27	4
06-22	1941	7	1531	298	73	27	5
06-00	1970	7	1557	300	73	27	6
00-00	2000	7	1581	304	75	27	6
Average							
07-19	1845	6	1516	242	58	21	2
06-22	2078	7	1718	265	63	22	4
06-00	2127	7	1762	268	64	22	4
00-00	2162	7	1789	274	66	22	4

Channel 2 - Southbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	1532	1	1301	166	32	29	3
06-22	1758	1	1511	178	34	31	3
06-00	1776	1	1529	178	34	31	3
00-00	1842	1	1588	185	34	31	3
02/11/2022							
07-19	1622	3	1378	169	35	35	2
06-22	1813	3	1551	187	35	35	2
06-00	1838	3	1575	188	35	35	2
00-00	1897	3	1630	192	35	35	2
03/11/2022							
07-19	1641	7	1407	174	38	15	0
06-22	1858	8	1604	192	38	16	0
06-00	1882	8	1628	192	38	16	0
00-00	1946	8	1684	198	40	16	0
04/11/2022							
07-19	1786	15	1558	147	36	29	1
06-22	1995	17	1738	170	40	29	1
06-00	2049	17	1792	170	40	29	1
00-00	2108	17	1847	173	41	29	1
05/11/2022							
07-19	1441	1	1360	64	14	1	1
06-22	1573	1	1482	73	15	1	1
06-00	1613	1	1518	77	15	1	1
00-00	1639	1	1541	80	15	1	1
06/11/2022							
07-19	1668	4	1580	73	9	0	2
06-22	1814	5	1713	82	9	3	2
06-00	1825	5	1723	82	9	4	2
00-00	1869	5	1763	85	10	4	2
07/11/2022							
07-19	1623	2	1398	153	39	28	3
06-22	1818	4	1570	169	44	28	3
06-00	1831	4	1581	171	44	28	3
00-00	1911	4	1654	177	45	28	3
Average							
07-19	1616	5	1426	135	29	20	2
06-22	1804	6	1596	150	31	20	2
06-00	1831	6	1621	151	31	21	2
00-00	1887	6	1672	156	31	21	2

ATC 12, A1174 Hull Road
Produced by Advanced Traffic Research Ltd

Channel 1 - Northbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	6074	55	5233	517	158	76	35
06-22	7108	69	6185	569	166	80	39
06-00	7319	70	6382	580	167	80	40
00-00	7521	70	6564	592	172	82	41
02/11/2022							
07-19	6198	35	5386	491	161	109	16
06-22	7253	51	6362	537	171	114	18
06-00	7375	53	6477	540	172	114	19
00-00	7583	54	6665	551	176	117	20
03/11/2022							
07-19	6391	45	5666	452	127	78	23
06-22	7495	60	6680	510	133	85	27
06-00	7634	60	6812	515	134	85	28
00-00	7840	63	6995	527	139	86	30
04/11/2022							
07-19	6484	64	5792	432	114	68	14
06-22	7461	77	6683	479	132	71	19
06-00	7690	77	6899	489	134	72	19
00-00	7887	81	7074	500	139	73	20
05/11/2022							
07-19	5255	23	4924	233	47	23	5
06-22	5819	27	5445	263	52	23	9
06-00	6010	28	5620	276	52	24	10
00-00	6195	30	5785	285	60	25	10
06/11/2022							
07-19	4379	25	4141	168	25	19	1
06-22	4773	27	4507	185	32	19	3
06-00	4858	27	4586	188	33	20	4
00-00	5016	30	4731	195	35	20	5
07/11/2022							
07-19	6041	40	5345	429	124	83	20
06-22	7008	52	6243	472	129	87	25
06-00	7137	53	6364	479	129	87	25
00-00	7353	56	6553	493	135	90	26
Average							
07-19	5832	41	5212	389	108	65	16
06-22	6702	52	6015	431	116	68	20
06-00	6860	53	6163	438	117	69	21
00-00	7056	55	6338	449	122	70	22

Channel 2 - Southbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	6436	52	5663	429	167	96	29
06-22	7260	64	6417	468	183	98	30
06-00	7388	64	6537	473	184	99	31
00-00	7552	69	6675	485	190	102	31
02/11/2022							
07-19	6549	46	5761	437	177	109	19
06-22	7375	55	6520	477	191	111	21
06-00	7542	58	6674	485	193	111	21
00-00	7713	65	6817	496	201	113	21
03/11/2022							
07-19	6717	55	5931	400	170	140	21
06-22	7614	66	6763	435	180	147	23
06-00	7778	68	6920	438	182	147	23
00-00	7945	72	7058	453	188	151	23
04/11/2022							
07-19	6527	61	5820	382	157	96	11
06-22	7383	69	6617	414	170	101	12
06-00	7615	70	6839	422	171	101	12
00-00	7800	75	6992	439	178	104	12
05/11/2022							
07-19	5395	20	5073	211	61	24	6
06-22	6035	23	5682	229	69	25	7
06-00	6245	26	5882	234	70	25	8
00-00	6447	29	6064	243	77	26	8
06/11/2022							
07-19	4392	24	4188	140	26	13	1
06-22	4888	32	4654	157	30	14	1
06-00	4995	33	4756	160	31	14	1
00-00	5173	36	4912	173	36	15	1
07/11/2022							
07-19	6355	42	5599	419	177	103	15
06-22	7175	53	6343	463	191	108	17
06-00	7307	53	6467	469	192	108	18
00-00	7463	56	6600	480	198	111	18
Average							
07-19	6053	43	5434	345	134	83	15
06-22	6819	52	6142	378	145	86	16
06-00	6981	53	6296	383	146	86	16
00-00	7156	57	6445	396	153	89	16

ATC 13, Walkington Road
Produced by Advanced Traffic Research Ltd

Channel 1 - Northbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	411	4	386	12	7	0	2
06-22	437	4	409	15	7	0	2
06-00	441	4	413	15	7	0	2
00-00	443	4	414	16	7	0	2
02/11/2022							
07-19	420	0	400	12	8	0	0
06-22	443	0	421	13	9	0	0
06-00	446	0	424	13	9	0	0
00-00	448	0	425	14	9	0	0
03/11/2022							
07-19	460	1	433	16	9	1	0
06-22	507	1	480	16	9	1	0
06-00	513	1	486	16	9	1	0
00-00	516	1	489	16	9	1	0
04/11/2022							
07-19	403	2	376	17	8	0	0
06-22	429	2	400	18	9	0	0
06-00	439	2	410	18	9	0	0
00-00	440	2	410	19	9	0	0
05/11/2022							
07-19	241	0	226	9	6	0	0
06-22	266	0	250	10	6	0	0
06-00	273	0	257	10	6	0	0
00-00	275	0	259	10	6	0	0
06/11/2022							
07-19	239	1	234	3	0	1	0
06-22	253	1	248	3	0	1	0
06-00	253	1	248	3	0	1	0
00-00	253	1	248	3	0	1	0
07/11/2022							
07-19	379	1	348	20	10	0	0
06-22	406	1	373	21	11	0	0
06-00	407	1	374	21	11	0	0
00-00	408	1	375	21	11	0	0
Average							
07-19	365	1	343	13	7	0	0
06-22	392	1	369	14	7	0	0
06-00	396	1	373	14	7	0	0
00-00	398	1	374	14	7	0	0

Channel 2 - Southbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	617	1	547	54	6	5	4
06-22	648	1	576	56	6	5	4
06-00	653	1	581	56	6	5	4
00-00	657	1	583	58	6	5	4
02/11/2022							
07-19	598	0	500	81	9	2	6
06-22	638	0	534	86	10	2	6
06-00	643	0	539	86	10	2	6
00-00	646	0	541	87	10	2	6
03/11/2022							
07-19	571	0	485	76	4	0	6
06-22	621	0	528	82	5	0	6
06-00	629	0	536	82	5	0	6
00-00	633	0	538	84	5	0	6
04/11/2022							
07-19	594	1	470	105	10	2	6
06-22	634	1	504	111	10	2	6
06-00	642	1	512	111	10	2	6
00-00	647	1	513	114	11	2	6
05/11/2022							
07-19	360	0	307	44	2	1	6
06-22	384	0	328	47	2	1	6
06-00	392	0	335	48	2	1	6
00-00	396	0	339	48	2	1	6
06/11/2022							
07-19	330	0	296	34	0	0	0
06-22	355	0	317	38	0	0	0
06-00	359	0	321	38	0	0	0
00-00	361	0	323	38	0	0	0
07/11/2022							
07-19	525	1	424	84	6	4	6
06-22	557	1	452	88	6	4	6
06-00	558	1	453	88	6	4	6
00-00	558	1	453	88	6	4	6
Average							
07-19	514	0	433	68	5	2	5
06-22	548	0	463	73	6	2	5
06-00	554	0	468	73	6	2	5
00-00	557	0	470	74	6	2	5

ATC 14, Ferry Lane

Produced by Advanced Traffic Research Ltd

Channel 1 - Northbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	91	3	70	15	1	2	0
06-22	97	3	76	15	1	2	0
06-00	98	3	76	16	1	2	0
00-00	98	3	76	16	1	2	0
02/11/2022							
07-19	99	4	74	13	6	2	0
06-22	108	5	81	14	6	2	0
06-00	109	5	82	14	6	2	0
00-00	109	5	82	14	6	2	0
03/11/2022							
07-19	102	3	85	11	3	0	0
06-22	107	4	88	12	3	0	0
06-00	108	4	88	13	3	0	0
00-00	108	4	88	13	3	0	0
04/11/2022							
07-19	92	3	73	13	3	0	0
06-22	96	3	76	14	3	0	0
06-00	99	3	79	14	3	0	0
00-00	99	3	79	14	3	0	0
05/11/2022							
07-19	69	1	58	7	2	1	0
06-22	71	1	60	7	2	1	0
06-00	72	1	61	7	2	1	0
00-00	73	1	62	7	2	1	0
06/11/2022							
07-19	53	4	43	4	2	0	0
06-22	53	4	43	4	2	0	0
06-00	54	4	43	5	2	0	0
00-00	56	4	45	5	2	0	0
07/11/2022							
07-19	93	5	75	12	0	1	0
06-22	97	6	77	13	0	1	0
06-00	97	6	77	13	0	1	0
00-00	97	6	77	13	0	1	0
Average							
07-19	86	3	68	11	2	1	0
06-22	90	4	72	11	2	1	0
06-00	91	4	72	12	2	1	0
00-00	91	4	73	12	2	1	0

Channel 2 - Southbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	99	4	72	19	2	2	0
06-22	112	4	85	19	2	2	0
06-00	113	4	85	20	2	2	0
00-00	114	4	86	20	2	2	0
02/11/2022							
07-19	120	4	94	16	6	0	0
06-22	131	4	103	18	6	0	0
06-00	131	4	103	18	6	0	0
00-00	131	4	103	18	6	0	0
03/11/2022							
07-19	120	5	87	23	5	0	0
06-22	132	5	97	25	5	0	0
06-00	132	5	97	25	5	0	0
00-00	133	5	98	25	5	0	0
04/11/2022							
07-19	114	5	82	21	6	0	0
06-22	120	5	88	21	6	0	0
06-00	125	6	92	21	6	0	0
00-00	125	6	92	21	6	0	0
05/11/2022							
07-19	61	0	53	5	2	1	0
06-22	69	1	58	7	2	1	0
06-00	73	1	61	8	2	1	0
00-00	75	1	63	8	2	1	0
06/11/2022							
07-19	69	5	55	7	2	0	0
06-22	70	5	56	7	2	0	0
06-00	72	5	57	8	2	0	0
00-00	75	5	59	9	2	0	0
07/11/2022							
07-19	114	3	89	17	3	2	0
06-22	119	3	93	18	3	2	0
06-00	120	3	94	18	3	2	0
00-00	121	3	95	18	3	2	0
Average							
07-19	100	4	76	15	4	1	0
06-22	108	4	83	16	4	1	0
06-00	109	4	84	17	4	1	0
00-00	111	4	85	17	4	1	0

ATC 15, B1242 Hornsea Road
Produced by Advanced Traffic Research Ltd

Channel 1 - Northbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
18/11/2022							
07-19	1328	12	1132	129	37	13	5
06-22	1467	15	1259	138	37	13	5
06-00	1496	15	1286	139	38	13	5
00-00	1520	15	1308	140	38	14	5
19/11/2022							
07-19	1110	10	1004	73	17	3	3
06-22	1211	11	1096	80	18	3	3
06-00	1235	12	1115	84	18	3	3
00-00	1257	12	1137	84	18	3	3
20/11/2022							
07-19	1254	9	1143	89	10	3	0
06-22	1315	9	1198	94	11	3	0
06-00	1323	9	1202	98	11	3	0
00-00	1345	9	1222	100	11	3	0
21/11/2022							
07-19	1069	6	906	113	32	9	3
06-22	1177	7	1007	118	33	9	3
06-00	1191	7	1020	118	34	9	3
00-00	1227	8	1053	120	34	9	3
22/11/2022							
07-19	1219	2	1022	136	42	14	3
06-22	1336	2	1126	144	45	16	3
06-00	1354	2	1143	145	45	16	3
00-00	1388	3	1174	146	46	16	3
23/11/2022							
07-19	1132	4	957	124	34	10	3
06-22	1260	5	1072	134	35	11	3
06-00	1285	5	1094	137	35	11	3
00-00	1314	6	1119	138	37	11	3
24/11/2022							
07-19	1195	11	1009	123	38	10	4
06-22	1330	12	1132	134	38	10	4
06-00	1345	12	1147	134	38	10	4
00-00	1373	12	1172	135	39	11	4
Average							
07-19	1187	8	1025	112	30	9	3
06-22	1299	9	1127	120	31	9	3
06-00	1318	9	1144	122	31	9	3
00-00	1346	9	1169	123	32	10	3

Channel 2 - Southbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
18/11/2022							
07-19	1411	16	1159	169	50	14	3
06-22	1523	16	1261	178	51	14	3
06-00	1564	16	1298	182	51	14	3
00-00	1575	16	1306	184	52	14	3
19/11/2022							
07-19	1174	9	1004	132	24	2	3
06-22	1266	9	1085	142	25	2	3
06-00	1287	9	1104	144	25	2	3
00-00	1305	10	1118	146	26	2	3
20/11/2022							
07-19	1246	10	1111	108	12	4	1
06-22	1316	10	1171	116	14	4	1
06-00	1325	10	1179	117	14	4	1
00-00	1351	11	1203	118	14	4	1
21/11/2022							
07-19	1079	2	872	153	40	7	5
06-22	1170	2	951	162	43	7	5
06-00	1182	3	962	162	43	7	5
00-00	1198	4	974	164	44	7	5
22/11/2022							
07-19	1295	4	1034	191	44	15	7
06-22	1389	4	1118	196	47	17	7
06-00	1403	4	1129	199	47	17	7
00-00	1415	5	1139	200	47	17	7
23/11/2022							
07-19	1190	5	942	175	54	10	4
06-22	1291	5	1034	182	56	10	4
06-00	1310	5	1050	184	57	10	4
00-00	1327	5	1063	186	59	10	4
24/11/2022							
07-19	1294	17	1036	169	57	14	1
06-22	1380	17	1105	183	59	15	1
06-00	1400	17	1124	184	59	15	1
00-00	1415	18	1136	186	59	15	1
Average							
07-19	1241	9	1023	157	40	9	3
06-22	1334	9	1104	166	42	10	3
06-00	1353	9	1121	167	42	10	3
00-00	1369	10	1134	169	43	10	3

ATC 16, A1079

Produced by Advanced Traffic Research Ltd

Channel 1 - Eastbound

Class							
Date and Time	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	5387	21	4331	592	173	224	46
06-22	5990	25	4840	650	189	237	49
06-00	6089	25	4932	657	189	237	49
00-00	6193	25	5011	664	195	248	50
02/11/2022							
07-19	5515	16	4436	615	187	204	57
06-22	6176	17	5001	674	203	221	60
06-00	6304	17	5116	685	203	223	60
00-00	6404	17	5189	694	208	236	60
03/11/2022							
07-19	5640	35	4552	644	186	184	39
06-22	6329	35	5130	704	203	216	41
06-00	6460	35	5235	723	204	222	41
00-00	6574	35	5314	734	211	237	43
04/11/2022							
07-19	5530	26	4495	588	184	197	40
06-22	6188	29	5067	635	199	215	43
06-00	6398	30	5255	646	204	220	43
00-00	6530	30	5344	660	209	241	46
05/11/2022							
07-19	4064	16	3635	295	65	48	5
06-22	4594	16	4119	330	69	53	7
06-00	4770	18	4278	340	73	54	7
00-00	4901	18	4375	355	76	68	9
06/11/2022							
07-19	3443	16	3131	241	26	25	4
06-22	3823	18	3476	270	28	27	4
06-00	3908	18	3552	277	29	28	4
00-00	4003	18	3639	282	30	30	4
07/11/2022							
07-19	5495	20	4200	822	207	205	41
06-22	6154	22	4733	899	221	232	47
06-00	6241	23	4802	910	223	236	47
00-00	6335	23	4877	918	226	244	47
Average							
07-19	5011	21	4111	542	147	155	33
06-22	5608	23	4624	595	159	172	36
06-00	5739	24	4739	605	161	174	36
00-00	5849	24	4821	615	165	186	37

Channel 2 - Westbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	4742	12	4063	315	184	140	28
06-22	5439	15	4664	374	199	156	31
06-00	5588	16	4802	378	202	159	31
00-00	5809	17	4976	393	214	177	32
02/11/2022							
07-19	4777	14	4086	314	180	163	20
06-22	5498	15	4713	370	198	182	20
06-00	5578	15	4786	372	200	185	20
00-00	5791	18	4949	389	208	207	20
03/11/2022							
07-19	5034	22	4317	335	182	160	18
06-22	5769	22	4962	380	198	186	21
06-00	5880	22	5067	385	198	187	21
00-00	6102	25	5240	397	208	208	24
04/11/2022							
07-19	5082	29	4445	298	155	137	18
06-22	5709	31	4986	349	170	154	19
06-00	5826	32	5095	352	172	156	19
00-00	6046	34	5270	367	181	173	21
05/11/2022							
07-19	3956	15	3720	150	47	22	2
06-22	4330	15	4056	172	58	26	3
06-00	4463	15	4185	174	60	26	3
00-00	4604	16	4303	180	65	36	4
06/11/2022							
07-19	3324	11	3162	104	26	20	1
06-22	3628	11	3445	117	31	23	1
06-00	3679	11	3491	119	32	25	1
00-00	3777	11	3577	121	33	33	2
07/11/2022							
07-19	4819	10	4196	316	122	162	13
06-22	5491	17	4772	349	140	197	16
06-00	5565	17	4841	351	141	199	16
00-00	5786	19	5016	365	151	219	16
Average							
07-19	4533	16	3998	262	128	115	14
06-22	5123	18	4514	302	142	132	16
06-00	5226	18	4610	304	144	134	16
00-00	5416	20	4762	316	151	150	17

ATC 17, Catwick Heads North
Produced by Advanced Traffic Research Ltd

Channel 1 - Northbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	105	0	82	17	4	2	0
06-22	117	0	92	19	4	2	0
06-00	117	0	92	19	4	2	0
00-00	122	0	96	20	4	2	0
02/11/2022							
07-19	106	1	78	17	5	5	0
06-22	117	1	86	20	5	5	0
06-00	118	1	87	20	5	5	0
00-00	122	1	91	20	5	5	0
03/11/2022							
07-19	97	1	78	16	2	0	0
06-22	102	1	83	16	2	0	0
06-00	102	1	83	16	2	0	0
00-00	106	1	87	16	2	0	0
04/11/2022							
07-19	97	1	78	16	2	0	0
06-22	102	1	83	16	2	0	0
06-00	102	1	83	16	2	0	0
00-00	106	1	87	16	2	0	0
05/11/2022							
07-19	67	1	56	9	0	1	0
06-22	72	1	61	9	0	1	0
06-00	74	1	62	10	0	1	0
00-00	77	1	64	11	0	1	0
06/11/2022							
07-19	64	0	56	7	0	1	0
06-22	65	0	57	7	0	1	0
06-00	65	0	57	7	0	1	0
00-00	68	0	60	7	0	1	0
07/11/2022							
07-19	92	2	70	15	3	2	0
06-22	101	2	78	16	3	2	0
06-00	101	2	78	16	3	2	0
00-00	106	2	83	16	3	2	0
Average							
07-19	88	1	69	13	2	2	0
06-22	95	1	76	14	2	2	0
06-00	96	1	76	14	2	2	0
00-00	100	1	80	15	2	2	0

Channel 2 - Southbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	118	0	97	15	4	2	0
06-22	129	0	105	18	4	2	0
06-00	130	0	106	18	4	2	0
00-00	130	0	106	18	4	2	0
02/11/2022							
07-19	93	2	72	13	2	4	0
06-22	98	2	76	14	2	4	0
06-00	100	2	78	14	2	4	0
00-00	100	2	78	14	2	4	0
03/11/2022							
07-19	99	1	83	14	1	0	0
06-22	108	1	91	14	2	0	0
06-00	109	1	92	14	2	0	0
00-00	109	1	92	14	2	0	0
04/11/2022							
07-19	87	2	68	10	4	3	0
06-22	94	2	75	10	4	3	0
06-00	95	2	76	10	4	3	0
00-00	95	2	76	10	4	3	0
05/11/2022							
07-19	63	2	52	8	1	0	0
06-22	67	2	56	8	1	0	0
06-00	67	2	56	8	1	0	0
00-00	69	2	58	8	1	0	0
06/11/2022							
07-19	51	1	46	2	0	2	0
06-22	54	1	49	2	0	2	0
06-00	54	1	49	2	0	2	0
00-00	55	1	50	2	0	2	0
07/11/2022							
07-19	93	1	75	15	1	1	0
06-22	100	1	82	15	1	1	0
06-00	100	1	82	15	1	1	0
00-00	100	1	82	15	1	1	0
Average							
07-19	86	1	70	11	2	2	0
06-22	93	1	76	12	2	2	0
06-00	94	1	77	12	2	2	0
00-00	94	1	77	12	2	2	0

ATC 18, Walkington Heads
Produced by Advanced Traffic Research Ltd

Channel 1 - Eastbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
09/11/2022							
07-19	729	4	623	87	7	8	0
06-22	851	4	738	93	8	8	0
06-00	875	4	761	94	8	8	0
00-00	875	4	761	94	8	8	0
10/11/2022							
07-19	1669	12	1313	238	58	47	1
06-22	1852	12	1470	257	64	47	2
06-00	1888	12	1502	261	64	47	2
00-00	1919	12	1525	268	65	47	2
11/11/2022							
07-19	2036	11	1677	246	68	33	1
06-22	2268	12	1885	266	70	34	1
06-00	2327	12	1942	268	70	34	1
00-00	2356	12	1965	272	71	34	2
12/11/2022							
07-19	1171	17	1066	63	22	3	0
06-22	1284	17	1169	69	26	3	0
06-00	1326	17	1211	69	26	3	0
00-00	1356	17	1235	72	29	3	0
13/11/2022							
07-19	841	9	768	54	7	3	0
06-22	971	9	895	56	8	3	0
06-00	1011	9	931	59	8	4	0
00-00	1031	9	947	62	9	4	0
14/11/2022							
07-19	1465	10	1151	229	45	26	4
06-22	1606	10	1273	245	48	26	4
06-00	1624	10	1289	247	48	26	4
00-00	1642	10	1303	250	49	26	4
15/11/2022							
07-19	1458	1	1149	216	50	41	1
06-22	1614	1	1283	237	51	41	1
06-00	1640	1	1307	239	51	41	1
00-00	1666	1	1322	248	53	41	1
Average							
07-19	1421	9	1163	180	42	26	1
06-22	1579	9	1303	195	45	27	1
06-00	1613	9	1335	196	45	27	1
00-00	1636	9	1352	201	46	27	2

Channel 2 - Westbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
09/11/2022							
07-19	620	1	509	84	10	16	0
06-22	717	1	597	93	10	16	0
06-00	737	1	616	94	10	16	0
00-00	737	1	616	94	10	16	0
10/11/2022							
07-19	1776	3	1478	222	23	47	3
06-22	2000	4	1685	237	23	48	3
06-00	2018	4	1703	237	23	48	3
00-00	2092	4	1762	249	24	49	4
11/11/2022							
07-19	1996	18	1662	246	30	40	0
06-22	2199	18	1851	256	33	41	0
06-00	2220	18	1870	258	33	41	0
00-00	2286	18	1922	268	35	42	1
12/11/2022							
07-19	1302	13	1201	77	8	3	0
06-22	1401	13	1293	82	10	3	0
06-00	1436	13	1326	84	10	3	0
00-00	1479	14	1364	87	10	3	1
13/11/2022							
07-19	1543	7	1455	72	8	0	1
06-22	1661	7	1564	80	9	0	1
06-00	1672	7	1575	80	9	0	1
00-00	1707	7	1607	82	10	0	1
14/11/2022							
07-19	1694	7	1414	211	34	27	1
06-22	1910	7	1610	228	35	29	1
06-00	1922	7	1620	229	36	29	1
00-00	2040	7	1713	250	39	30	1
15/11/2022							
07-19	1616	1	1330	196	40	47	2
06-22	1830	1	1513	221	42	51	2
06-00	1852	1	1535	221	42	51	2
00-00	1940	1	1611	227	44	54	3
Average							
07-19	1501	7	1266	173	24	30	1
06-22	1676	7	1425	186	26	31	1
06-00	1698	7	1445	187	26	31	1
00-00	1762	8	1498	196	27	32	2

ATC 19, Copplesflat Lane (South)
Produced by Advanced Traffic Research Ltd

Channel 1 - Northbound

Class							
Date and Time	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	1295	13	1163	94	14	10	1
06-22	1398	14	1262	96	14	11	1
06-00	1430	14	1293	97	14	11	1
00-00	1438	14	1298	99	14	12	1
02/11/2022							
07-19	1458	11	1308	110	20	8	1
06-22	1549	12	1394	114	20	8	1
06-00	1564	12	1409	114	20	8	1
00-00	1578	12	1422	115	20	8	1
03/11/2022							
07-19	1286	18	1168	75	15	10	0
06-22	1393	19	1270	78	15	11	0
06-00	1407	19	1284	78	15	11	0
00-00	1417	19	1293	79	15	11	0
04/11/2022							
07-19	1468	49	1278	115	14	12	0
06-22	1547	50	1352	115	15	15	0
06-00	1572	51	1375	116	15	15	0
00-00	1580	51	1382	117	15	15	0
05/11/2022							
07-19	726	9	684	27	4	1	1
06-22	795	9	750	30	4	1	1
06-00	818	9	771	32	4	1	1
00-00	831	9	782	34	4	1	1
06/11/2022							
07-19	673	19	624	25	2	3	0
06-22	715	20	663	27	2	3	0
06-00	721	20	668	27	2	4	0
00-00	725	20	672	27	2	4	0
07/11/2022							
07-19	1281	6	1164	83	18	10	0
06-22	1368	7	1248	85	18	10	0
06-00	1384	7	1264	85	18	10	0
00-00	1394	7	1273	86	18	10	0
Average							
07-19	1170	18	1056	76	12	8	0
06-22	1252	19	1134	78	13	8	0
06-00	1271	19	1152	78	13	9	0
00-00	1280	19	1160	80	13	9	0

Channel 2 - Southbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	607	5	509	71	10	10	2
06-22	680	5	575	77	11	10	2
06-00	690	5	585	77	11	10	2
00-00	709	5	599	82	11	10	2
02/11/2022							
07-19	590	8	482	84	10	6	0
06-22	663	8	551	87	11	6	0
06-00	674	8	562	87	11	6	0
00-00	689	8	576	88	11	6	0
03/11/2022							
07-19	604	5	510	75	11	1	2
06-22	678	5	577	81	12	1	2
06-00	697	5	596	81	12	1	2
00-00	714	5	608	86	12	1	2
04/11/2022							
07-19	548	26	450	48	13	9	2
06-22	627	26	526	51	13	9	2
06-00	647	26	544	52	14	9	2
00-00	670	26	563	55	15	9	2
05/11/2022							
07-19	467	5	419	39	4	0	0
06-22	538	5	486	43	4	0	0
06-00	555	5	503	43	4	0	0
00-00	567	5	513	45	4	0	0
06/11/2022							
07-19	424	7	398	17	2	0	0
06-22	479	7	447	22	3	0	0
06-00	489	7	456	23	3	0	0
00-00	498	7	465	23	3	0	0
07/11/2022							
07-19	489	4	428	45	9	2	1
06-22	545	4	481	48	9	2	1
06-00	553	4	489	48	9	2	1
00-00	571	4	506	49	9	2	1
Average							
07-19	533	9	457	54	8	4	1
06-22	601	9	520	58	9	4	1
06-00	615	9	534	59	9	4	1
00-00	631	9	547	61	9	4	1

ATC 20, Broadgate B1230
Produced by Advanced Traffic Research Ltd

Channel 1 - Northbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	3019	13	2718	221	48	12	7
06-22	3317	15	2997	232	50	16	7
06-00	3383	15	3061	234	50	16	7
00-00	3419	15	3092	239	50	16	7
02/11/2022							
07-19	3132	16	2840	212	43	12	9
06-22	3493	19	3178	231	44	12	9
06-00	3541	19	3224	232	45	12	9
00-00	3572	19	3249	238	45	12	9
03/11/2022							
07-19	3222	26	2907	232	44	8	5
06-22	3580	30	3250	239	46	9	6
06-00	3640	30	3308	241	46	9	6
00-00	3675	30	3337	245	47	10	6
04/11/2022							
07-19	3496	27	3201	212	34	14	8
06-22	3916	30	3596	232	36	14	8
06-00	4004	30	3680	236	36	14	8
00-00	4044	30	3713	241	37	15	8
05/11/2022							
07-19	2686	11	2552	108	7	1	7
06-22	2997	11	2848	120	9	2	7
06-00	3099	11	2945	124	10	2	7
00-00	3150	11	2984	131	14	2	8
06/11/2022							
07-19	2293	25	2193	58	9	8	0
06-22	2587	27	2474	68	9	8	1
06-00	2629	28	2514	68	9	8	2
00-00	2681	28	2563	71	9	8	2
07/11/2022							
07-19	3011	15	2710	219	44	16	7
06-22	3311	18	2994	228	47	16	8
06-00	3355	19	3035	229	47	16	9
00-00	3389	19	3064	231	50	16	9
Average							
07-19	2980	19	2732	180	33	10	6
06-22	3314	21	3048	193	34	11	7
06-00	3379	22	3110	195	35	11	7
00-00	3419	22	3143	199	36	11	7

Channel 2 - Southbound

Date and Time	Class						
	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
01/11/2022							
07-19	2360	13	2052	230	46	11	8
06-22	2647	13	2313	252	47	13	9
06-00	2687	13	2351	254	47	13	9
00-00	2749	13	2404	260	48	15	9
02/11/2022							
07-19	2405	9	2087	240	46	14	9
06-22	2717	10	2375	260	48	15	9
06-00	2766	10	2420	264	48	15	9
00-00	2814	10	2461	270	48	16	9
03/11/2022							
07-19	2460	13	2140	238	53	10	6
06-22	2792	14	2442	262	56	12	6
06-00	2828	14	2477	263	56	12	6
00-00	2887	14	2528	269	56	14	6
04/11/2022							
07-19	2592	17	2296	203	53	15	8
06-22	2890	18	2562	231	56	15	8
06-00	2978	18	2650	231	56	15	8
00-00	3035	18	2699	237	57	16	8
05/11/2022							
07-19	2174	4	2031	118	13	1	7
06-22	2368	4	2212	129	15	1	7
06-00	2434	4	2273	134	15	1	7
00-00	2480	4	2315	138	15	1	7
06/11/2022							
07-19	1991	9	1871	100	8	2	1
06-22	2186	9	2055	110	8	3	1
06-00	2202	10	2070	110	8	3	1
00-00	2239	10	2104	113	8	3	1
07/11/2022							
07-19	2323	8	2017	219	57	13	9
06-22	2633	10	2298	241	62	13	9
06-00	2654	10	2317	243	62	13	9
00-00	2725	10	2377	250	63	16	9
Average							
07-19	2329	10	2071	193	39	9	7
06-22	2605	11	2322	212	42	10	7
06-00	2650	11	2365	214	42	10	7
00-00	2704	11	2413	220	42	12	7

Growth Factors

Growth Period	Kingston upon Hull, City of		East Riding of Yorkshire	
	Annual Average Daily Traffic	Annual Average Weekday Traffic	Annual Average Daily Traffic	Annual Average Weekday Traffic
From 2019 to 2022	1.0492	1.0493	1.0412	1.0411
From 2022 to 2026	1.0553	1.0551	1.0523	1.0518

Note: used car driver only, East Riding of Yorkshire/Kingston upon Hull, National Trip End Model (NTEM) all areas dataset, Trip End Model Programme (TEMPro) version 7.2, National Trip Model AF15

Link Details	2019 Surveyed Flows				
	Base 24HR AADT			Base 18HR AAWT	
	HGVs	Total		HGVs	Total
1	527	10651		457	8793
2	527	10651		457	8793
3	534	8305		463	6856
4	N/S	N/S		N/S	N/S
5	N/S	N/S		N/S	N/S
6	N/S	N/S		N/S	N/S
7	N/S	N/S		N/S	N/S
8	N/S	N/S		N/S	N/S
9	527	10651		457	8793
10	N/S	N/S		N/S	N/S
11	N/S	N/S		N/S	N/S
12	1033	16837		895	13899
13	591	9461		512	7810
14	591	9461		512	7810
15	591	9461		512	7810
16	591	9461		512	7810
17	651	25269		564	20860
18	1075	14653		932	12096
19	1258	18330		1090	15132
20	1022	10984		886	9068
21	4323	38808		3747	32037
22	1022	10984		886	9068
23	3033	28646		2629	23648
24	4649	41906		4029	34594
25	5582	50413		4838	41617
26	6146	62151		5327	51307
27	6327	52615		5484	43435
28	2912	32746		2524	27033
29	1687	22807		1462	18828
30	1274	19947		1104	16467
31	1274	19947		1104	16467
32	1274	19947		1104	16467
33	1402	32822		1215	27095
34	1402	32822		1215	27095
35	1402	32822		1215	27095
36	N/S	N/S		N/S	N/S
37	62	2442		54	2016
38	939	21991		814	18154
39	11	4613		10	3808
40	783	18997		679	15682
45	869	21087		753	17408
46	N/S	N/S		N/S	N/S
49	N/S	N/S		N/S	N/S
50	465	9574		403	7904
51	465	9574		403	7904
52	803	15671		696	12937
53	803	15671		696	12937
54	988	19389		856	16006
55	988	19389		856	16006
56	988	19389		856	16006
57	774	13305		671	10984
58	N/S	N/S		N/S	N/S
59	N/S	N/S		N/S	N/S
60	955	10059		828	8304
61	966	14672		837	12112
62	N/S	N/S		N/S	N/S
63	1147	19516		994	16111
64	N/S	N/S		N/S	N/S
65	N/S	N/S		N/S	N/S
66	1028	20421		891	16858
68	N/S	N/S		N/S	N/S
69	N/S	N/S		N/S	N/S
71	N/S	N/S		N/S	N/S
73	N/S	N/S		N/S	N/S
74	1823	24145		1580	19932
75	783	18997		679	15682

AADT = Annual Average Daily Traffic
 AAWT = Annual Average Weekday Traffic
 N/S = Not Surveyed

Link Details		2022 Surveyed Flows			
Link ID	Base 24HR AADT			Base 18HR AAWT	
	HGVs	Total		HGVs	Total
1	N/S	N/S		N/S	N/S
2	N/S	N/S		N/S	N/S
3	N/S	N/S		N/S	N/S
4	48	2966		46	2330
5	19	1368		17	1097
6	50	3127		47	2442
7	27	140		24	144
8	16	1011		15	781
9	N/S	N/S		N/S	N/S
10	234	8603		104	6724
11	4	223		4	194
12	N/S	N/S		N/S	N/S
13	N/S	N/S		N/S	N/S
14	N/S	N/S		N/S	N/S
15	N/S	N/S		N/S	N/S
16	N/S	N/S		N/S	N/S
17	N/S	N/S		N/S	N/S
18	N/S	N/S		N/S	N/S
19	N/S	N/S		N/S	N/S
20	N/S	N/S		N/S	N/S
21	N/S	N/S		N/S	N/S
22	N/S	N/S		N/S	N/S
23	N/S	N/S		N/S	N/S
24	N/S	N/S		N/S	N/S
25	N/S	N/S		N/S	N/S
26	N/S	N/S		N/S	N/S
27	N/S	N/S		N/S	N/S
28	N/S	N/S		N/S	N/S
29	N/S	N/S		N/S	N/S
30	N/S	N/S		N/S	N/S
31	N/S	N/S		N/S	N/S
32	N/S	N/S		N/S	N/S
33	N/S	N/S		N/S	N/S
34	N/S	N/S		N/S	N/S
35	N/S	N/S		N/S	N/S
36	18	2202		17	1925
37	N/S	N/S		N/S	N/S
38	N/S	N/S		N/S	N/S
39	N/S	N/S		N/S	N/S
40	N/S	N/S		N/S	N/S
45	N/S	N/S		N/S	N/S
46	236	16060		210	12754
49	236	16060		210	12754
50	N/S	N/S		N/S	N/S
51	N/S	N/S		N/S	N/S
52	N/S	N/S		N/S	N/S
53	N/S	N/S		N/S	N/S
54	N/S	N/S		N/S	N/S
55	N/S	N/S		N/S	N/S
56	N/S	N/S		N/S	N/S
57	N/S	N/S		N/S	N/S
58	5	100		4	80
59	164	11025		139	9230
60	N/S	N/S		N/S	N/S
61	N/S	N/S		N/S	N/S
62	73	6465		62	5129
63	N/S	N/S		N/S	N/S
64	113	7120		104	5969
65	354	12746		296	10404
66	N/S	N/S		N/S	N/S
68	113	7120		104	5969
69	73	4611		66	3589
71	58	7031		52	5064
73	1	53		1	45
74	N/S	N/S		N/S	N/S
75	N/S	N/S		N/S	N/S

AADT = Annual Average Daily Traffic
 AAWT = Annual Average Weekday Traffic
 N/S = Not Surveyed

Link Details	2026 Future Data				
	Base 24HR AADT			Base 18HR AAWT	
	HGVs	Total		HGVs	Total
1	577	11670		500	9628
2	577	11670		500	9628
3	585	9099		507	7507
4	51	3121		48	2451
5	20	1440		18	1154
6	53	3291		50	2569
7	28	147		25	151
8	17	1064		16	822
9	577	11670		500	9628
10	246	9053		109	7072
11	4	235		4	204
12	1132	18448		980	15220
13	648	10366		561	8552
14	648	10366		561	8552
15	648	10366		561	8552
16	654	10446		567	8647
17	721	27899		625	23095
18	1190	16178		1032	13392
19	1393	20238		1207	16753
20	1132	12127		981	10039
21	4787	42847		4148	35469
22	1132	12127		981	10039
23	3358	31627		2910	26181
24	5147	46267		4461	38300
25	6181	55660		5356	46075
26	6734	68096		5833	56183
27	6932	57648		6005	47562
28	3191	35878		2764	29601
29	1848	24989		1601	20617
30	1396	21855		1209	18032
31	1396	21855		1209	18032
32	1396	21855		1209	18032
33	1536	35962		1331	29670
34	1536	35962		1331	29670
35	1536	35962		1331	29670
36	19	2317		18	2025
37	68	2676		59	2207
38	1029	24095		891	19879
39	12	5054		10	4170
40	867	20974		751	17362
45	962	23282		834	19272
46	248	16900		221	13415
49	248	16900		221	13415
50	509	10490		441	8655
51	509	10490		441	8655
52	880	17170		762	14166
53	880	17170		762	14166
54	1083	21244		938	17527
55	1083	21244		938	17527
56	1083	21244		938	17527
57	848	14578		735	12027
58	5	105		4	84
59	173	11602		146	9708
60	1046	11021		906	9093
61	1058	16075		917	13263
62	77	6803		65	5395
63	1257	21383		1089	17642
64	119	7492		110	6279
65	372	13413		312	10943
66	1126	22374		976	18460
68	119	7492		110	6279
69	77	4852		69	3775
71	61	7399		55	5326
73	1	56		1	48
74	2018	26658		1749	22067
75	867	20974		751	17362

Link	Description of links	Link Length (Miles)	Road Type	Number of recorded collisions (2017-2021)				Annual Average Daily Traffic Flows	Calculated collision rate (per billion vehicle miles)	UK Average collision rate (per billion vehicle miles)
				Fatal	Serious	Slight	Total			
1	A165 Carnaby to Lissett	4	RA	0	6	9	15	11090	185	188
2	A165 Lissett to Beeford	2.9	RA	0	1	8	9	11090	153	188
3	A165 Beeford to Brandesburton	4.3	RA	0	3	9	12	8647	177	188
4	B1242 Lissett to Skipsea	2.5	RO	0	2	5	7	2966	517	324
5	Beeford Road	2.5	RO	0	0	4	4	1368	641	324
6	B1242 Skipsea to End	1	RO	0	0	3	3	3127	526	324
7	Dunnington Lane	0.6	RO	0	0	0	0	140	0	324
8	Catfoss Road	1.8	RO	0	1	4	5	1011	1506	324
9	A165 Brandesburton to Leven	1.3	RA	1	2	6	9	11090	342	188
10	A1035 Leven to Catwick	1.9	RA	0	2	5	7	8603	235	188
11	Catwick Stub	0.3	RO	0	0	0	0	223	0	324
12	A1035 Leven to A165	1.1	RA	0	3	3	6	17531	170	188
13	A165 from A1035 to Skirlaugh	3.1	RA	0	5	4	9	9851	161	188
14	A165 through Skirlaugh	0.6	RA	0	1	1	2	9851	185	188
15	A165 from Skirlaugh to Coniston	2.6	RA	0	4	7	11	9851	235	188
16	A165 from Coniston to Holderness Road	2	RA	1	2	8	11	9926	304	188
17	A165/Holderness Road	0.4	UA	0	3	6	9	26512	465	695
18	A165/Holderness Road	2.4	UA	2	40	146	188	15374	2790	695
19	Mount Pleasant/A1033	0.3	UA	0	3	6	9	19232	854	695
20	A1033 Slip Road	0.6	UA	0	4	5	9	11524	713	695
21	A1033/Hedon Road	0.5	UA	0	3	8	11	40717	296	695
22	A1033/Hedon Road	3.5	UA	0	6	18	24	11524	326	695
23	A63	0.6	UA	0	3	4	7	30055	213	695
24	A63	1.5	UA	1	14	42	57	43968	474	695
25	A63	1.5	UA	3	4	30	37	52893	255	695
26	A63	6.7	RA	2	6	28	36	64712	45	188
27	A63	0.6	RA	0	2	7	9	54783	150	188
28	A15/Boothferry Road	0.9	RA	0	5	7	12	34095	214	188
29	Humberbridge	1	RA	0	2	20	22	23747	508	188
30	A164	1	RA	0	1	10	11	20769	290	188
31	A164	2.3	RA	0	4	7	11	20769	126	188
32	A164	0.9	RA	0	3	7	10	20769	293	188
33	A164	1	RA	0	0	4	4	34174	64	188
34	A164	0.9	RA	0	1	6	7	34174	125	188
35	A164	1	RA	0	7	12	19	34174	305	188
36	Dunflat Road off A164	0.5	RO	0	0	1	1	2202	498	324
37	Coppleflat Lane	1.4	RO	0	1	3	4	2543	616	324
38	A164	0.4	RA	0	1	9	10	22897	598	188
39	B1248	0.2	RO	0	0	0	0	4803	0	324
40	A1033/Thomas Clarkson Way	0.9	UA	0	2	16	18	19932	550	695
45	A1033	0.7	UA	0	3	17	20	22124	707	695
46	A1174	1.8	RA	0	2	15	17	16060	322	188
49	A1174	1.4	RA	0	2	10	12	16060	292	188
50	A164/ Woodmansey	1.2	RA	0	1	3	4	9968	183	188
51	A164/Woodmansey	0.5	RA	0	1	3	4	9968	440	188
52	A1174/A164	0.6	UA	0	0	2	2	16317	112	695
53	A1174/A164/Swinemoor Lane	0.8	UA	0	3	9	12	16317	504	695
54	A1035	1.7	RA	0	3	7	10	20188	160	188
55	A1035	1.3	RA	2	1	6	9	20188	188	188
56	A1035	1.8	RA	0	2	6	8	20188	121	188
57	A1035/A164	1.8	RA	0	2	6	8	13853	176	188
58	Stub off A1035	0.1	RO	0	0	0	0	100	0	324
59	A164/Driffeld Road	0.4	RA	0	4	1	5	11025	621	188
60	A1035	1	RA	0	1	5	6	10473	314	188
61	A1035/Dog Kennel Lane	1.1	RA	0	4	8	12	15276	391	188
62	A1174	1.3	RA	0	0	4	4	6465	261	188
63	A1079	2.3	RA	0	3	5	8	20320	94	188
64	Killingwoldgraves Lane	0.6	RO	0	0	2	2	7120	257	324
65	A1079/Bishop Burton	0.7	RA	0	0	4	4	12746	246	188
66	A1079	3.4	RA	1	1	11	13	21262	99	188
68	Coppleflat Lane	0.8	RO	0	1	0	1	7120	96	324
69	B1230	0.9	RO	0	1	1	2	4611	264	324
71	Broadgate/B1230	1.8	RO	1	0	6	7	7031	303	324
73	Eske Lane	0.5	RO	0	0	0	0	53	0	324
74	Mount Pleasant/A1033 and Stoneferry Rd/A1165	2.1	UA	0	19	39	58	25333	597	695
75	Sutton Road/A1033	0.5	UA	2	1	13	16	19932	879	695

Study time period - Hull County Council	
Start date	31/10/2017
End date	31/10/2022
Number of days	1826

Study time period - East Riding of Yorkshire Council	
Start date	01/01/2017
End date	31/12/2021
Number of days	1825

Road Type	National average collision rates per road type (per billion vehicle miles)
RA (Rural A-road)	188
UA (Urban A-road)	695
RO (Rural Other road)	324
UO (Urban Other road)	649

Source: RAS0302,
Department for Transport
(2023)

HGV Trips per section per scenario											
Zone 1 HVAC			Zone 4 HVAC			Zone 1 HVDC			Zone 4 HVDC		
Overall	Maximum	Average	Overall	Maximum	Average	Overall	Maximum	Average	Overall	Maximum	Average
Section 1	116	75	Section 1	116	75	Section 1	81	43	Section 1	81	43
Section 2	71	48	Section 2	71	48	Section 2	55	28	Section 2	55	28
Section 3	73	39	Section 3	73	39	Section 3	44	23	Section 3	44	23
Section 4	81	26	Section 4	81	26	Section 4	51	16	Section 4	51	16
Section 5	88	47	Section 5	88	47	Section 5	52	27	Section 5	52	27
Section 6	96	53	Section 6	96	53	Section 6	63	32	Section 6	63	32
Section 7	71	28	Section 7	71	28	Section 7	48	17	Section 7	48	17
Section 8	82	31	Section 8	82	31	Section 8	63	19	Section 8	63	19
Section 9	75	18	Section 9	75	18	Section 9	35	12	Section 9	35	12
Section 10	94	48	Section 10	94	48	Section 10	66	30	Section 10	66	30
Section 16A	78	17	Section 16A	78	17	Section 16A	49	11	Section 16A	49	11
Section 16B	123	37	Section 16B	96	32	Section 16B	64	21	Section 16B	61	19
Section 17 (Including 400kV)	69	25	Section 14 (Including 400kV)	96	31	Section 17 (Including 400kV)	52	16	Section 14 (Including 400kV)	56	19
Substation Zone	177	57	Substation Zone	171	56	Substation Zone	120	37	Substation Zone	122	35
Section 15 (400kV)	82	29	Section 15 (400kV)	82	29	Section 15 (400kV)	50	18	Section 15 (400kV)	50	18
Total	809	265	Total	849	265	Total	599	161	Total	588	160

LV trips per section per scenario											
Zone 1 HVAC			Zone 4 HVAC			Zone 1 HVDC			Zone 4 HVDC		
Overall	Maximum	Average	Overall	Maximum	Average	Overall	Maximum	Average	Overall	Maximum	Average
Section 1	159	111	Section 1	159	111	Section 1	135	105	Section 1	135	105
Section 2	110	76	Section 2	110	76	Section 2	110	70	Section 2	110	70
Section 3	110	68	Section 3	110	68	Section 3	110	65	Section 3	110	65
Section 4	97	51	Section 4	97	51	Section 4	97	47	Section 4	97	47
Section 5	117	77	Section 5	117	77	Section 5	110	72	Section 5	110	72
Section 6	168	128	Section 6	168	128	Section 6	154	122	Section 6	154	122
Section 7	91	55	Section 7	91	55	Section 7	91	52	Section 7	91	52
Section 8	91	56	Section 8	91	56	Section 8	91	52	Section 8	91	52
Section 9	84	44	Section 9	84	44	Section 9	82	41	Section 9	82	41
Section 10	154	117	Section 10	154	117	Section 10	154	113	Section 10	154	113
Section 16A	91	39	Section 16A	91	39	Section 16A	91	35	Section 16A	91	35
Section 16B	104	56	Section 16B	104	52	Section 16B	104	48	Section 16B	104	48
Section 17 (Including 400kV)	91	52	Section 14 (Including 400kV)	99	59	Section 17 (Including 400kV)	91	48	Section 14 (Including 400kV)	97	56
Substation Zone	231	135	Substation Zone	231	135	Substation Zone	231	135	Substation Zone	231	135
Section 15 (400kV)	91	59	Section 15 (400kV)	91	59	Section 15 (400kV)	91	55	Section 15 (400kV)	91	55
Total	1591	529	Total	1597	531	Total	1419	504	Total	1436	507



Vendor Coversheet

Project Name:	Dogger Bank South (DBS)	Package No:	WP7

Document Title:	Landfall and Onshore Cable Route Construction Metrics - Route 3 to Zone 4 HVDC Electrical Scenario
Classification:	Confidential

Vendor Doc. No:	Landfall and Onshore Cable Route Construction Metrics - Route 3 to Zone 4 HVDC Electrical Scenario	Vendor Revision:	01
Date:	29 November 2022	Pages:	88

Employers Doc. No:	004603983-01	Employer Revision:	1
Document Status:	For Review and Approval		

Registered office:
 Dogger Bank South Offshore Wind Farm
 RWE Renewables UK Ltd
 Windmill Hill Business Park
 Whitehill Way, Swindon, SN5 6PB

Client	RWE
Project	Dogger Bank South Offshore Wind Farm
Document Title	Landfall and Onshore Cable Route Construction Metrics - Route 3 to Zone 4 HVDC Electrical Scenario
RWE Ecodoc Reference	004603983-01
Version	1.0
Date	29/11/2022

Prepared By	Peter Macfarlane Principal Engineering Geologist

A handwritten signature in blue ink, appearing to read 'Peter Macfarlane'.

Reviewed By	Aidan Harber Technical Director

A handwritten signature in blue ink, appearing to read 'Aidan Harber'.

Approved By	Aidan Harber Technical Director

A handwritten signature in blue ink, appearing to read 'Aidan Harber'.

Contents	
Appendix A	Material Requirements Per Section (Onsite Deliveries / Offsite Removal)
Appendix B	Substation Foundation and Superstructure Material Requirements
Appendix C	Material Stockpile, Import and Export Requirements
Appendix D	Compound Welfare Requirements
Appendix E	Programme and Average Monthly Vehicle Movements
Appendix F	Overall Vehicle Movements
Appendix G	Indicative Construction Plant Noise Assessment
Appendix H	Images Showing Sections of Onshore Cable Route

Notes:

1. Construction Metrics based on Wardell Armstrong Shapefile - 100m Cable Corridor Rev E - Dated 08.11.2022 and substation footprint located within substation zone 4. Any changes in the routing of the Onshore Cable Corridor may result in updates of these construction metrics.
2. Tabs in red are working and only used to populate other sections of the metrics and not for reference within main construction metrics output
3. No bulking or compaction ratios have been considered within the calculation of waste soils generated and removed from site or import of materials required as conservative bulk density values. Bulking factor of 1.5 has been used to determine volumes of material stockpile onsite.
4. Sections referred to in these construction metrics are presented within Wardell Armstrong Shapefile - Sections of Onshore Cable Route Rev E - Dated 08.11.2022 with screen shots of sections presented in Appendix H.
5. Short HDD of minor obstacles has not been considered separate to trenching within construction metrics as direct trenching considered to be worst case assessment in terms of materials volumes and traffic movements associated with these crossings.
6. Construction metrics are for single project only and based on worst case requirements for HVDC electrical arrangement.
7. Substation foundation assessment is based on assumption that ground conditions are suitable for a shallow foundation solution.
8. Substation foundation assessment is based on worst case HVDC design information provided by Mott MacDonald.
9. Programme presented is indicative only and final construction programme would not be confirmed until detailed design.
10. Section 1 of onshore cable route includes metrics for Landfall Operations including landfall HDD and construction of Transition Joint Bay.
11. Within construction metrics it has been assumed that there is no reuse of haul road materials within / between sections of the onshore cable route. Some reuse of materials for HDDs has been considered within sections.
12. HDD crossings identified are those presented within Wardell Armstrong Obstacle Crossing Register 004491138-03 with obstacle Name and ID included within construction metrics to allow referencing.

[illegible]

Reference	Item and Previous Item Code, Item Description	Unit	Value	Amount/Comments
1	...	...	...	...
2	...	...	...	...
3	...	...	...	...
4	...	...	...	...
5	...	...	...	...
6	...	...	...	...
7	...	...	...	...
8	...	...	...	...
9	...	...	...	...
10	...	...	...	...
11	...	...	...	...
12	...	...	...	...
13	...	...	...	...
14	...	...	...	...
15	...	...	...	...
16	...	...	...	...
17	...	...	...	...
18	...	...	...	...
19	...	...	...	...
20	...	...	...	...
21	...	...	...	...
22	...	...	...	...
23	...	...	...	...
24	...	...	...	...
25	...	...	...	...
26	...	...	...	...
27	...	...	...	...
28	...	...	...	...
29	...	...	...	...
30	...	...	...	...
31	...	...	...	...
32	...	...	...	...
33	...	...	...	...
34	...	...	...	...
35	...	...	...	...
36	...	...	...	...
37	...	...	...	...
38	...	...	...	...
39	...	...	...	...
40	...	...	...	...
41	...	...	...	...
42	...	...	...	...
43	...	...	...	...
44	...	...	...	...
45	...	...	...	...
46	...	...	...	...
47	...	...	...	...
48	...	...	...	...
49	...	...	...	...
50	...	...	...	...
51	...	...	...	...
52	...	...	...	...
53	...	...	...	...
54	...	...	...	...
55	...	...	...	...
56	...	...	...	...
57	...	...	...	...
58	...	...	...	...
59	...	...	...	...
60	...	...	...	...
61	...	...	...	...
62	...	...	...	...
63	...	...	...	...
64	...	...	...	...
65	...	...	...	...
66	...	...	...	...
67	...	...	...	...
68	...	...	...	...
69	...	...	...	...
70	...	...	...	...
71	...	...	...	...
72	...	...	...	...
73	...	...	...	...
74	...	...	...	...
75	...	...	...	...
76	...	...	...	...
77	...	...	...	...
78	...	...	...	...
79	...	...	...	...
80	...	...	...	...
81	...	...	...	...
82	...	...	...	...
83	...	...	...	...
84	...	...	...	...
85	...	...	...	...
86	...	...	...	...
87	...	...	...	...
88	...	...	...	...
89	...	...	...	...
90	...	...	...	...
91	...	...	...	...
92	...	...	...	...
93	...	...	...	...
94	...	...	...	...
95	...	...	...	...
96	...	...	...	...
97	...	...	...	...
98	...	...	...	...
99	...	...	...	...
100	...	...	...	...
101	...	...	...	...
102	...	...	...	...
103	...	...	...	...
104	...	...	...	...
105	...	...	...	...
106	...	...	...	...
107	...	...	...	...
108	...	...	...	...
109	...	...	...	...
110	...	...	...	...
111	...	...	...	...
112	...	...	...	...
113	...	...	...	...
114	...	...	...	...
115	...	...	...	...
116	...	...	...	...
117	...	...	...	...
118	...	...	...	...
119	...	...	...	...
120	...	...	...	...
121	...	...	...	...
122	...	...	...	...
123	...	...	...	...
124	...	...	...	...
125	...	...	...	...
126	...	...	...	...
127	...	...	...	...
128	...	...	...	...
129	...	...	...	...
130	...	...	...	...
131	...	...	...	...
132	...	...	...	...
133	...	...	...	...
134	...	...	...	...
135	...	...	...	...
136	...	...	...	...
137	...	...	...	...
138	...	...	...	...
139	...	...	...	...
140	...	...	...	...
141	...	...	...	...
142	...	...	...	...
143	...	...	...	...
144	...	...	...	...
145	...	...	...	...
146	...	...	...	...
147	...	...	...	...
148	...	...	...	...
149	...	...	...	...
150	...	...	...	...
151	...	...	...	...
152	...	...	...	...
153	...	...	...	...
154	...	...	...	...
155	...	...	...	...
156	...	...	...	...
157	...	...	...	...
158	...	...	...	...
159	...	...	...	...
160	...	...	...	...
161	...	...	...	...
162	...	...	...	...
163	...	...	...	...
164	...	...	...	...
165	...	...	...	...
166	...	...	...	...
167	...	...	...	...
168	...	...	...	...
169	...	...	...	...
170	...	...	...	...
171	...	...	...	...
172	...	...	...	...
173	...	...	...	...
174	...	...	...	...
175	...	...	...	...
176	...	...	...	...
177	...	...	...	...
178	...	...	...	...
179	...	...	...	...
180	...	...	...	...
181	...	...	...	...
182	...	...	...	...
183	...	...	...	...
184	...	...	...	...
185	...	...	...	...
186	...	...	...	...
187	...	...	...	...
188	...	...	...	...
189	...	...	...	...
190	...	...	...	...
191	...	...	...	...
192	...	...	...	...
193	...	...	...	...
194	...	...	...	...
195	...	...	...	...
196	...	...	...	...
197	...	...	...	...
198	...	...	...	...
199	...	...	...	...
200	...	...	...	...
201	...	...	...	...
202	...	...	...	...
203	...	...	...	...
204	...	...	...	...
205	...	...	...	...
206	...	...	...	...
207	...	...	...	...
208	...	...	...	...
209	...	...	...	...
210	...	...	...	...
211	...	...	...	...
212	...	...	...	...
213	...	...	...	...
214	...	...	...	...
215	...	...	...	...
216	...	...	...	...
217	...	...	...	...
218	...	...	...	...
219	...	...	...	...
220	...	...	...	...
221	...	...	...	...
222	...	...	...	...
223	...	...	...	...
224	...	...	...	...
225	...	...	...	...
226	...	...	...	...
227	...	...	...	...
228	...	...	...	...
229	...	...	...	...
230	...	...	...	...
231	...	...	...	...
232	...	...	...	...
233	...	...	...	...
234	...	...	...	...
235	...	...	...	...
236	...	...	...	...
237	...	...	...	...
238	...	...	...	...
239	...	...	...	...
240	...	...	...	...
241	...	...	...	...
242	...	...	...	...
243	...	...	...	...
244	...	...	...	...
245	...	...	...	...
246	...	...	...	...
247	...	...	...	...
248	...	...	...	...
249	...	...	...	...
250	...	...	...	...
251	...	...	...	...
252	...	...	...	...
253	...	...	...	...
254	...	...	...	...
255	...	...	...	...
256	...	...	...	...
257	...	...	...	...
258	...	...	...	...
259	...	...	...	...
260	...	...	...	...
261	...	...	...	...
262	...	...	...	...
263	...	...	...	...
264	...	...	...	...
265	...	...	...	...
266	...	...	...	...
267	...	...	...	...
268	...	...	...	...
269	...	...	...	...
270	...	...	...	...
271	...	...	...	...
272	...	...	...	...
273	...	...	...	...
274	...	...	...	...
275	...	...	...	...
276	...	...	...	...
277	...	...	...	...
278	...	...	...	...
279	...	...	...	...
280	...	...	...	...
281	...	...	...	...
282	...	...	...	...
283	...	...	...	...
284	...	...	...	...
285	...	...	...	...
286	...	...	...	...
287	...	...	...	...
288	...	...	...	...
289	...	...	...	...
290	...	...	...	...
291	...	...	...	...
292	...	...	...	...
293	...	...	...	...
294	...	...	...	...
295	...	...	...	...
296	...	...	...	...
297	...	...	...	...
298	...	...	...	...
299	...	...	...	...
300	...	...	...	...
301	...	...	...	...
302	...	...	...	...
303	...	...	...	...
304	...	...	...	...
305	...	...	...	...
306	...	...	...	...
307	...	...	...	...
308	...	...	...	...
309	...	...	...	...
310	...	...	...	...
311	...	...	...	...
312	...	...	...	...
313	...	...	...	...
314	...	...	...	...
315	...	...	...	...
316	...	...	...	...
317	...	...	...	...
318	...	...	...	...
319	...	...	...	...
320	...	...	...	...
321	...	...	...	...
322	...	...	...	...
323	...	...	...	...
324	...	...	...	...
325	...	...	...	...
326	...	...	...	...
327	...	...	...	...
328	...	...	...	...
329	...	...	...	...
330	...	...	...	...
331	...	...	...	...
332	...	...	...	...
333	...	...	...	...
334	...	...	...	...
335	...	...	...	...
336	...	...	...	...
337	...	...	...	...
338	...	...	...	...
339	...	...	...	...
340	...	...	...	...
341	...	...	...	...
342	...	...	...	...
343	...	...	...	...
344	...	...	...	...
345	...	...	...	...
346	...	...	...	...
347	...	...	...	...
348	...	...	...	...
349	...	...	...	...
350	...	...	...	...
351	...	...	...	...
352	...	...	...	...
353	...	...	...	...
354	...	...	...	...
355	...	...	...	...
356	...	...	...	...
357	...	...	...	...
358	...	...	...	...
359	...	...	...	...
360	...	...	...	...
361	...	...	...	...
362	...	...	...	...
363	...	...	...	...
364	...	...	...	...
365	...	...	...	...
366	...	...	...	...
367	...	...	...	...
368	...	...	...	...
369	...	...	...	...
370	...	...	...	...
371	...	...	...	...
372	...	...	...	...
373	...	...	...	...
374	...	...	...	...

[illegible]

Category	Item	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11	Item 12	Item 13	Item 14	Item 15	Item 16	Item 17	Item 18	Item 19	Item 20	Item 21	Item 22	Item 23	Item 24	Item 25	Item 26	Item 27	Item 28	Item 29	Item 30	Item 31	Item 32	Item 33	Item 34	Item 35	Item 36	Item 37	Item 38	Item 39	Item 40	Item 41	Item 42	Item 43	Item 44	Item 45	Item 46	Item 47	Item 48	Item 49	Item 50	Item 51	Item 52	Item 53	Item 54	Item 55	Item 56	Item 57	Item 58	Item 59	Item 60	Item 61	Item 62	Item 63	Item 64	Item 65	Item 66	Item 67	Item 68	Item 69	Item 70	Item 71	Item 72	Item 73	Item 74	Item 75	Item 76	Item 77	Item 78	Item 79	Item 80	Item 81	Item 82	Item 83	Item 84	Item 85	Item 86	Item 87	Item 88	Item 89	Item 90	Item 91	Item 92	Item 93	Item 94	Item 95	Item 96	Item 97	Item 98	Item 99	Item 100	Item 101	Item 102	Item 103	Item 104	Item 105	Item 106	Item 107	Item 108	Item 109	Item 110	Item 111	Item 112	Item 113	Item 114	Item 115	Item 116	Item 117	Item 118	Item 119	Item 120	Item 121	Item 122	Item 123	Item 124	Item 125	Item 126	Item 127	Item 128	Item 129	Item 130	Item 131	Item 132	Item 133	Item 134	Item 135	Item 136	Item 137	Item 138	Item 139	Item 140	Item 141	Item 142	Item 143	Item 144	Item 145	Item 146	Item 147	Item 148	Item 149	Item 150	Item 151	Item 152	Item 153	Item 154	Item 155	Item 156	Item 157	Item 158	Item 159	Item 160	Item 161	Item 162	Item 163	Item 164	Item 165	Item 166	Item 167	Item 168	Item 169	Item 170	Item 171	Item 172	Item 173	Item 174	Item 175	Item 176	Item 177	Item 178	Item 179	Item 180	Item 181	Item 182	Item 183	Item 184	Item 185	Item 186	Item 187	Item 188	Item 189	Item 190	Item 191	Item 192	Item 193	Item 194	Item 195	Item 196	Item 197	Item 198	Item 199	Item 200	Item 201	Item 202	Item 203	Item 204	Item 205	Item 206	Item 207	Item 208	Item 209	Item 210	Item 211	Item 212	Item 213	Item 214	Item 215	Item 216	Item 217	Item 218	Item 219	Item 220	Item 221	Item 222	Item 223	Item 224	Item 225	Item 226	Item 227	Item 228	Item 229	Item 230	Item 231	Item 232	Item 233	Item 234	Item 235	Item 236	Item 237	Item 238	Item 239	Item 240	Item 241	Item 242	Item 243	Item 244	Item 245	Item 246	Item 247	Item 248	Item 249	Item 250	Item 251	Item 252	Item 253	Item 254	Item 255	Item 256	Item 257	Item 258	Item 259	Item 260	Item 261	Item 262	Item 263	Item 264	Item 265	Item 266	Item 267	Item 268	Item 269	Item 270	Item 271	Item 272	Item 273	Item 274	Item 275	Item 276	Item 277	Item 278	Item 279	Item 280	Item 281	Item 282	Item 283	Item 284	Item 285	Item 286	Item 287	Item 288	Item 289	Item 290	Item 291	Item 292	Item 293	Item 294	Item 295	Item 296	Item 297	Item 298	Item 299	Item 300	Item 301	Item 302	Item 303	Item 304	Item 305	Item 306	Item 307	Item 308	Item 309	Item 310	Item 311	Item 312	Item 313	Item 314	Item 315	Item 316	Item 317	Item 318	Item 319	Item 320	Item 321	Item 322	Item 323	Item 324	Item 325	Item 326	Item 327	Item 328	Item 329	Item 330	Item 331	Item 332	Item 333	Item 334	Item 335	Item 336	Item 337	Item 338	Item 339	Item 340	Item 341	Item 342	Item 343	Item 344	Item 345	Item 346	Item 347	Item 348	Item 349	Item 350	Item 351	Item 352	Item 353	Item 354	Item 355	Item 356	Item 357	Item 358	Item 359	Item 360	Item 361	Item 362	Item 363	Item 364	Item 365	Item 366	Item 367	Item 368	Item 369	Item 370	Item 371	Item 372	Item 373	Item 374	Item 375	Item 376	Item 377	Item 378	Item 379	Item 380	Item 381	Item 382	Item 383	Item 384	Item 385	Item 386	Item 387	Item 388	Item 389	Item 390	Item 391	Item 392	Item 393	Item 394	Item 395	Item 396	Item 397	Item 398	Item 399	Item 400	Item 401	Item 402	Item 403	Item 404	Item 405	Item 406	Item 407	Item 408	Item 409	Item 410	Item 411	Item 412	Item 413	Item 414	Item 415	Item 416	Item 417	Item 418	Item 419	Item 420	Item 421	Item 422	Item 423	Item 424	Item 425	Item 426	Item 427	Item 428	Item 429	Item 430	Item 431	Item 432	Item 433	Item 434	Item 435	Item 436	Item 437	Item 438	Item 439	Item 440	Item 441	Item 442	Item 443	Item 444	Item 445	Item 446	Item 447	Item 448	Item 449	Item 450	Item 451	Item 452	Item 453	Item 454	Item 455	Item 456	Item 457	Item 458	Item 459	Item 460	Item 461	Item 462	Item 463	Item 464	Item 465	Item 466	Item 467	Item 468	Item 469	Item 470	Item 471	Item 472	Item 473	Item 474	Item 475	Item 476	Item 477	Item 478	Item 479	Item 480	Item 481	Item 482	Item 483	Item 484	Item 485	Item 486	Item 487	Item 488	Item 489	Item 490	Item 491	Item 492	Item 493	Item 494	Item 495	Item 496	Item 497	Item 498	Item 499	Item 500	Item 501	Item 502	Item 503	Item 504	Item 505	Item 506	Item 507	Item 508	Item 509	Item 510	Item 511	Item 512	Item 513	Item 514	Item 515	Item 516	Item 517	Item 518	Item 519	Item 520	Item 521	Item 522	Item 523	Item 524	Item 525	Item 526	Item 527	Item 528	Item 529	Item 530	Item 531	Item 532	Item 533	Item 534	Item 535	Item 536	Item 537	Item 538	Item 539	Item 540	Item 541	Item 542	Item 543	Item 544	Item 545	Item 546	Item 547	Item 548	Item 549	Item 550	Item 551	Item 552	Item 553	Item 554	Item 555	Item 556	Item 557	Item 558	Item 559	Item 560	Item 561	Item 562	Item 563	Item 564	Item 565	Item 566	Item 567	Item 568	Item 569	Item 570	Item 571	Item 572	Item 573	Item 574	Item 575	Item 576	Item 577	Item 578	Item 579	Item 580	Item 581	Item 582	Item 583	Item 584	Item 585	Item 586	Item 587	Item 588	Item 589	Item 590	Item 591	Item 592	Item 593	Item 594	Item 595	Item 596	Item 597	Item 598	Item 599	Item 600	Item 601	Item 602	Item 603	Item 604	Item 605	Item 606	Item 607	Item 608	Item 609	Item 610	Item 611	Item 612	Item 613	Item 614	Item 615	Item 616	Item 617	Item 618	Item 619	Item 620	Item 621	Item 622	Item 623	Item 624	Item 625	Item 626	Item 627	Item 628	Item 629	Item 630	Item 631	Item 632	Item 633	Item 634	Item 635	Item 636	Item 637	Item 638	Item 639	Item 640	Item 641	Item 642	Item 643	Item 644	Item 645	Item 646	Item 647	Item 648	Item 649	Item 650	Item 651	Item 652	Item 653	Item 654	Item 655	Item 656	Item 657	Item 658	Item 659	Item 660	Item 661	Item 662	Item 663	Item 664	Item 665	Item 666	Item 667	Item 668	Item 669	Item 670	Item 671	Item 672	Item 673	Item 674	Item 675	Item 676	Item 677	Item 678	Item 679	Item 680	Item 681	Item 682	Item 683	Item 684	Item 685	Item 686	Item 687	Item 688	Item 689	Item 690	Item 691	Item 692	Item 693	Item 694	Item 695	Item 696	Item 697	Item 698	Item 699	Item 700	Item 701	Item 702	Item 703	Item 704	Item 705	Item 706	Item 707	Item 708	Item 709	Item 710	Item 711	Item 712	Item 713	Item 714	Item 715	Item 716	Item 717	Item 718	Item 719	Item 720	Item 721	Item 722	Item 723	Item 724	Item 725	Item 726	Item 727	Item 728	Item 729	Item 730	Item 731	Item 732	Item 733	Item 734	Item 735	Item 736	Item 737	Item 738	Item 739	Item 740	Item 741	Item 742	Item 743	Item 744	Item 745	Item 746	Item 747	Item 748	Item 749	Item 750	Item 751	Item 752	Item 753	Item 754	Item 755	Item 756	Item 757	Item 758	Item 759	Item 760	Item 761	Item 762	Item 763	Item 764	Item 765	Item 766	Item 767	Item 768	Item 769	Item 770	Item 771	Item 772	Item 773	Item 774	Item 775	Item 776	Item 777	Item 778	Item 779	Item 780	Item 781	Item 782	Item 783	Item 784	Item 785	Item 786	Item 787	Item 788	Item 789	Item 790	Item 791	Item 792	Item 793	Item 794	Item 795	Item 796	Item 797	Item 798	Item 799	Item 800	Item 801	Item 802	Item 803	Item 804	Item 805	Item 806	Item 807	Item 808	Item 809	Item 810	Item 811	Item 812	Item 813	Item 814	Item 815	Item 816	Item 817	Item 818	Item 819	Item 820	Item 821	Item 822	Item 823	Item 824	Item 825	Item 826	Item 827	Item 828	Item 829	Item 830	Item 831	Item 832	Item 833	Item 834	Item 835	Item 836	Item 837	Item 838	Item 839	Item 840	Item 841	Item 842	Item 843	Item 844	Item 845	Item 846	Item 847	Item 848	Item 849	Item 850	Item 851	Item 852	Item 853	Item 854	Item 855	Item 856	Item 857	Item 858	Item 859	Item 860	Item 861	Item 862	Item 863	Item 864	Item 865	Item 866	Item 867	Item 868	Item 869	Item 870	Item 871	Item 872	Item 873	Item 874	Item 875	Item 876	Item 877	Item 878	Item 879	Item 880	Item 881	Item 882	Item 883	Item 884	Item 885	Item 886	Item 887	Item 888	Item 889	Item 890	Item 891	Item 892	Item 893	Item 894	Item 895	Item 896	Item 897	Item 898	Item 899	Item 900	Item 901	Item 902	Item 903	Item 904	Item 905	Item 906	Item 907	Item 908	Item 909	Item 910	Item 911	Item 912	Item 913	Item 914	Item 915	Item 916	Item 917	Item 918	Item 919	Item 920	Item 921	Item 922	Item 923	Item 924	Item 925	Item 926	Item 927	Item 928	Item 929	Item 930	Item 931	Item 932	Item 933	Item 934	Item 935	Item 936	Item 937	Item 938	Item 939	Item 940	Item 941	Item 942	Item 943	Item 944	Item 945	Item 946	Item 947	Item 948	Item 949	Item 950	Item 951	Item 952	Item 953	Item 954	Item 955	Item 956	Item 957	Item 958	Item 959	Item 960	Item 961	Item 962	Item 963	Item 964	Item 965	Item 966	Item 967	Item 968	Item 969	Item 970	Item 971	Item 972	Item 973	Item 974	Item 975	Item 976	Item 977	Item 978	Item 979	Item 980	Item 981	Item 982	Item 983	Item 984	Item 985	Item 986	Item 987	Item 988	Item 989	Item 990	Item 991	Item 992	Item 993	Item 994	Item 995	Item 996	Item 997	Item 998	Item 999	Item 1000

Item	Year	Value	Comment
1. General Services (including maintenance, utilities, security, etc.)	2019	1,000,000	Estimated cost for general services for 2019.
2. Personnel (including salaries, benefits, training, etc.)	2019	2,500,000	Estimated cost for personnel for 2019.
3. Materials and Supplies (including food, clothing, equipment, etc.)	2019	1,500,000	Estimated cost for materials and supplies for 2019.
4. Transportation (including fuel, vehicle maintenance, etc.)	2019	500,000	Estimated cost for transportation for 2019.
5. Communication (including phone, internet, etc.)	2019	200,000	Estimated cost for communication for 2019.
6. Miscellaneous (including office supplies, etc.)	2019	100,000	Estimated cost for miscellaneous for 2019.
7. Total	2019	5,800,000	Total estimated cost for 2019.
8. General Services (including maintenance, utilities, security, etc.)	2020	1,100,000	Estimated cost for general services for 2020.
9. Personnel (including salaries, benefits, training, etc.)	2020	2,600,000	Estimated cost for personnel for 2020.
10. Materials and Supplies (including food, clothing, equipment, etc.)	2020	1,600,000	Estimated cost for materials and supplies for 2020.
11. Transportation (including fuel, vehicle maintenance, etc.)	2020	550,000	Estimated cost for transportation for 2020.
12. Communication (including phone, internet, etc.)	2020	220,000	Estimated cost for communication for 2020.
13. Miscellaneous (including office supplies, etc.)	2020	110,000	Estimated cost for miscellaneous for 2020.
14. Total	2020	6,180,000	Total estimated cost for 2020.
15. General Services (including maintenance, utilities, security, etc.)	2021	1,200,000	Estimated cost for general services for 2021.
16. Personnel (including salaries, benefits, training, etc.)	2021	2,700,000	Estimated cost for personnel for 2021.
17. Materials and Supplies (including food, clothing, equipment, etc.)	2021	1,700,000	Estimated cost for materials and supplies for 2021.
18. Transportation (including fuel, vehicle maintenance, etc.)	2021	600,000	Estimated cost for transportation for 2021.
19. Communication (including phone, internet, etc.)	2021	240,000	Estimated cost for communication for 2021.
20. Miscellaneous (including office supplies, etc.)	2021	120,000	Estimated cost for miscellaneous for 2021.
21. Total	2021	6,560,000	Total estimated cost for 2021.
22. General Services (including maintenance, utilities, security, etc.)	2022	1,300,000	Estimated cost for general services for 2022.
23. Personnel (including salaries, benefits, training, etc.)	2022	2,800,000	Estimated cost for personnel for 2022.
24. Materials and Supplies (including food, clothing, equipment, etc.)	2022	1,800,000	Estimated cost for materials and supplies for 2022.
25. Transportation (including fuel, vehicle maintenance, etc.)	2022	650,000	Estimated cost for transportation for 2022.
26. Communication (including phone, internet, etc.)	2022	260,000	Estimated cost for communication for 2022.
27. Miscellaneous (including office supplies, etc.)	2022	130,000	Estimated cost for miscellaneous for 2022.
28. Total	2022	6,940,000	Total estimated cost for 2022.
29. General Services (including maintenance, utilities, security, etc.)	2023	1,400,000	Estimated cost for general services for 2023.
30. Personnel (including salaries, benefits, training, etc.)	2023	2,900,000	Estimated cost for personnel for 2023.
31. Materials and Supplies (including food, clothing, equipment, etc.)	2023	1,900,000	Estimated cost for materials and supplies for 2023.
32. Transportation (including fuel, vehicle maintenance, etc.)	2023	700,000	Estimated cost for transportation for 2023.
33. Communication (including phone, internet, etc.)	2023	280,000	Estimated cost for communication for 2023.
34. Miscellaneous (including office supplies, etc.)	2023	140,000	Estimated cost for miscellaneous for 2023.
35. Total	2023	7,320,000	Total estimated cost for 2023.
36. General Services (including maintenance, utilities, security, etc.)	2024	1,500,000	Estimated cost for general services for 2024.
37. Personnel (including salaries, benefits, training, etc.)	2024	3,000,000	Estimated cost for personnel for 2024.
38. Materials and Supplies (including food, clothing, equipment, etc.)	2024	2,000,000	Estimated cost for materials and supplies for 2024.
39. Transportation (including fuel, vehicle maintenance, etc.)	2024	750,000	Estimated cost for transportation for 2024.
40. Communication (including phone, internet, etc.)	2024	300,000	Estimated cost for communication for 2024.
41. Miscellaneous (including office supplies, etc.)	2024	150,000	Estimated cost for miscellaneous for 2024.
42. Total	2024	7,700,000	Total estimated cost for 2024.
43. General Services (including maintenance, utilities, security, etc.)	2025	1,600,000	Estimated cost for general services for 2025.
44. Personnel (including salaries, benefits, training, etc.)	2025	3,100,000	Estimated cost for personnel for 2025.
45. Materials and Supplies (including food, clothing, equipment, etc.)	2025	2,100,000	Estimated cost for materials and supplies for 2025.
46. Transportation (including fuel, vehicle maintenance, etc.)	2025	800,000	Estimated cost for transportation for 2025.
47. Communication (including phone, internet, etc.)	2025	320,000	Estimated cost for communication for 2025.
48. Miscellaneous (including office supplies, etc.)	2025	160,000	Estimated cost for miscellaneous for 2025.
49. Total	2025	8,080,000	Total estimated cost for 2025.
50. General Services (including maintenance, utilities, security, etc.)	2026	1,700,000	Estimated cost for general services for 2026.
51. Personnel (including salaries, benefits, training, etc.)	2026	3,200,000	Estimated cost for personnel for 2026.
52. Materials and Supplies (including food, clothing, equipment, etc.)	2026	2,200,000	Estimated cost for materials and supplies for 2026.
53. Transportation (including fuel, vehicle maintenance, etc.)	2026	850,000	Estimated cost for transportation for 2026.
54. Communication (including phone, internet, etc.)	2026	340,000	Estimated cost for communication for 2026.
55. Miscellaneous (including office supplies, etc.)	2026	170,000	Estimated cost for miscellaneous for 2026.
56. Total	2026	8,460,000	Total estimated cost for 2026.
57. General Services (including maintenance, utilities, security, etc.)	2027	1,800,000	Estimated cost for general services for 2027.
58. Personnel (including salaries, benefits, training, etc.)	2027	3,300,000	Estimated cost for personnel for 2027.
59. Materials and Supplies (including food, clothing, equipment, etc.)	2027	2,300,000	Estimated cost for materials and supplies for 2027.
60. Transportation (including fuel, vehicle maintenance, etc.)	2027	900,000	Estimated cost for transportation for 2027.
61. Communication (including phone, internet, etc.)	2027	360,000	Estimated cost for communication for 2027.
62. Miscellaneous (including office supplies, etc.)	2027	180,000	Estimated cost for miscellaneous for 2027.
63. Total	2027	8,840,000	Total estimated cost for 2027.
64. General Services (including maintenance, utilities, security, etc.)	2028	1,900,000	Estimated cost for general services for 2028.
65. Personnel (including salaries, benefits, training, etc.)	2028	3,400,000	Estimated cost for personnel for 2028.
66. Materials and Supplies (including food, clothing, equipment, etc.)	2028	2,400,000	Estimated cost for materials and supplies for 2028.
67. Transportation (including fuel, vehicle maintenance, etc.)	2028	950,000	Estimated cost for transportation for 2028.

Building	Height (m)	Length (m)	Width (m)	Area (m²)	Number of
Spare Parts Building	15.00	30.00	35.00	1050.00	1.00
Service Building	15.00	40.00	35.00	1400.00	1.00
Upper Bridge Valve Hall	24.00	55.00	45.00	2475.00	1.00
Lower Bridge Valve Hall	24.00	55.00	45.00	2475.00	1.00
DBS Valve Hall	24.00	45.00	20.00	900.00	1.00
+VE DC Hall	22.00	40.00	20.00	800.00	1.00
-VE DC Hall	22.00	40.00	20.00	800.00	1.00

Other Structures	Height (m)	Length (m)	Width (m)	Area (m²)	Number of	Loading Weight (t)
Main Transformer (fully assembled)	11.00	16.00	6.00	96.00	7.00	400.00
External Fire Barriers for Transformers	12.00	25.00	0.50	12.50	7.00	N/A
Cooler Area Outdoor	TBC	30.00	20.00	600.00	1.00	TBC
AC Reactor	TBC	130.00	45.00	5850.00	1.00	TBC
Grounding Circuit	TBC	40.00	20.00	800.00	1.00	TBC
Delta AC Bus Area	TBC	130.00	45.00	5850.00	1.00	TBC
AC Filter Area, PIR Area and PLC Area	TBC	130.00	35.00	4550.00	1.00	TBC
DBS Resistor	TBC	20.00	10.00	200.00	1.00	TBC
AHU AREA (Small)	TBC	5.00	5.00	25.00	2.00	TBC
AHU AREA (Medium)	TBC	10.00	10.00	100.00	2.00	TBC
AHU AREA (Large)	TBC	20.00	10.00	200.00	2.00	TBC
DC Cable Test and Trench And Test Area	TBC	130.00	10.00	1300.00	1.00	TBC
Water Tank	6.00	6.00	6.00	36.00	1.00	5.00
Diesel Generator	2.60	6.10	2.50	15.25	1.00	6.60

Indicative Size Based on Drawing, TBC

Indicative Size Based on Drawing, TBC

Indicative Size Based on Drawing, TBC

Indicative Size Based on Drawing, TBC

Assumed weight, TBC

Based on HVAC Layout

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
Spare Parts Building	pad foundations	5x5x1m deep RC concrete on a 35x5m grid plus ridge column at both gables		400		2,400	960	Concrete	1.00	400.00
	concrete slab within building	200mm thick concrete slab on 150mm thick type 1 sub base	480	210	1,050	2,400	504	Concrete	1.00	210.00
	extra concrete plinths for equipment in building	TBC	278	189	1,050	1,850	350	Stone	1.00	349.65
	perimeter ground beam	450mm deep x 600mm wide, 180m long		35		2,400	84	Concrete	1.00	35.10
	steel frame	80 kg/m2 includes secondary steel (purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 30m span and 5m bay centres , 15m ridge height.	80		1,050		84	Steel	1.00	84.00
	cladding	composite cladding panels 150mm thick -	10		1,950		20	Cladding	1.00	19.50

Ground bearing slab

20% increase for sub base due to variable ground

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
Service Building	RC Pad foundations	4.5x4.5x1m deep RC concrete on a 35x5m grid plus ridge column at both gables		405		2,400	972	Concrete	1.00	405.00
	Concrete ground bearing slab within building	200mm thick concrete slab on 150mm thick type 1 sub base	480	280	1,400	2,400	672	Concrete	1.00	280.00
	extra concrete plinths for equipment in building	TBC	278	252	1,400	1,850	466	Stone	1.00	466.20
	Perimeter ground beam	450mm deep x 600mm wide, 150m long		41		2,400	97	Concrete	1.00	40.50
	Steel frame	134 kg/m2 includes secondary steel (purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 35m span and 5m bay centres , 15m ridge height.	80		1,400		112	Steel	1.00	112.00
	Cladding	composite cladding panels 150mm thick -	10		2,250		23	Cladding	1.00	22.50

Ground bearing slab

20% increase for sub base due to variable ground

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
Upper Bridge Valve Hall	RC Pad foundations	5x5x1m deep RC concrete on a 45x5m grid plus ridge column at both gables		550		2,400	1,320	Concrete	1.00	550.00
	Concrete ground bearing slab within building	200mm thick concrete slab	480	495	2,475	2,400	1,188	Concrete	1.00	495.00
		on 150mm thick type 1 sub base	278	446	2,475	1,850	824	Stone	1.00	824.18
	extra concrete plinths for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 200m long		54		2,400	130	Concrete	1.00	54.00
	Steel frame	80 kg/m2 includes secondary steel, purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 45m span and 5m bay centres, 24m ridge height.	80		2,475		198	Steel	1.00	198.00
	Cladding	composite cladding panels 150mm thick -	10		4,800		48	Cladding	1.00	48.00

Ground bearing slab
20% increase for sub base due to variable ground

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
Lower Bridge Valve Hall	RC Pad foundations	5x5x1m deep RC concrete on a 45x5m grid plus ridge column at both gables		550		2,400	1,320	Concrete	1.00	550.00
	Concrete ground bearing slab within building	200mm thick concrete slab	480	495	2,475	2,400	1,188	Concrete	1.00	495.00
		on 150mm thick type 1 sub base	278	446	2,475	1,850	824	Stone	1.00	824.18
	extra concrete plinths for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 200m long		54		2,400	130	Concrete	1.00	54.00
	Steel frame	80 kg/m2 includes secondary steel, purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 45m span and 5m bay centres, 24m ridge height.	80		2,475		198	Steel	1.00	198.00
	Cladding	composite cladding panels 150mm thick -	10		4,800		48	Cladding	1.00	48.00

Ground bearing slab
20% increase for sub base due to variable ground

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
+VE DC Hall	RC Pad foundations	3x3x0.75m deep RC concrete on a 20x5m grid plus ridge column at both gables		81		2,400	194	Concrete	1.00	81.00
	Concrete ground bearing slab within building	200mm thick concrete slab	480	160	800	2,400	384	Concrete	1.00	160.00
		on 150mm thick type 1 sub base	278	144	800	1,850	266	Stone	1.00	266.40
	extra concrete plinths for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 120m long		32		2,400	78	Concrete	1.00	32.40
	Steel frame	80 kg/m2 includes secondary steel, purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 20m span and 5m bay centres, 22m ridge height.	80		800		64	Steel	1.00	64.00
	Cladding	composite cladding panels 150mm thick -	10		2,640		26	Cladding	1.00	26.40

Ground bearing slab
20% increase for sub base due to variable ground

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
-VE DC Hall	RC Pad foundations	3x3x0.75m deep RC concrete on a 20x5m grid plus ridge column at both gables		81		2,400	194	Concrete	1.00	81.00
	Concrete ground bearing slab within building	200mm thick concrete slab	480	160	800	2,400	384	Concrete	1.00	160.00
		on 150mm thick type 1 sub base	278	144	800	1,850	266	Stone	1.00	266.40
	extra concrete plinths for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 120m long		32		2,400	78	Concrete	1.00	32.40
	Steel frame	80 kg/m2 includes secondary steel, purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 20m span and 5m bay centres, 22m ridge height.	80		800		64	Steel	1.00	64.00
	Cladding	composite cladding panels 150mm thick -	10		2,640		26	Cladding	1.00	26.40

Ground bearing slab
20% increase for sub base due to variable ground

Annex 6

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
DBS Valve Hall	RC Pad foundations	3x3x0.75m deep RC concrete on a 20x5m grid plus ridge column at both gables		149		2,400	356	Concrete	1.00	148.50
	Concrete ground bearing slab within building	200mm thick concrete slab	480	180	900	2,400	432	Concrete	1.00	180.00
		on 150mm thick type 1 sub base	278	162	900	1,850	300	Stone	1.00	299.70
	extra concrete plinths for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 130m long		35		2,400	84	Concrete	1.00	35.10
	Steel frame	80 kg/m2 includes secondary steel, purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 20m span and 5m bay centres, 20m ridge height.	80		900		72	Steel	1.00	72.00
	Cladding	composite cladding panels 150mm thick -	10		3,120		31	Cladding	1.00	31.20

Ground bearing slab
20% increase for sub base due to variable ground

Structure	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
External Fire Barriers for Transformers	7 No. External Fire Barriers (Transformers)	12m high x 25m long x 500mm thick fire barriers		150		2,400	360	Concrete	7.00	1050.00

Structure/Bases	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
Main Transformer	RC Base/Foundation	1no. 16m x 6m x 450mm thick	1,080	43.20	96.00	2,400	104	Concrete	7	302.40
	Sub base	150mm thick type 1 sub base	278	17.28	96.00	1,850	32	Stone	7	223.78
Cooler Area Outdoor	RC Base/Foundation	1no. 30m x 20m x 300mm thick	720	180.00	600.00	2,400	432	Concrete	1	180.00
	Sub base	150mm thick type 1 sub base	278	108.00	600.00	1,850	200	Stone	1	199.80
AC Reactor	RC Base/Foundation	1no. 130m x 45m x 300mm thick	720	1,755.00	5,850.00	2,400	4,212	Concrete	1	1755.00
	Sub base	150mm thick type 1 sub base	278	1,053.00	5,850.00	1,850	1,948	Stone	1	1948.05
Grounding Circuit	RC Base/Foundation	1no. 40m x 20m x 300mm thick	720	240.00	800.00	2,400	576	Concrete	1	240.00
	Sub base	150mm thick type 1 sub base	278	144.00	800.00	1,850	266	Stone	1	266.40
Delta AC Bus Area	RC Base/Foundation	1no. 130m x 45m x 300mm thick	720	1,755.00	5,850.00	2,400	4,212	Concrete	1	1755.00
	Sub base	150mm thick type 1 sub base	278	1,053.00	5,850.00	1,850	1,948	Stone	1	1948.05
AC Filter Area, PIR Area and PLC Area	RC Base/Foundation	1no. 130m x 35m x 300mm thick	720	1,365.00	4,550.00	2,400	3,276	Concrete	1	1365.00
	Sub base	150mm thick type 1 sub base	278	819.00	4,550.00	1,850	1,515	Stone	1	1515.15
DBS Resistor	RC Base/Foundation	1no. 20m x 10m x 300mm thick	720	60.00	200.00	2,400	144	Concrete	1	60.00
	Sub base	150mm thick type 1 sub base	278	36.00	200.00	1,850	67	Stone	1	66.60
AHU AREA (Small)	RC Base/Foundation	1no. 5m x 5m x 300mm thick	720	7.50	25.00	2,400	18	Concrete	2	15.00
	Sub base	150mm thick type 1 sub base	278	4.50	25.00	1,850	8	Stone	2	16.65
AHU AREA (Medium)	RC Base/Foundation	1no. 10m x 10m x 300mm thick	720	30.00	100.00	2,400	72	Concrete	2	60.00
	Sub base	150mm thick type 1 sub base	278	18.00	100.00	1,850	33	Stone	2	66.60
AHU AREA (Large)	RC Base/Foundation	1no. 10m x 10m x 300mm thick	720	60.00	200.00	2,400	144	Concrete	2	120.00
	Sub base	150mm thick type 1 sub base	278	36.00	200.00	1,850	67	Stone	2	133.20
DC Cable Test and Trench And Test Area	RC Base/Foundation	1no. 130m x 10m x 300mm thick	720	390.00	1,300.00	2,400	936	Concrete	1	390.00
	Sub base	150mm thick type 1 sub base	278	234.00	1,300.00	1,850	433	Stone	1	432.90
Water Tank	RC Base/Foundation	1no. 10m x 10m x 300mm thick	720	10.80	36.00	2,400	26	Concrete	1	10.80
	Sub base	150mm thick type 1 sub base	278	6.48	36.00	1,850	12	Stone	1	11.99
Diesel Generator	RC Base/Foundation	1no. 10m x 10m x 300mm thick	720	4.58	15.25	2,400	11	Concrete	1	4.58
	Sub base	150mm thick type 1 sub base	278	2.75	15.25	1,850	5	Stone	1	5.08

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

Annex 6

Parameter (Materials / Electrical Equipment)	Units	Value	Equipment Weight (tonnes)	Total Equipment Weight (tonnes)	Total Vehicle Movements	
Concrete	m³	11,787	-	-	1965	Total concrete requirement for foundations
Steel Reinforcement (assuming 0.065 t/m3 Concrete)	Tonnes	766	-	-	39	
Type 1 Stone	Tonnes	10,131	-	-	507	Total Type 1 Requirement for foundations
Volume of Soil to be removed from site (foundation excavation)	m³	17,263	-	-	-	
Mass of soil to be removed from site (foundation excavation)	Tonnes	34525.9	-	-	1727	Soil excavated for foundation and sub-base placement. Assumed building slab above ground level.
Steel Frame	Tonnes	792	-	-	64	Total steel work requirement for proposed substation buildings
Cladding	Tonnes	222	-	-	18	Total external cladding requirement for proposed substation buildings
Main Transformer (fully assembled)	No	7	400	2800	7	Abnormal Load Delivery Of Single Transformer
Cooler Area Outdoor	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
AC Reactor	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
Grounding Circuit	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
Delta AC Bus Area	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
AC Filter Area, PIR Area and PLC Area	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
DBS Resistor	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
AHU AREA (Small)	No	2.00	Unknown	Unknown	5	Assumed vehicle movements (TBC)
AHU AREA (Medium)	No	2.00	Unknown	Unknown	10	Assumed vehicle movements (TBC)
AHU AREA (Large)	No	2.00	Unknown	Unknown	15	Assumed vehicle movements (TBC)
DC Cable Test and Trench And Test Area	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
Water Tank	No	1.00	Unknown	Unknown	1	Assumed vehicle movements (TBC)
Diesel Generator	No	1.00	Unknown	Unknown	1	Assumed vehicle movements (TBC)
Miscellaneous Allowance For Other M&E Equipment	No	1	-	-	150	Assumed vehicle movements (TBC)
TOTAL Vehicle Movements					4719	

Notes / Assumptions:

- Earthworks, hardstanding and road have not been included in this part of the assessment. Considered in materials vehicle movements.
- Vehicle movements for removal of arisings is based on excavation of volume of foundations/ slab/ sub-base.
- General site traffic and construction equipment considered in substation programme and daily movements
- Vehicle movements for delivery of electrical equipment are shown in substation programme and daily movement
- Foundations have been based on a ground bearing slab - SI to confirm GBP. If suspended slab to be used foundation size and number would increase
- Full design of foundations / bases (based on loadings / SI) to be undertaken to confirm sizes.
- Transformer housing has not been included for (assume part of equipment)
- No internal wall or additional floors have been included in the buildings

Parameter	Units	Value	Source/Comments
Volume of topsoil excavated per transition bay location (includes transition bay link box)	m ³	241	WA Calculation based on drawing ED13554-GE-1013 & 1014 (Ecodoc Reference 004437669-01 & 004437670-01). Extents of excavation multiplied by Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab) multiplied by bulking factor of 1.5.
Volume of sub-soil Excavated per transition bay location (Includes transition bay link box)	m ³	538	WA Calculation based on drawing ED13554-GE-1013 & 1014 (Ecodoc Reference 004437669-01 & 004437670-01) multiplied by bulking factor of 1.5. Total volume excavated is 776m ³ . Volume of sub-soil is total volume - topsoil volume
Volume of topsoil excavated per jointing bay location	m ³	150	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01) multiplied by bulking factor of 1.5. Extents of excavation multiplied by Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab)
Volume of sub-soil Excavated per jointing bay location	m ³	252	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01) multiplied by bulking factor of 1.5. Total volume excavated is 391m ³ . Volume of sub-soil is total volume - topsoil volume
Volume of topsoil excavated per jointing bay link box location	m ³	31	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01). Extents of excavation multiplied by Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab) multiplied by bulking factor of 1.5.
Volume of sub-soil Excavated per jointing bay link box location	m ³	37	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01) multiplied by bulking factor of 1.5. Total volume excavated is 67m ³ . Volume of sub-soil is total volume - topsoil volume
Volume of topsoil excavated per m of haul road	m ³	6.0	Haul road easement width (Drawing ED13554-GE-1021, Ecodoc Reference 004437673-01) x Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab) multiplied by bulking factor of 1.5.
Volume of sub-soil excavated per m of haul road for drainage ditches (accounts for drainage ditches on both sides of road)	m ³	1.13	Maximum volume based on drawing ED13554-GE-1023 (Ecodoc Reference 004437673-01) multiplied by bulking factor of 1.5.
Volume of topsoil excavated per m of trenching (excluding haul road)	m ³	9.2	[Cable route are of topsoil disturbed 25.35m] - haul road (10m)] *depth of topsoil (0.4m) multiplied by bulking factor of 1.5. RWE Drawing REN/CIV/007/AP2 (Ecodoc Reference 004390501-01)
Volume of sub-soil excavated per m of trenching	m ³	3.3	Maximum Calculated for HVDC Arrangement from RWE Drawing RED/CIV/007/AP2 (Ecodoc Reference 004390501-01) multiplied by bulking factor of 1.5.
Volume of topsoil excavated per large TCC	m ³	6000	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per satellite TCC	m ³	3375	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per landfall compound	m ³	4950	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per Long / Moderate HDD entry pit compound	m ³	1872	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per Long / Moderate HDD exit pit compound	m ³	936	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per minor HDD entry pit compound	m ³	1080	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per minor HDD exit pit compound	m ³	648	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per access	m ³	64	Area of access x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per m Auxiliary Supply Trench	m ³	0.27	Width of trench x depth of topsoil x bulking factor of 1.5
Volume of subsoil excavated per m of Auxiliary Supply Trench	m ³	0.98	Width of trench x (depth of trench - depth of topsoil) x bulking factor of 1.5
Area of topsoil excavated per substation TCC	m ³	18007	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of Topsoil excavated per m of Substation Drainage Trench	m ³	0.84	Width of trench x depth of topsoil x bulking factor of 1.5
Volume of sub-soil excavated per m of Substation Drainage Trench	m ³	3.36	Width of trench x (depth of trench - depth of topsoil) x bulking factor of 1.5

Total Stockpiled Volumes	Number / Length	Volume (m3)
Transition Bay Locations (topsoil volume)	2	482.9
Transition Bay Locations (sub-soil volume)	2	1076.1
Jointing Bay Locations (topsoil volume)	112	20258.4
Jointing Bay Locations (sub-soil volume)	112	32362.8
Haul road Topsoil Strip	38910	233460.0
Drainage Ditch Sub-soil Excavation	38910	43773.8
Cable route Topsoil Strip	32300	297483
Trench Sub-Soil Excavation	32300	105499.9
Topsoil excavated from Large TCC	2	12000.0
Topsoil excavated from Satellite TCC	14	47250.0
Topsoil excavated from landfall compound	1	4950
Topsoil excavated from Long / Moderate HDD entry pit compound	8	14976
Topsoil excavated from Long / Moderate HDD exit pit compound	8	7488
Topsoil excavated from Minor HDD entry pit compound	14	15120
Topsoil excavated from Minor HDD exit pit compound	15	9720
Topsoil excavated from accesses	16	1026.24
Topsoil excavated from Auxiliary Supply Trench	700	189
Subsoil excavated from Auxiliary Supply Trench	700	685.125
Topsoil excavated from substation TCC	1	18007.2
Topsoil excavated from Substation Drainage Trench	624	524.1012
Subsoil excavated from Substation Drainage Trench	624	2096.4048

Materials Stockpile Totals	Units	Value
Topsoil	m ³	682934.8
Sub-soil	m ³	185494.1

Imported Materials / Permanent Equipment	Units	Maximum Value	Value Assuming Shared Stone etc between HDDs in same section of cable corridor
Mot Type 1	Tonnes	332,257	306,228
Asphalt	Tonnes	27,216	27,216
HB2 External Radii Kerbs	No	464	464
HB2 Straight Kerbs	No	2,103	2,103
Concrete	m³	21,526	21,526
Crusher Run Stone	Tonnes	0	0
20/40mm Drainage Stone	Tonnes	42,023	42,023
Length of perforated pipe	m	77,820	77,820
Geogrid	m²	475,689	435,489
Geotextile	m²	475,689	435,489
Stock Proof Fencing (including required posts)	m	78,810	78,810
Heras fencing panels	No	4,744	3,617
Length of Onshore Export Cable	m	73,300	73,300
Length of Onshore Fibre Cable	m	74,000	74,000
Length of Onshore Earth Cable	m	36,650	36,650
Trench Tiles / cable protective covers	No	265,077	265,077
Cement Bound Sand	Tonnes	108,597.0	108,597
Selected Sand	Tonnes	2,128.9	2,129
Length of export cable duct in trench	m	64,600	64,600
Length of 90mm duct / pipe in trench	m	97,600	97,600
Length of ducting for install in onshore HDD bores for export cables	m	9,100	9,100
Length of ducting for install in onshore HDD bores for FO and DTS	m	13,650	13,650
Bentonite	kg	1,000,350	1,000,350
Water	m³	24,966.0	24,966
Steel Reinforcement	Tonnes	1,387.5	1,388
Link box lids	No	116.0	116
Cable Joint Kits	No	174.0	174
Transition bay pre-cast concrete slabs	No	76	76
Length of 120mm duct	m	700	700
Length of 11kV Auxiliary Cable	m	700	700
Number of CG3 cable marker blocks	-	369	369
Mass of Cement	Tonnes	1.86	1.86
Mass of Lime	Tonnes	0.30	0.30
Mass of Sand	Tonnes	4.72	4.72
Length of surface water drainage pipework	m	624	624
Drainage Manholes	No	4	4
Drainage Headwalls	No	3	3
Import of subsoil for substation earthworks	Tonnes	25,069	25,069
Steel Work For Substation Structures	Tonnes	792	792
Cladding for Substation Structures	Tonnes	222	222
Main Transformer (fully assembled)	No	7	7
Cooler Area Outdoor	No	1	1
AC Reactor	No	1	1
Grounding Circuit	No	1	1
Delta AC Bus Area	No	1	1
AC Filter Area, PIR Area and PLC Area	No	1	1
DBS Resistor	No	1	1
AHU AREA (Small)	No	2	2
AHU AREA (Medium)	No	2	2
AHU AREA (Large)	No	2	2
DC Cable Test and Trench And Test Area	No	1	1
Water Tank	No	1	1
Diesel Generator	No	1	1

Exported Materials	Units	Value	Value Assuming Shared Stone etc between HDDs in same section of cable corridor
Mot Type 1	Tonnes	300,463	284,565
Asphalt	Tonnes	16,028	16,028
HB2 External Radii Kerbs	No	464	464
HB2 Straight Kerbs	No	0	0
Concrete	m³	28	28
Crusher Run Stone	Tonnes	0	0
20/40mm Drainage Stone	Tonnes	42,023	42,023
Length of perforated pipe	m	77,820	77,820
Geogrid	m²	475,689	435,489
Geotextile	m²	475,689	435,489
Heras fencing panels	No	3,899	2,772
Native Soil	Tonnes	185,685	185,685
Topsoil	Tonnes	33,990	33,990
Drill Fluid Removal	m³	11,970	11,970
Stock Proof Fencing (including required posts)	m	78,810	78,810
Mass of Cement	Tonnes	0.29	0.29
Mass of Lime	Tonnes	0.05	0.05
Mass of Sand	Tonnes	0.73	0.73

General Data	Value	Source/Comments
Number of Welfare / Container Units Per Delivery	1	Worst Case
Number of plant per delivery	1	Worst Case
Frequency of Skip Emptying (weeks)	2	Assumed

Main TCC Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	4	ED13554-GE-1019 (Ecocode Ref - 004437671-01)
Canteen Unit	4	ED13554-GE-1019 (Ecocode Ref - 004437671-01)
Tool Storage Unit	6	ED13554-GE-1019 (Ecocode Ref - 004437671-01)
Workshop Unit	1	ED13554-GE-1019 (Ecocode Ref - 004437671-01)
Mobile Toilet Unit	2	ED13554-GE-1019 (Ecocode Ref - 004437671-01)
Washing / Changing Unit	1	ED13554-GE-1019 (Ecocode Ref - 004437671-01)
First Aid Unit		
Drying Room Unit	1	ED13554-GE-1019 (Ecocode Ref - 004437671-01)
Freshwater Storage Container (2 per delivery)	2	ED13554-GE-1019 (Ecocode Ref - 004437671-01)
Foul Water Storage Container (2 per delivery)	2	ED13554-GE-1019 (Ecocode Ref - 004437671-01)
Bunded Fuel Tank (1 per delivery)	1	ED13554-GE-1019 (Ecocode Ref - 004437671-01)
Generator (2 per delivery)	2	ED13554-GE-1019 (Ecocode Ref - 004437671-01)
General Waste Skip (1 per delivery)	6	ED13554-GE-1019 (Ecocode Ref - 004437671-01)
Wheel Wash (assume 3 deliveries to mobilise)		
Weigh bridge (assume 3 deliveries to mobilise)		
Telehandler	2	Assumed Required
Road Sweeper	1	Assumed Required
Number of HGV Movements	32	

Satellite TCC Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	1	ED13554-GE-1020 (Ecocode Ref - 004437672-01)
Canteen Unit	1	ED13554-GE-1020 (Ecocode Ref - 004437672-01)
Tool Storage Unit	1	ED13554-GE-1020 (Ecocode Ref - 004437672-01)
Workshop Unit		
Mobile Toilet Unit	1	ED13554-GE-1020 (Ecocode Ref - 004437672-01)
Washing / Changing Unit		
First Aid Unit		
Drying Room Unit	1	ED13554-GE-1020 (Ecocode Ref - 004437672-01)
Freshwater Storage Container (2 per delivery)	1	ED13554-GE-1020 (Ecocode Ref - 004437672-01)
Foul Water Storage Container (2 per delivery)	1	ED13554-GE-1020 (Ecocode Ref - 004437672-01)
Bunded Fuel Tank (1 per delivery)	1	ED13554-GE-1020 (Ecocode Ref - 004437672-01)
Generator (2 per delivery)	1	ED13554-GE-1020 (Ecocode Ref - 004437672-01)
General Waste Skip (1 per delivery)	3	ED13554-GE-1020 (Ecocode Ref - 004437672-01)
Wheel Wash (assume 3 deliveries to mobilise)		
Weigh bridge (assume 3 deliveries to mobilise)		
Telehandler	1	Assumed Required
Road Sweeper	1	Assumed Required
Number of HGV Movements	13	

Landfill HDD Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	1	Assumed - Compound to be designed
Canteen Unit / Lunch Room	1	Assumed - Compound to be designed
Welfare Unit	1	Assumed - Compound to be designed
Tool Storage Unit	2	Assumed - Compound to be designed
Workshop Unit	1	Assumed - Compound to be designed
Generator (2 per delivery)	1	Assumed - Compound to be designed
Freshwater Storage Container (2 per delivery)	2	Assumed - Compound to be designed
Foul Water Storage Container (2 per delivery)	1	Assumed - Compound to be designed
General Waste Skip (1 per delivery)	1	Assumed - Compound to be designed
Bunded Fuel Tank	1	Assumed - Compound to be designed
Bentonite Storage Container	2	Assumed - Compound to be designed
Mixing Tank	2	Assumed - Compound to be designed
Cutting Container	2	Assumed - Compound to be designed
Drill Pipe Rack	3	Assumed - Compound to be designed
Mud Pump	2	Assumed - Compound to be designed
Power Pack	1	Assumed - Compound to be designed
Driver's Cabin	1	Assumed - Compound to be designed
HDD Rig	1	Assumed - Compound to be designed
Telehandler / Excavator	1	Assumed - Compound to be designed
Number of HGV Movements	25	

Long / Moderate Onshore HDD Entry Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	1	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Canteen Unit / Lunch Room	1	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Welfare Unit	1	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Toot Storage / General Storage	3	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Workshop Unit	1	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Generator (2 per delivery)	1	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Freshwater Storage Container (2 per delivery)	1	Assumed Required
Foul Water Storage Container (2 per delivery)	1	Assumed Required
General Waste Skip (1 per delivery)	1	Assumed Required
Bundled Fuel Tank	1	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Bentonite Storage	2	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Mixing Tank	2	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Cuttings Container	2	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Drill Pipe Rack	3	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Mud Pump	1	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Power Pack	1	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Driller's Cabin	1	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
HDD Rig	1	ED13554-GE-1027 (Ecocode Ref - 004491142-01)
Telehandler / Excavator	1	Assumed Required
Number of HGV Movements	25	

Long / Moderate Onshore HDD Exit Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office / Welfare Unit	1	Assumed Required
General Waste Skip (1 per delivery)	1	Assumed Required
Generator (2 per delivery)	1	Assumed Required
Toot Storage Unit	1	Assumed Required
Drill Pipe Rack	2	Assumed Required
Number of HGV Movements	5	

Minor Onshore HDD Entry Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office / Welfare Unit	1	ED13554-GE-1026 (Ecocode Ref - 004491141-01)
Canteen Unit / Lunch Room	1	ED13554-GE-1026 (Ecocode Ref - 004491141-01)
Welfare Unit		
Toot Storage / General Storage	2	ED13554-GE-1026 (Ecocode Ref - 004491141-01)
Workshop Unit	1	ED13554-GE-1026 (Ecocode Ref - 004491141-01)
Generator (2 per delivery)	1	ED13554-GE-1026 (Ecocode Ref - 004491141-01)
Freshwater Storage Container (2 per delivery)	1	Assumed Required
Foul Water Storage Container (2 per delivery)	1	Assumed Required
General Waste Skip (1 per delivery)	1	Assumed Required
Bundled Fuel Tank	1	ED13554-GE-1026 (Ecocode Ref - 004491141-01)
Bentonite Storage Container	1	ED13554-GE-1026 (Ecocode Ref - 004491141-01)
Fluid and Recycling Tanks	1	ED13554-GE-1026 (Ecocode Ref - 004491141-01)
Cuttings Container	1	ED13554-GE-1026 (Ecocode Ref - 004491141-01)
Spare Roads	3	ED13554-GE-1026 (Ecocode Ref - 004491141-01)
Mud Pump		
Power Pack		
Driller's Cabin		
Mini HDD Rig	1	ED13554-GE-1026 (Ecocode Ref - 004491141-01)
Telehandler / Excavator	1	Assumed Required
Number of HGV Movements	17	

Minor Onshore HDD Exit Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office / Welfare Unit		
General Waste Skip (1 per delivery)		
Generator (2 per delivery)	1	Assumed Required
Toot Storage Unit	1	Assumed Required
Drill Pipe Rack		
Number of HGV Movements	2	

Substation TCC Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	10	Assumed - Compound to be designed
Canteen Unit	8	Assumed - Compound to be designed
Toot Storage Unit	12	Assumed - Compound to be designed
Workshop Unit	2	Assumed - Compound to be designed
Mobile Toilet Unit	6	Assumed - Compound to be designed
Washing / Changing Unit	3	Assumed - Compound to be designed
First Aid Unit	1	Assumed - Compound to be designed
Drying Room Unit	3	Assumed - Compound to be designed
Freshwater Storage Container (2 per delivery)	6	Assumed - Compound to be designed
Foul Water Storage Container (2 per delivery)	6	Assumed - Compound to be designed
Bundled Fuel Tank (1 per delivery)	2	Assumed - Compound to be designed
Generator (2 per delivery)	6	Assumed - Compound to be designed
General Waste Skip (1 per delivery)	8	Assumed - Compound to be designed
Wheel Wash (assume 3 deliveries to mobilise)	1	Assumed - Compound to be designed
Weigh bridge (assume 3 deliveries to mobilise)	1	Assumed - Compound to be designed
Telehandler	4	Assumed - Compound to be designed
Road Sweeper	1	Assumed - Compound to be designed
Number of HGV Movements	75	

Section	Section 1	Section 2	Section 3	Section 4	Section 5
Compound Welfare and Operation Plant Requirements	457	143	160	236	259
Grand total deliveries	457	143	160	236	259
Grand total (two way movements)	914	286	320	472	518

Compound Welfare and Operation Plant Requirements	Units	Section 1	Section 2	Section 3	Section 4	Section 5
Number of Main TCC	-	0	0	0	0	0
Number of Minor TCC	-	2	1	1	1	1
Number of Substation TCC	-	0	0	0	0	0
Duration of TCC Site	Weeks	78	78	78	85	78
Number of Skip Movements	-	234	117	117	89	117
Number of Landfill Compounds	-	1	0	0	0	0
Duration of Landfill Compound Usage	Weeks	70	0	0	0	0
Number of Skip Movements	-	35	0	0	0	0
Number of Long / Moderate HDD Drilling Compounds	-	0	0	0	2	1
Combined Duration of Onshore HDD Drilling Compound Usage	Weeks	0	0	0	22	13
Number of Skip Movements	-	0	0	0	11	7
Number of Long / Moderate HDD Exit Pit Compounds	-	0	0	1	0	1
Combined Duration of Onshore HD Exit Compound Usage	Weeks	0	0	13	0	9
Number of Skip Movements	-	0	0	7	0	5
Number of Minor HDD Drilling Compounds	-	2	0	0	0	1
Combined Duration of Onshore HDD Drilling Compound Usage	Weeks	5	0	0	0	5
Number of Skip Movements	-	5	0	0	0	3
Number of Minor HDD Exit Pit Compounds	-	2	0	0	0	1
Combined Duration of Onshore HD Exit Compound Usage	Weeks	5	0	0	0	5
Number of Skip Movements	-	5	0	0	0	3
Number of HGV movements to Establish Compounds	-	89	13	18	63	62
Number of HGV movements to Demobilise Compounds	-	89	13	18	63	62
Total Number of Skip Movements	-	279	117	124	110	135
Total Number of Compound HGV Movements	-	457	143	160	236	259

General Data
Number of Wellbore / Container Units Per Delivery
Number of plants per delivery
Frequency of Skip Emptying (weeks)

Main TCC Requirements (Welfare and Operation Plant)
Site Office Unit
Canteen Unit
Tool Storage Unit
Workshop Unit
Mobile Toilet Unit
Washing / Changing Unit
First Aid Unit
Drying Room Unit
Freshwater Storage Container (2 per delivery)
Foul Water Storage Container (2 per delivery)
Bunded Fuel Tank (1 per delivery)
Generator (2 per delivery)
General Waste Skip (1 per delivery)
Wheel Wash (assume 3 deliveries to mobilise)
Weigh bridge (assume 3 deliveries to mobilise)
Telehandler
Road Sweeper
Number of HGV Movements

Satellite TCC Requirements (Welfare and Operation Plant)
Site Office Unit
Canteen Unit
Tool Storage Unit
Workshop Unit
Mobile Toilet Unit
Washing / Changing Unit
First Aid Unit
Drying Room Unit
Freshwater Storage Container (2 per delivery)
Foul Water Storage Container (2 per delivery)
Bunded Fuel Tank (1 per delivery)
Generator (2 per delivery)
General Waste Skip (1 per delivery)
Wheel Wash (assume 3 deliveries to mobilise)
Weigh bridge (assume 3 deliveries to mobilise)
Telehandler
Road Sweeper
Number of HGV Movements

Landfill HDD Compound Requirements (Welfare and Operation Plant)
Site Office Unit
Canteen Unit / Lunch Room
Welfare Unit
Tool Storage Unit
Workshop Unit
Generator (2 per delivery)
Freshwater Storage Container (2 per delivery)
Foul Water Storage Container (2 per delivery)
General Waste Skip (1 per delivery)
Bunded Fuel Tank
Bentonite Storage Container
Mixing Tank
Cuttings Container
Drill Pipe Rack
Mud Pump
Power Pack
Driller's Cabin
HDD Rig
Telehandler / Excavator
Number of HGV Movements

Long / Moderate Onshore HDD Entry Pit Compound Requirements (Welfare and Operation Plant)
Site Office Unit
Canteen Unit / Lunch Room
Welfare Unit
Tool Storage / General Storage
Workshop Unit
Generator (2 per delivery)
Freshwater Storage Container (2 per delivery)
Foul Water Storage Container (2 per delivery)
General Waste Skip (1 per delivery)
Bundled Fuel Tank
Bentonite Storage
Mixing Tank
Cuttings Container
Drill Pipe Rack
Mud Pump
Power Pack
Driller's Cabin
HDD Rig
Telehandler / Excavator
Number of HGV Movements

Long / Moderate Onshore HDD Exit Pit Compound Requirements (Welfare and Operation Plant)
Site Office / Welfare Unit
General Waste Skip (1 per delivery)
Generator (2 per delivery)
Tool Storage Unit
Drill Pipe Rack
Number of HGV Movements

Minor Onshore HDD Entry Pit Compound Requirements (Welfare and Operation Plant)
Site Office / Welfare Unit
Canteen Unit / Lunch Room
Welfare Unit
Tool Storage / General Storage
Workshop Unit
Generator (2 per delivery)
Freshwater Storage Container (2 per delivery)
Foul Water Storage Container (2 per delivery)
General Waste Skip (1 per delivery)
Bundled Fuel Tank
Bentonite Storage Container
Fluid and Recycling Tanks
Cuttings Container
Spare Rods
Mud Pump
Power Pack
Driller's Cabin
Mini HDD Rig
Telehandler / Excavator
Number of HGV Movements

Minor Onshore HDD Exit Pit Compound Requirements (Welfare and Operation Plant)
Site Office / Welfare Unit
General Waste Skip (1 per delivery)
Generator (2 per delivery)
Tool Storage Unit
Drill Pipe Rack
Number of HGV Movements

Substation TCC Requirements (Welfare and Operation Plant)
Site Office Unit
Canteen Unit
Tool Storage Unit
Workshop Unit
Mobile Toilet Unit
Washing / Changing Unit
First Aid Unit
Drying Room Unit
Freshwater Storage Container (2 per delivery)
Foul Water Storage Container (2 per delivery)
Bundled Fuel Tank (1 per delivery)
Generator (2 per delivery)
General Waste Skip (1 per delivery)
Wheel Wash (assume 3 deliveries to mobilise)
Weigh bridge (assume 3 deliveries to mobilise)
Telehandler
Road Sweeper
Number of HGV Movements

Section	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 14 (including 400kV)	Substation Zone	Section 15 (400kV)
Compound Welfare and Operation Plant Requirements	456	156	236	148	613	123	214	222	910	267
Grand total deliveries	456	156	236	148	613	123	214	222	910	267
Grand total (two way movements)	912	312	472	296	1,226	246	428	444	1,820	534

Compound Welfare and Operation Plant Requirements	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 14 (including 400kV)	Substation Zone	Section 15 (400kV)
Number of Main TCC	1	0	0	0	1	0	0	0	0	0
Number of Minor TCC	0	1	1	1	1	1	1	1	0	1
Number of Substation TCC	0	0	0	0	0	0	0	0	1	0
Duration of TCC Site	78	65	65	61	78	66	57	65	190	70
Number of Skip Movements	234	99	99	93	351	84	87	99	760	105
Number of Landfill Compounds	0	0	0	0	0	0	0	0	0	0
Duration of Landfill Compound Usage	0	0	0	0	0	0	0	0	0	0
Number of Skip Movements	0	0	0	0	0	0	0	0	0	0
Number of Long / Moderate HDD Drilling Compounds	1	0	2	0	1	0	1	0	0	0
Combined Duration of Onshore HDD Drilling Compound Usage	9	0	22	0	0	0	13	0	0	0
Number of Skip Movements	5	0	11	0	0	0	7	0	0	0
Number of Long / Moderate HDD Exit Pit Compounds	1	2	0	2	0	0	0	1	0	0
Combined Duration of Onshore HD Exit Compound Usage	13	22	0	18	0	0	0	13	0	0
Number of Skip Movements	7	11	0	9	0	0	0	7	0	0
Number of Minor HDD Drilling Compounds	2	0	0	0	3	0	1	2	0	3
Combined Duration of Onshore HDD Drilling Compound Usage	8	0	0	0	13	0	5	9	0	13
Number of Skip Movements	5	0	0	0	7	0	3	5	0	7
Number of Minor HDD Exit Pit Compounds	2	0	0	0	2	2	1	1	0	4
Combined Duration of Onshore HD Exit Compound Usage	9	0	0	0	9	9	5	5	0	23
Number of Skip Movements	5	0	0	0	5	5	3	3	0	11
Number of HGV movements to Establish Compounds	100	23	63	23	125	17	57	54	75	72
Number of HGV movements to Demobilise Compounds	100	23	63	23	125	17	57	54	75	72
Total Number of Skip Movements	256	110	110	102	363	89	100	114	760	123
Total Number of Compound HGV Movements	456	156	236	148	613	123	214	222	910	267

Section 1 (Including Landfall & Transition Bay Works)

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCCs and site accesses	44	370	8.4	8.4																										
Mobilisation of Welfare and Operation Plant to TCC	22	26	1.2																											
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	110	1,358		12.3	12.3	12.3	12.3	12.3																						
Cable Construction Works																														
Trench Excavation and duct installation	198	992					5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0																
Trench Backfill with CBS and protective covers	198	760					3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8																
Jointing Bay Excavation	88	37												0.4	0.4	0.4	0.4													
Jointing Bay Base Construction	88	35												0.4	0.4	0.4	0.4													
Pulling and connection of cables	88	63														0.7	0.7	0.7	0.7											
Backfill over Jointing Bays	88	25														0.3	0.3	0.3	0.3											
HDD At Landfall																														
Establish Landfall HDD construction compound / Topsoil Strip in Landfall Laydown Area	22	273			12.4																									
Mobilisation of HDD Kit and Welfare to Landfall Compound	22	25			1.1																									
HDD Drilling works & Ducting (assume working 24/7 7 days a week but 22 delivery days a month)	180	822				4.6	4.6	4.6	4.6	4.6	4.6																			
Demobilisation of HDD kit and welfare	22	25									1.1																			
Transition Bays at Landfall																														
Excavation of transition bays	44	34											0.8	0.8																
Construction of transition bay and link box base and walls	66	29											0.4	0.4	0.4															
Connection of Cables in Transition Bays	66	4														0.1	0.1	0.1												
Transition bay backfill and roof and backfill over transition bay	66	33															0.5	0.5	0.5											
Landfall Compound Removal and Reinstatement	66	273																			4.1	4.1	4.1							
Minor HDD crossing of B1242 (OB ID S1-RX-1 OR S1-RX-2) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	97								4.4																				
Mobilisation of HDD Kit and Welfare to compounds	22	19								0.9																				
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	35									1.6																			
Demobilisation of HDD Kit and welfare to next minor HDD	22	0									0.0																			
Remove of onshore HDD Entry and Exit Compounds - materials reused at next minor HDD	22	0									0.0																			
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S1-UUX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds - materials from previous minor HDD	22	0									0.0																			
Mobilisation of HDD Kit and Welfare to compounds - equipment from previous minor HDD	22	0									0.0																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	35										1.6																		
Demobilisation of HDD Kit and welfare	22	19											0.9																	
Remove of onshore HDD Entry and Exit Compounds	22	97																		4.4										
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	1,358																						20.6	20.6	20.6				
Demobilisation of Welfare from TCC	22	26																								1.2				
TCC and access road Removal	44	370																							8.4	8.4				
Average Section Skip HGV Movements Per Day	396	279	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7			
Total HGVs per day			10.3	21.5	26.6	17.6	26.5	26.5	19.4	15.7	15.3	12.4	12.4	11.9	11.9	3.1	6.6	25.4	33.8	35.0										
Total two-way HGV movements per day			20.6	42.9	53.2	35.2	52.9	52.9	38.7	31.4	30.5	24.7	24.9	23.7	23.9	6.2	13.2	50.8	67.7	70.0										

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	2	1	1	1	1		2			2	3	3	3	3	3	3	
30T Excavator	2	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
20T Dumper	3	3	6	3	6	6	4	4	4	6	6	6	6	6	6	4	4	4	
Smooth Drum vibrio road roller	1	2	2	1	1	1	1		1	1	1		1	1	1	2	2	2	
21T excavator	1	2	2	1	3	3	3	3	3	3	3	3	3	3	3	2	2	2	
5T Forward Tipping Dumper	1	2	2	1	3	3	3	3	3	3	3	3	3	2	2	2	2	2	
Loading shovel	1	2	2	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Trench Roller					2	2	2	2	2	2	2	2	2	2	2				
Tractor & fencing kit	1	1	1	1	1	1	1		1					1	1	1	1	1	
Tractor & trailer	1	2	2	1	3	3	3	2	2	3	3	3	3	2	2	2	2	2	
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & cable drum trailer													1	1	1	1			
Tractor & soil tiller, roller, seeder																1	1	1	
Cement mixer														1	1	1			
Mobile crane													1	1	1	1			
Grader	1	2	2	1	1	1	1		1										
Cable laying tracked crane													1	1	1				
Cable winch														1	1	1	1		
Pre-cast concrete truck														1	1	1			
Mobile concrete pump											1	2	2	1	1				
Telehandler	1	2	2	1	3	3	3	2	3	3	3	3	3	3	3	1			
Mobile self-contained welfare unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Crawler Crane					1	1	1	1	1	1	1	1	1	1	1	1			
Mobile generator deliveries (corrected for 2 per delivery)	2	2	2	1	3	3	3	2	2	4	6	8	7	7	5	2	2	2	
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	3	3	2	3	3	4	5	3	3	3	2	2	2	
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)					1	1	2	1	1	2	3	4	3	3	2				
Total Plant Onsite In Section Per Month	21	31	33	20	41	41	40	31	38	41	46	55	53	53	46	30	30	30	
Total Deliveries / Removals	21	10	4	13	21	0	3	9	7	11	5	11	12	0	7	20	0	30	
Average Deliveries / Removals Per Day	1.0	0.5	0.2	0.6	1.0	0.0	0.1	0.4	0.3	0.5	0.2	0.5	0.5	0.0	0.3	0.9	0.0	1.4	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	2	2	0	1	1	1	1	1	1	2	0	1	2	0	3	

Section 1 (Including Landfall & Transition Bay Works)
Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																										
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30									
Establish TCC and site accesses	44	132	3	3																									
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	110	330		3	3	3	3	3																					
Cable Construction Works																													
Trench Excavation and duct installation	198	396					2	2	2	2	2	2	2	2	2														
Trench Backfill with CBS and protective covers	198	396					2	2	2	2	2	2	2	2	2														
Jointing Bay Excavation	88	176											2	2	2	2													
Jointing Bay Base Construction	88	176											2	2	2	2	2												
Pulling and connection of cables	88	264													3	3	3	3											
Backfill over Jointing Bays	88	176													2	2	2	2	2										
HDD At Landfall																													
Establish Landfall HDD construction compound	22	66			3																								
HDD Drilling works & Ducting (assume working 24/7 7 days a week) Includes Admin of HDD Compound	180	2,880				16	16	16	16	16	16																		
Transition Bays at Landfall																													
Excavation of transition bays	44	88											2	2															
Construction of transition bay base and walls	66	198											3	3	3														
Connection of Cables in Transition Bays	66	198													3	3	3												
Transition bay Roof and backfill over transition bay	66	198														3	3	3											
Landfall Compound Removal and Reinstatement	66	198																											
Minor HDD crossing of B1242 (OB ID S1-RX-1 OR S1-RX-2) - HDD Entry and Exit																													
Establish HDD Entry and Exit Pit Compound	22	44							2																				
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110								5																			
Remove of onshore HDD Entry and Exit Compounds - materials reused at next minor HDD	22	22									1																		
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S1-UUX-1) - HDD Entry and Exit																													
Establish HDD Entry and Exit Pit Compounds - materials from previous minor HDD	22	22									1																		
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110										5																	
Remove of onshore HDD Entry and Exit Compound	22	44																		2									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	198																							3	3	3		
TCC and access road Removal	44	132																								3	3		
Plant Operators																													
Overall Plant Operators	468	13,650	17	26	28	16	33	33	31	25	31	31	32	37	38	38	34	25	25	25									
Section 1 Engineering Personnel																													
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4									
Average Total Employees per day			24	36	38	39	60	60	57	54	57	49	49	60	61	57	48	35	38	38									
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	76	78	120	120	114	108	114	98	98	120	122	114	96	70	76	76									

Section 1 (Including Landfall & Transition Bay Works)
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	21	43	53	35	53	53	39	31	31	25	25	24	24	6	13	51	68	70
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	23	48	60	40	59	59	44	35	34	28	28	27	27	7	15	57	76	78
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	2	2	0	1	1	1	1	1	1	2	0	1	2	0	3
Average total two-way HGV Movements Per Day	25	49	61	42	61	59	45	36	35	29	29	28	29	7	16	59	76	81
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	76	78	120	120	114	108	114	98	98	120	122	114	96	70	76	76
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	84	86	132	132	126	119	126	108	108	132	135	126	106	77	84	84
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	78	129	145	128	193	191	171	155	161	137	137	160	164	133	122	136	160	165

Section 2

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	88	1,194		13.6	13.6	13.6	13.6													
Cable Construction Works																				
Trench Excavation and duct installation	176	934						5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3					
Trench Backfill with CBS and protective covers	176	716						4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1					
Jointing Bay Excavation	66	33												0.5	0.5	0.5				
Jointing Bay Base Construction	66	31												0.5	0.5	0.5				
Pulling and connection of cables	66	54													0.8	0.8	0.8			
Backfill over Jointing Bays	66	21													0.3	0.3	0.3			
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	1,194																18.1	18.1	18.1
Demobilisation of Welfare from TCC	22	13																		0.6
TCC and access road Removal	44	190																	4.3	4.3
Average Section Skip HGV Movements Per Day	396	117	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total HGVs per day			5.2	18.2	13.9	13.9	13.9	9.7	9.7	9.7	9.7	9.7	9.7	10.6	11.8	2.4	1.4	18.4	22.7	23.3
Total two-way HGV movements per day			10.4	36.4	27.7	27.7	27.7	19.3	19.3	19.3	19.3	19.3	19.3	21.3	23.6	4.8	2.9	36.8	45.4	46.6

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1	1	1								2	2	2	2	3	3	
30T Excavator	2	3	2	2	2	3	3	3	3	3	3	3	3	3	2	2	3	3	
20T Dumper	3	3	3	3	3	4	4	4	4	4	4	6	6	4	2	2	4	4	
Smooth Drum vibrio road roller	1	2	1	1	1											1	2	2	
21T excavator	1	2	1	1	1	3	3	3	3	3	3	3	3	2	1	1	2	2	
5T Forward Tipping Dumper	1	2	1	1	1	3	3	3	3	3	3	3	2	2	1	1	2	2	
Loading shovel	1	2	1	1	1	3	3	3	3	3	3	3	3	1	1	2	3	3	
Trench Roller						2	2	2	2	2	2	2	2	1	1				
Tractor & fencing kit	1	1	1	1	1											1	1	1	
Tractor & trailer	1	2	1	1	1	2	2	2	2	2	2	3	3	1		1	2	2	
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & cable drum trailer													1	1	1				
Tractor & soil tiller, roller, seeder																1	1	1	
Cement mixer																			
Mobile crane																			
Grader	1	2	1	1	1														
Cable laying tracked crane																			
Cable winch													1	1	1				
Pre-cast concrete truck																			
Mobile concrete pump												1	1	1					
Telehandler	1	2	1	1	1	2	2	2	2	2	2	3	3	1					
Mobile self-contained welfare unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Crawler Crane						1	1	1	1	1	1	1	1						
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	1	2	2	2	2	2	2	3	6	3	2	1	2	2	
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	2	2	2	2	2	2	3	4	2	1	2	2	2	
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)						1	1	1	1	1	1	3	3	2	1				
Total Plant Onsite in Section Per Month	21	31	20	20	20	31	31	31	31	31	31	40	47	30	19	20	30	30	
Total Deliveries / Removals	21	10	11	0	0	19	0	0	0	0	0	9	9	17	11	11	10	30	
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.8	0.5	0.5	0.5	1.4	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	0	2	0	0	0	0	0	1	1	2	1	1	1	3	

Section 2

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCC and site accesses	44	132	3	3																
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	88	264		3	3	3	3													
Cable Construction Works																				
Trench Excavation and duct installation	176	352						2	2	2	2	2	2	2	2					
Trench Backfill with CBS and protective covers	176	352						2	2	2	2	2	2	2	2					
Jointing Bay Excavation	66	132												2	2	2				
Jointing Bay Base Construction	66	132												2	2	2				
Pulling and connection of cables	66	198													3	3	3			
Backfill over Jointing Bays	66	132													2	2	2			
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	78	234																3	3	3
TCC and access road Removal	52	156																	3	3
Plant Operators																				
Overall Plant Operators	468	10,556	17	26	16	16	16	25	25	25	25	25	25	30	33	22	14	16	25	25
Section 1 Engineering Personnel																				
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Average Total Employees per day			24	36	23	23	23	33	33	33	33	33	33	42	50	35	23	23	35	35
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	46	46	66	66	66	66	66	66	84	100	70	46	46	70	70

Section 2

Indicative Total Vehicle Movement Requirements

Activity	Month																			
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	36	28	28	28	19	19	19	19	19	19	21	24	5	3	37	45	47		
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	40	31	31	31	22	22	22	22	22	22	24	26	6	4	41	50	52		
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	0	2	0	0	0	0	0	1	1	2	1	1	1	3		
Average total two-way HGV Movements Per Day	14	41	32	31	31	24	22	22	22	22	22	25	27	8	5	42	51	55		
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	46	66	66	66	66	66	66	84	100	70	46	46	70	70		
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	51	73	73	73	73	73	73	93	110	77	51	51	77	77		
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	121	83	82	82	97	95	95	95	95	95	118	137	85	56	93	128	132		

Section 3

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	66	875		13.3	13.3	13.3														
Cable Construction Works																				
Trench Excavation and duct installation	132	716								5.4	5.4	5.4	5.4	5.4	5.4					
Trench Backfill with CBS and protective covers	132	548								4.2	4.2	4.2	4.2	4.2	4.2					
Jointing Bay Excavation	66	27												0.4	0.4	0.4				
Jointing Bay Base Construction	66	26												0.4	0.4	0.4				
Pulling and connection of cables	66	45													0.7	0.7	0.7			
Backfill over Jointing Bays	66	18													0.3	0.3	0.3			
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Exit Only																				
Establish HDD Exit Pit Compound	22	54					2.5													
Mobilisation of HDD Kit and Welfare to compounds	22	5					0.2													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	16						0.2	0.2	0.2										
Demobilisation of HDD Kit and welfare.	22	5									0.2									
Remove of onshore HDD Exit Compound	22	54															2.5			
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	875																13.3	13.3	13.3
Demobilisation of Welfare from TCC	22	13																		0.6
TCC and access road Removal	44	190																	4.3	4.3
Average Section Skip HGV Movements Per Day	396	124	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total HGVs per day			5.2	17.9	13.6	13.6	3.0	0.6	0.6	10.1	10.1	9.9	9.9	10.7	11.6	2.1	3.7	13.6	17.9	18.5
Total two-way HGV movements per day			10.4	35.8	27.1	27.1	6.0	1.1	1.1	20.3	20.2	19.8	19.8	21.4	23.3	4.1	7.4	27.1	35.8	37.0

Section 3

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer	1	2	1	1	1								2	2	2	2	3	3
30T Excavator	2	3	2	2	2			3	3	3	3	3	3	3	3	2	3	3
20T Dumper	3	3	3	3				4	4	4	4	6	6	4	4	2	4	4
Smooth Drum vibrio road roller	1	2	1	1	1										1	1	2	2
21T excavator	1	2	1	1	1			3	3	3	3	3	3	2	2	1	2	2
5T Forward Tipping Dumper	1	2	1	1	1			3	3	3	3	3	2	2	2	1	2	2
Loading shovel	1	2	1	1	1			3	3	3	3	3	3	1	3	2	3	3
Trench Roller								2	2	2	2	2	2	1	1			
Tractor & fencing kit	1	1	1	1	1										1	1	1	1
Tractor & trailer	1	2	1	1	1			2	2	2	2	3	3	1	1	1	2	2
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1
Tractor & Water bowser (for dust suppression)	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1
Tractor & cable drum trailer													1	1	1			
Tractor & soil tiller, roller, seeder																1	1	1
Cement mixer																		
Mobile crane																		
Grader	1	2	1	1	1													
Cable laying tracked crane																		
Cable winch													1	1	1			
Pre-cast concrete truck												1	1	1				
Mobile concrete pump																		
Telehandler	1	2	1	1	1			2	2	2	2	3	3	1				
Mobile self-contained welfare unit	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1
Crawler Crane								1	1	1	1	1	1					
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	1			2	2	2	2	3	6	3	3	1	2	2
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2			2	2	2	2	3	4	2	2	2	2	2
Road surface paver & roller	1	1																
Pump deliveries (corrected for 4 per delivery)								1	1	1	1	3	3	2	1			
Total Plant Onsite In Section Per Month	21	31	20	20	17	0	0	31	31	31	31	40	47	30	31	20	30	30
Total Deliveries / Removals	21	10	11	0	20	0	0	31	0	0	0	9	9	17	7	13	10	30
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.9	0.0	0.0	1.4	0.0	0.0	0.0	0.4	0.4	0.8	0.3	0.6	0.5	1.4
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	2	0	0	3	0	0	0	1	1	2	1	2	1	3

Section 3

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCC and site accesses	44	132	3	3																
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	66	198		3	3	3														
Cable Construction Works																				
Trench Excavation and duct installation	132	264								2	2	2	2	2	2					
Trench Backfill with CBS and protective covers	132	264								2	2	2	2	2	2					
Jointing Bay Excavation	66	132												2	2	2				
Jointing Bay Base Construction	66	132												2	2	2				
Pulling and connection of cables	66	198													3	3	3			
Backfill over Jointing Bays	66	132													2	2	2			
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Exit Only																				
Establish HDD Exit Pit Compounds	22	44					2													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	66	132						2	2	2										
Remove of onshore HDD Entry and Exit Compounds	22	44															2			
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	78	234																3	3	3
TCC and access road Removal	52	156																	3	3
Plant Operators																				
Overall Plant Operators	416	9,438	17	26	16	16	13			25	25	25	25	30	33	22	24	16	25	25
Section 1 Engineering Personnel																				
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Average Total Employees per day			24	36	23	23	19	6	6	35	33	33	33	42	50	35	35	23	35	35
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	46	38	12	12	70	66	66	66	84	100	70	70	46	70	70

Section 3
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	36	27	27	6	1	1	20	20	20	20	21	23	4	7	27	36	37
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	40	30	30	7	2	2	23	23	22	22	24	26	5	9	30	40	41
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	2	0	0	3	0	0	0	1	1	2	1	2	1	3
Average total two-way HGV Movements Per Day	14	41	31	30	9	2	2	26	23	22	22	25	27	7	10	32	41	44
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	38	12	12	70	66	66	66	84	100	70	70	46	70	70
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	42	14	14	77	73	73	73	93	110	77	77	51	77	77
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	121	82	81	51	16	16	103	96	95	95	118	137	84	87	83	118	121

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	532		12.1	12.1															
Cable Construction Works																				
Trench Excavation and duct installation	66	278			4.2	4.2	4.2													
Trench Backfill with CBS and protective covers	66	213			3.2	3.2	3.2													
Jointing Bay Excavation	44	17											0.4	0.4						
Jointing Bay Base Construction	44	16											0.4	0.4						
Pulling and connection of cables	44	27												0.6	0.6					
Backfill over Jointing Bays	44	12												0.3	0.3					
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Entry Only																				
Establish HDD Entry Pit Compound	22	104					4.7													
Mobilisation of HDD Kit and Welfare to compounds	22	25					1.1													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	29						0.4	0.4	0.4										
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0									
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	0									0.0									
Major HDD crossing of Stream Dike (OB ID S4-WX-1) - HDD Entry Only																				
Establish HDD Entry Pit Compound - Reuse from previous HDD in section.	22	0									0.0									
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in section.	22	0									0.0									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	29										0.6	0.6							
Demobilisation of HDD Kit and welfare.	22	25												1.1						
Remove of onshore HDD Entry Compound	22	104														4.7				
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	532														12.1	12.1			
Demobilisation of Welfare from TCC	22	13															0.6			
TCC and access road Removal	44	190														4.3	4.3			
Average Section Skip HGV Movements Per Day	330	110	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
Total HGVs per day			5.2	16.7	19.9	7.8	13.6	0.8	0.8	0.8	0.3	1.0	1.7	3.1	1.2	21.5	17.3	0.0	0.0	0.0
Total two-way HGV movements per day			10.5	33.5	39.7	15.5	27.3	1.5	1.5	1.5	0.7	2.0	3.5	6.2	2.4	42.9	34.7	0.0	0.0	0.0

Section 4 (Including Landfall & Transition Bay Works)

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1		1				2			2	2	3	3				
30T Excavator	2	3	3	3	3				2		2	3	2	3	3				
20T Dumper	3	3	6	4	4				2		2	4	2	4	4				
Smooth Drum vibrio road roller	1	2	1		1				1					2	2				
21T excavator	1	2	3	3	3				1		1	2	1	2	2				
5T Forward Tipping Dumper	1	2	3	3	3				1		1	2	1	2	2				
Loading shovel	1	2	3	3	3				2			1	1	3	3				
Trench Roller			2	2	2							1	1						
Tractor & fencing kit	1	1	1		1				1					1	1				
Tractor & trailer	1	2	3	2	3				1		1	1		2	2				
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1				1		1	1	1	1	1				
Tractor & Water bowser (for dust suppression)	1	1	1	1	1				1		1	1	1	1	1				
Tractor & cable drum trailer												1	1						
Tractor & soil tiller, roller, seeder														1	1				
Cement mixer																			
Mobile crane																			
Grader	1	2	1		1				1										
Cable laying tracked crane																			
Cable winch												1	1						
Pre-cast concrete truck																			
Mobile concrete pump											1	1							
Telehandler	1	2	3	2	3				1		1	1							
Mobile self-contained welfare unit	1	1	1	1	1				1		1	1	1	1	1				
Crawler Crane			1	1	1														
Mobile generator deliveries (corrected for 2 per delivery)	2	2	3	2	3				2		2	3	2	2	2				
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	3	2	3				1		1	2	1	2	2				
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)			1	1	2						1	2	1						
Total Plant Onsite In Section Per Month	21	31	41	31	40	0	0	0	21	0	16	30	19	30	30	0	0	0	
Total Deliveries / Removals	21	10	18	10	49	0	0	0	42	0	16	14	11	19	30	0	0	0	
Average Deliveries / Removals Per Day	1.0	0.5	0.8	0.5	2.2	0.0	0.0	0.0	1.9	0.0	0.7	0.6	0.5	0.9	1.4	0.0	0.0	0.0	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	2	1	5	0	0	0	4	0	2	2	1	2	3	0	0	0	

Section 4 (**Indicative Average Daily Personnel Requirements**

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCC and site accesses	44	132	3	3																
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3															
Cable Construction Works																				
Trench Excavation and duct installation	66	132			2	2	2													
Trench Backfill with CBS and protective covers	66	132			2	2	2													
Jointing Bay Excavation	44	88											2	2						
Jointing Bay Base Construction	44	88											2	2						
Pulling and connection of cables	44	132												3	3					
Backfill over Jointing Bays	44	88												2	2					
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Entry Only																				
Establish HDD Entry Pit Compound	22	44					2													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	66	198						3	3	3										
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	22									1									
Major HDD crossing of Stream Dike (OB ID S4-WX-1) - HDD Entry Only																				
Establish HDD Entry Pit Compound - Reuse from previous HDD in section.	22	22									1									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132										3	3							
Remove of onshore HDD Entry and Exit Compounds	22	44														2				
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156														3	3			
TCC and access road Removal	52	156														3	3			
Plant Operators																				
Overall Plant Operators	286	6,396	17	26	33	25	31				17		11	22	14	25	25			
Section 1 Engineering Personnel																				
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,560	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
Average Total Employees per day			24	36	44	33	41	7	7	7	23	7	22	35	23	37	35	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	88	66	82	14	14	14	46	14	44	70	46	74	70	0	0	0

Section 4
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	33	40	16	27	2	2	2	1	2	3	6	2	43	35	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	38	45	18	31	2	2	2	1	3	4	7	3	49	39	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	2	1	5	0	0	0	4	0	2	2	1	2	3	0	0	0
Average total two-way HGV Movements Per Day	14	39	47	19	36	2	2	2	5	3	6	9	4	51	42	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	88	66	82	14	14	14	46	14	44	70	46	74	70	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	97	73	91	16	16	16	51	16	49	77	51	82	77	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	119	144	92	127	18	18	18	56	19	55	86	55	133	119	0	0	0

Section 5
Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCCs and site accesses	44	190	4.3	4.3																										
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																											
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	88	1,105		12.6	12.6	12.6	12.6																							
Cable Construction Works																														
Trench Excavation and duct installation	132	738								5.6	5.6	5.6	5.6	5.6	5.6															
Trench Backfill with CBS and protective covers	132	566								4.3	4.3	4.3	4.3	4.3	4.3															
Jointing Bay Excavation	66	27														0.4	0.4	0.4												
Jointing Bay Base Construction	66	26														0.4	0.4	0.4												
Pulling and connection of cables	66	45															0.7	0.7	0.7											
Backfill over Jointing Bays	66	18															0.3	0.3	0.3											
Major HDD crossing of Stream Dike (OB ID S4-WX-1) - HDD Exit Only																														
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section	22	0										0.0																		
Mobilisation of HDD Kit and Welfare to compounds	22	5										0.2																		
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	6											0.1	0.1																
Demobilisation of HDD Kit and welfare	22	5														0.2														
Remove of onshore HDD Exit Compound	22	54																			2.5									
Major HDD crossing of Monk Dike and Meaux & Routh East Drain (OB IDs S6-WX-1 and S6-WX-2) - HDD Entry Only																														
Establish HDD Entry Pit Compound - Reuse from previous HDD in section with additional material delivered to site	22	5					0.2																							
Mobilisation of HDD Kit and Welfare to compounds	22	25					1.1																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	38					0.6	0.6	0.6																					
Demobilisation of HDD Kit and welfare	22	25										1.1																		
Remove of onshore HDD Entry Compound - reuse of some material at next HDD in section with some material removed from site	22	51									2.3																			
Minor HDD crossing of A165 (OB ID S5-RX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	100			4.5																									
Mobilisation of HDD Kit and Welfare to compounds	22	19			0.9																									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	36				1.6																								
Demobilisation of HDD Kit and welfare	22	19					0.9																							
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	0					0.0																							
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	1,105																							16.7	16.7	16.7			
Demobilisation of Welfare from TCC	22	13																								0.6				
TCC and access road Removal	44	190																								4.3	4.3			
Average Section Skip HGV Movements Per Day	396	135	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
Total HGVs per day			6.3	17.2	18.3	14.5	15.1	0.9	0.9	10.8	13.9	10.4	10.4	11.3	12.0	2.1	3.8	17.1	21.4	22.0										
Total two-way HGV movements per day			10.5	34.4	36.6	29.1	30.3	1.8	1.8	21.6	27.8	20.7	20.7	22.5	24.0	4.2	7.5	34.2	42.8	44.0										

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	2	1	2				2				2	2	3	2	3	3	
30T Excavator	2	3	3	2	3			3	3	3	3	3	3	3	3	2	3	3	
20T Dumper	3	3	3	3	4			4	4	4	4	6	6	4	4	2	4	4	
Smooth Drum vibrio road roller	1	2	2	1	2				1						1	1	2	4	
21T excavator	1	2	2	1	2			3	3	3	3	3	3	2	2	1	2	2	
5T Forward Tipping Dumper	1	2	2	1	2			3	3	3	3	3	2	2	2	1	2	2	
Loading shovel	1	2	2	1	3			3	3	3	3	3	3	1	3	2	3	3	
Trench Roller								2	2	2	2	2	2	1	1				
Tractor & fencing kit	1	1	1	1	1				1						1	1	1	1	
Tractor & trailer	1	2	2	1	2			2	2	2	2	3	3	1	1	1	2	2	
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	
Tractor & cable drum trailer													1	1	1				
Tractor & soil tiller, roller, seeder																1	1	1	
Cement mixer																			
Mobile crane																			
Grader	1	2	2	1	2				1										
Cable laying tracked crane																			
Cable winch													1	1	1				
Pre-cast concrete truck												1	1	1					
Mobile concrete pump																			
Telehandler	1	2	2	1	2			2	3	2	2	3	3	1					
Mobile self-contained welfare unit	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	
Crawler Crane								1	1	1	1	1	1						
Mobile generator deliveries (corrected for 2 per delivery)	2	2	2	1	2			2	2	2	2	3	6	3	3	1	2	2	
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2			2	3	2	2	3	4	2	2	2	2	2	
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)								1	1	1	1	3	3	2	1				
Total Plant Onsite In Section Per Month	21	31	30	20	32	0	0	31	39	31	31	40	47	30	33	20	30	30	
Total Deliveries / Removals	21	10	1	10	44	0	0	31	7	7	0	9	9	17	9	13	10	30	
Average Deliveries / Removals Per Day	1.0	0.5	0.0	0.5	2.0	0.0	0.0	1.4	0.3	0.3	0.0	0.4	0.4	0.8	0.4	0.6	0.5	1.4	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	1	4	0	0	3	1	1	0	1	1	2	1	2	1		

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCC and site accesses	44	132	3	3																										
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	88	264	3	3	3	3																								
Cable Construction Works																														
Trench Excavation and duct installation	132	264									2	2	2	2	2	2	2													
Trench Backfill with CBS and protective covers	132	264									2	2	2	2	2	2	2													
Jointing Bay Excavation	66	132															2	2	2	2										
Jointing Bay Base Construction	66	132															2	2	2	2										
Putting and connection of cables	66	198																3	3	3										
Backfill over Jointing Bays	66	132																2	2	2	2									
Major HDD crossing of Stream Dike (OB ID S64-WX-1) - HDD Exit Only																														
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section	22	22										1																		
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132											3	3																
Remove of onshore HDD Entry and Exit Compound	22	44																				2								
Major HDD crossing of Monk Dike and Meaus & Routh East Drain (OB ID S66-WX-1 and S6-WX-2) - HDD Entry Only																														
Establish HDD Entry Pit Compound - Reuse from previous HDD in section with additional material delivered to site	22	22						1																						
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	66	396						6	6	6																				
Remove of onshore HDD Entry Compound - reuse of some material at next HDD in section with some material removed from site	22	22										1																		
Minor HDD crossing of A165 (OB ID S5-RX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	44			2																									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	22	110				5																								
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	22					1																							
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	104	312																				3	3	3	3					
TCC and access road Removal	52	156																								3	3			
Plant Operators																														
Overall Plant Operators	416	10,244	17	26	25	16	27					25	31	25	25	30	33	22	26	16	25	25								
Section 1 Engineering Personnel																														
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Average Total Employees per day			24	36	34	26	36	10	10	10	39	41	36	36	42	50	35	40	23	35	35									
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	68	56	72	20	20	20	78	82	72	72	72	84	100	70	80	46	70	70								

Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	11	34	37	29	30	2	2	22	28	21	21	23	24	4	8	34	43	44
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	38	41	33	34	3	3	24	31	23	23	25	27	5	9	38	48	49
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	1	4	0	0	3	1	1	0	1	1	2	1	2	1	3
Average total two-way HGV Movements Per Day	14	39	42	34	38	3	3	27	32	24	23	26	28	7	10	40	49	52
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	68	56	72	20	20	78	82	72	72	84	100	70	80	46	70	70
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	75	62	80	22	22	86	91	80	80	93	110	77	88	51	77	77
Maximum Total HGV and Car/small van Two-Way Movements Per Day (car/small van)	67	119	117	96	118	25	25	113	123	104	103	119	138	84	98	91	126	129

Section 6
Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

[illegible]

Section 6

Indicative Construction Plant Requirements

Plant	Month																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
DG Diesel	1	2	1	2	2	2			2				2	2	2	2	3	3												
30T Excavator	2	3	2	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3												
20T Dumper	3	3	3	3	3	2	4	4	4	4	4	6	6	4	4	2	4	4												
Smooth Drum vibrto road roller	1	2	1	2	2	1			1						1	1	2													
JIT excavator	1	2	1	2	2	1	3	3	3	3	3	3	3	3	2	2	1	2												
ST Forward Tipping Dumper	1	2	1	2	2	1	3	3	3	3	3	3	3	2	2	2	1	2												
Loading shovel	1	2	1	2	2	2	3	3	3	3	3	3	3	3	1	3	2	3												
Trench Beller							2	2	2	2	2	2	2	2	1	1														
Tractor & grading kit	1	1	1	1	1	1			1							1	1	1												
Tractor & trailer	1	2	1	2	2	1	2	2	2	2	2	2	3	3	1	1	2	2												
Tractor & Fuel bowser (or self-supplied)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1												
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1												
Tractor & cable drum trailer													1	1	1															
Tractor & soil tiller, roller, seeder																1	1	1												
Cement mixer																														
Mobile crane																														
Grazer						1			1																					
Cable laying tracked crane																														
Cable winch																														
Pne-act concrete track														1	1	1														
Mobile concrete pump																														
Vibehammer	1	2	1	2	2	1	2	2	3	2	2	3	3	1																
Mobile self-contained welfare unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1												
Crawler Crane							1	1	1	1	1	1	1	1																
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	2	2	2	2	2	2	2	2	2	3	6	3	3	1	2												
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	1	2	2	3	2	2	2	3	4	2	2	2	2												
Road surface paver & roller	1	1																												
Pump deliveries (corrected for 4 per delivery)							1	1	1	1	1	3	3	2	2	1														
Total Plant Onsite In Section Per Month	21	31	20	30	30	21	31	31	38	31	31	40	47	30	31	20	30	30												
Total Deliveries / Removals	21	10	11	10	8	9	20	0	7	7	0	9	9	17	7	13	10	30												
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.5	0.0	0.4	0.9	0.0	0.3	0.3	0.0	0.4	0.4	0.8	0.3	0.6	0.5	1.4												
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	1	0	1	2	0	1	1	0	1	1	2	1	2	1	2												

Section 8

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCC and site access	44	132	3	3																										
Site preparation including fencing, temporary drainage, haul road construction and tapered strip	88	264			3	3	5	3																						
Cable Construction Works																														
Trench Excavation and duct installation	154	308								2	2	2	2	3	2	2														
Trench Backfill with CBS and protective covers	154	308								2	2	2	2	2	2	2														
Joining Bay Excavation	66	132															2	2	2											
Joining Bay Base Construction	66	132																2	2	2										
Pulling and connection of cables	66	198																							3	3	3			
Backfill over Joining Bays	66	132																							2	2	2			
Major HDD crossing of Holderness Drain (OB ID S6-WX-6) - HDD Entry Only																														
Establish HDD Entry PE Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22											1																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	44	264															6	6												
Remove of onshore HDD Entry Compound	22	22																										1		
Major HDD crossing of Monk Dike and Meuss & Routh East Drain (Ob IDs S6-WX-1 and S6-WX-2) - HDD Exit Only																														
Establish HDD Ext PE Compound	22	44						2																						
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	66	198								3	3	3																		
Remove of onshore HDD Ext Compound - Reuse at next HDD in Section	22	22																												
Minor HDD crossing of A1035 (OB ID S6-RX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit PE Compound	22	44					2																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110								6																				
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	22											1																	
Minor HDD crossing of Onshore Export Cables of Dogger Band A & B (OB ID S6-US-1); - HDD Entry and Exit																														
Establish HDD Entry and Exit PE Compounds - Reuse from previous HDD in Section	22	22											1																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110																												
Remove of onshore HDD Entry and Exit Compounds	22	22																										1		
Haul Road Removal (includes removal of fencing) and reinstatement of cable route																														
TCC and access road Removal	62	166																											3	3
Plant Operators																														
Overall Plant Operators	468	11,232	17	26	16	26	26	17	26	26	31	26	26	39	33	22	24	16	26	26										
Section 1 Engineering Personnel																														
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4										
Project Engineering Personnel Based at Main TCC																														
Head Engineer, 2 x Admin Staff, QS, Assistant QS, Overall Site Foreman, M&S Supervisor, HDD Assistant, Environmental Clerk, Assistant Environmental Clerk, Lead Surveyor, 2 x collecting staff, 2 x client representative, 2 x owner's engineers, 2 x additional allowance	468	9,360	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Average Total Employees per day																														
Maximum Total Employee Two-way Movements Per Day (carriamval)			88	112	86	108	118	92	121	112	122	118	118	124	140	110	110	86	110	110	110									

Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	19	42	27	38	36	2	23	22	27	21	21	24	24	6	22	36	51	54	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	21	47	31	42	40	2	26	24	30	23	23	27	27	7	25	40	57	60	
Construction Plant Average Two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	1	0	1	2	0	1	1	0	1	1	2	1	2	1	3	
Average total two-way HGV Movements Per Day	23	48	32	43	40	3	28	24	31	24	23	28	28	9	26	42	58	63	
Maximum Total Employee Two-way Movements Per Day (car/sailman van)	88	112	86	108	118	92	122	112	122	118	118	124	140	110	110	86	110	110	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	97	124	95	119	130	102	135	124	135	130	130	137	154	121	121	95	121	121	
Maximum Total HGV and Car/sailman van Two-way Movements Per Day (car/sailman van)	120	172	127	162	170	105	163	148	166	154	153	165	182	130	147	137	179	184	

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																			
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Establish TCCs and site accesses	44	190	4.3	4.3																		
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																			
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	608		13.8	13.8																	
Cable Construction Works																						
Trench Excavation and duct installation	88	474				5.4	5.4	5.4	5.4													
Trench Backfill with CBS and protective covers	88	364				4.1	4.1	4.1	4.1													
Jointing Bay Excavation	44	17											0.4	0.4								
Jointing Bay Base Construction	44	16											0.4	0.4								
Pulling and connection of cables	44	27													0.6	0.6						
Backfill over Jointing Bays	44	12													0.3	0.3						
Major HDD crossing of Holderness Drain (OB ID S6-WX-3) - HDD EXIT Only																						
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	0									0.0											
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0											
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	8										0.2	0.2									
Demobilisation of HDD Kit and welfare	22	5												0.2								
Remove of onshore HDD Entry Compound	22	53															2.4					
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Exit Only																						
Establish HDD Exit Pit Compound	22	53					2.4															
Mobilisation of HDD Kit and Welfare to compounds	22	5					0.2															
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	8						0.1	0.1	0.1												
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0											
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0									0.0											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	608															13.8	13.8				
Demobilisation of Welfare from TCC	22	13																0.6				
TCC and access road Removal	44	190															4.3	4.3				
Average Section Skip HGV Movements Per Day	330	110	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3					
Total HGVs per day			5.2	18.5	14.2	9.9	12.5	10.0	10.0	0.5	0.3	0.5	1.3	2.2	1.2	20.9	19.1	0.0	0.0	0.0		
Total two-way HGV movements per day			10.5	36.9	28.3	19.7	24.9	20.0	20.0	0.9	0.7	1.0	2.5	4.4	2.4	41.7	38.1	0.0	0.0	0.0		

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer	1	2	1		1				2			2	2	3	3			
30T Excavator	2	3	2	3	3	3	3		2		2	3	2	3	3			
20T Dumper	3	3	3	4	4	4	4		2		2	4	2	4	4			
Smooth Drum vibrio road roller	1	2	1		1				1					2	2			
21T excavator	1	2	1	3	3	3	3		1		1	2	1	2	2			
5T Forward Tipping Dumper	1	2	1	3	3	3	3		1		1	2	1	2	2			
Loading shovel	1	2	1	3	3	3	3		2			1	1	3	3			
Trench Roller				2	2	2	2					1	1					
Tractor & fencing kit	1	1	1		1				1					1	1			
Tractor & trailer	1	2	1	2	3	2	2		1		1	1		2	2			
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1		1		1	1	1	1	1			
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1		1		1	1	1	1	1			
Tractor & cable drum trailer												1	1					
Tractor & soil tiller, roller, seeder														1	1			
Cement mixer																		
Mobile crane																		
Grader	1	2	1		1				1									
Cable laying tracked crane																		
Cable winch												1	1					
Pre-cast concrete truck																		
Mobile concrete pump												1	1					
Telehandler	1	2	1	2	3	2	2		1		1	1						
Mobile self-contained welfare unit	1	1	1	1	1	1	1		1		1	1	1	1	1			
Crawler Crane				1	1	1	1											
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	2	3	2	2		2		2	3	2	2	2			
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	2	2		1		1	2	1	2	2			
Road surface paver & roller	1	1																
Pump deliveries (corrected for 4 per delivery)				1	2	1	1					1	2	1				
Total Plant Onsite In Section Per Month	21	31	20	31	40	31	31	0	21	0	16	30	19	30	30	0	0	0
Total Deliveries / Removals	21	10	11	19	9	9	31	0	42	0	16	14	11	19	30	0	0	0
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.9	0.4	0.4	1.4	0.0	1.9	0.0	0.7	0.6	0.5	0.9	1.4	0.0	0.0	0.0
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	2	1	1	3	0	4	0	2	2	1	2	3	0	0	0

Section 7

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCC and site accesses	44	132	3	3																
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3															
Cable Construction Works																				
Trench Excavation and duct installation	88	176				2	2	2	2											
Trench Backfill with CBS and protective covers	88	176				2	2	2	2											
Jointing Bay Excavation	44	88											2	2						
Jointing Bay Base Construction	44	88											2	2						
Pulling and connection of cables	44	132												3	3					
Backfill over Jointing Bays	44	88												2	2					
Major HDD crossing of Holderness Drain (OB ID S6-WX-3) - HDD EXIT Only																				
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22									1									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132										3	3							
Remove of onshore HDD Entry Compound	22	44														2				
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Exit Only																				
Establish HDD Exit Pit Compound	22	44					2													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	66	198						3	3	3										
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22									1									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156														3	3			
TCC and access road Removal	52	156														3	3			
Plant Operators																				
Overall Plant Operators	338	7,254	17	26	16	25	31	25	25		17		11	22	14	25	25			
Section 1 Engineering Personnel																				
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,560	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
Average Total Employees per day			24	36	23	33	41	36	36	7	23	7	22	35	23	37	35	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	66	82	72	72	14	46	14	44	70	46	74	70	0	0	0

Section 7
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	37	28	20	25	20	20	1	1	1	3	4	2	42	38	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	41	32	22	28	22	22	1	1	2	3	5	3	46	42	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	2	1	1	3	0	4	0	2	2	1	2	3	0	0	0
Average total two-way HGV Movements Per Day	14	42	33	24	29	23	25	1	5	2	5	7	4	48	45	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	66	82	72	72	14	46	14	44	70	46	74	70	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	73	91	80	80	16	51	16	49	77	51	82	77	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	122	84	97	120	103	105	17	56	18	54	84	55	130	122	0	0	0

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCCs and site accesses	44	190	4.3	4.3																										
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																											
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	66	772		11.7	11.7	11.7																								
Cable Construction Works																														
Trench Excavation and duct installation	66	358					5.4	5.4	5.4																					
Trench Backfill with CBS and protective covers	66	275					4.2	4.2	4.2																					
Jointing Bay Excavation	44	17											0.4	0.4																
Jointing Bay Base Construction	44	16											0.4	0.4																
Pulling and connection of cables	44	27													0.6	0.6														
Backfill over Jointing Bays	44	12													0.3	0.3														
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Entry Only																														
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	0									0.0																			
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	44										1.0	1.0																	
Demobilisation of HDD Kit and welfare	22	25												1.1																
Remove of onshore HDD Entry Compound	22	104															4.7													
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Entry Only																														
Establish HDD Entry Pit Compound	22	104					4.7																							
Mobilisation of HDD Kit and Welfare to compounds	22	25					1.1																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	44						0.7	0.7	0.7																				
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0																			
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0									0.0																			
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	772															17.5	17.5												
Demobilisation of Welfare from TCC	22	13																0.6												
TCC and access road Removal	44	190															4.3	4.3												
Average Section Skip HGV Movements Per Day	330	110	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3												
Total HGVs per day			5.2	16.3	12.0	12.0	15.8	10.6	10.6	1.0	0.3	1.3	2.1	3.1	1.2	26.9	22.8	0.0	0.0	0.0										
Total two-way HGV movements per day			10.5	32.7	24.1	24.1	31.6	21.2	21.2	2.0	0.7	2.7	4.2	6.2	2.4	53.8	45.6	0.0	0.0	0.0										

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer	1	2	1	1	1				2			2	2	3	3			
30T Excavator	2	3	2	2	3	3	3		2		2	3	2	3	3			
20T Dumper	3	3	3	3	4	4	4		2		2	4	2	4	4			
Smooth Drum vibrio road roller	1	2	1	1	1				1					2	2			
21T excavator	1	2	1	1	3	3	3		1		1	2	1	2	2			
5T Forward Tipping Dumper	1	2	1	1	3	3	3		1		1	2	1	2	2			
Loading shovel	1	2	1	1	3	3	3		2			1	1	3	3			
Trench Roller					2	2	2					1	1					
Tractor & fencing kit	1	1	1	1	1				1					1	1			
Tractor & trailer	1	2	1	1	3	2	2		1		1	1		2	2			
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1		1		1	1	1	1	1			
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1		1		1	1	1	1	1			
Tractor & cable drum trailer												1	1					
Tractor & soil tiller, roller, seeder														1	1			
Cement mixer																		
Mobile crane																		
Grader	1	2	1	1	1				1									
Cable laying tracked crane												1	1					
Cable winch												1	1					
Pre-cast concrete truck																		
Mobile concrete pump											1	1						
Telehandler	1	2	1	1	3	2	2		1		1	1						
Mobile self-contained welfare unit	1	1	1	1	1	1	1		1		1	1	1	1	1			
Crawler Crane					1	1	1											
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	3	2	2		2		2	3	2	2	2			
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	2	2		1		1	2	1	2	2			
Road surface paver & roller	1	1																
Pump deliveries (corrected for 4 per delivery)					2	1	1				1	2	1					
Total Plant Onsite In Section Per Month	21	31	20	20	40	31	31	0	21	0	16	30	19	30	30	0	0	0
Total Deliveries / Removals	21	10	11	0	20	9	31	0	42	0	16	14	11	19	30	0	0	0
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.9	0.4	1.4	0.0	1.9	0.0	0.7	0.6	0.5	0.9	1.4	0.0	0.0	0.0
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	2	1	3	0	4	0	2	2	1	2	3	0	0	0

Section 8

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																			
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Establish TCC and site accesses	44	132	3	3																		
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	66	198		3	3	3																
Cable Construction Works																						
Trench Excavation and duct installation	66	132					2	2	2													
Trench Backfill with CBS and protective covers	66	132					2	2	2													
Jointing Bay Excavation	44	88											2	2								
Jointing Bay Base Construction	44	88											2	2								
Pulling and connection of cables	44	132												3	3							
Backfill over Jointing Bays	44	88												2	2							
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Entry Only																						
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22									1											
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	264										6	6									
Remove of onshore HDD Entry Compound	22	44														2						
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Entry Only																						
Establish HDD Entry Pit Compound	22	44					2															
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	66	396						6	6	6												
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22									1											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156														3	3					
TCC and access road Removal	52	156														3	3					
Plant Operators																						
Overall Plant Operators	338	7,020	17	26	16	16	31	25	25		17		11	22	14	25	25					
Section 1 Engineering Personnel																						
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,560	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4					
Average Total Employees per day			24	36	23	23	41	39	39	10	23	10	25	35	23	37	35	0	0	0		
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	46	82	78	78	20	46	20	50	70	46	74	70	0	0	0		

Section 8
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	33	24	24	32	21	21	2	1	3	4	6	2	54	46	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	37	27	27	36	24	24	3	1	3	5	7	3	61	51	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	2	1	3	0	4	0	2	2	1	2	3	0	0	0
Average total two-way HGV Movements Per Day	14	38	28	27	38	25	27	3	5	3	7	9	4	63	54	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	82	78	78	20	46	20	50	70	46	74	70	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	91	86	86	22	51	22	55	77	51	82	77	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	118	79	78	129	111	113	25	56	25	62	86	55	145	131	0	0	0

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																			
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Establish TCCs and site accesses	44	190	4.3	4.3																		
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																			
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	344		7.8	7.8																	
Cable Construction Works																						
Trench Excavation and duct installation	44	266				6.0	6.0															
Trench Backfill with CBS and protective covers	44	205				4.7	4.7															
Jointing Bay Excavation	22	12											0.5									
Jointing Bay Base Construction	22	11											0.5									
Pulling and connection of cables	22	18												0.8								
Backfill over Jointing Bays	22	8												0.4								
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Exit Only																						
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	0									0.0											
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0											
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	6										0.1	0.1									
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	5												0.2								
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	53													2.4							
Major HDD crossing of Catchwater Drain (OB IDs S9-WX-1) - HDD Exit Only																						
Establish HDD Exit Pit Compound	22	53						2.4														
Mobilisation of HDD Kit and Welfare to compounds	22	5						0.2														
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	6							0.1	0.1												
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0											
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0									0.0											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	344													7.8	7.8						
Demobilisation of Welfare from TCC	22	13														0.6						
TCC and access road Removal	44	190													4.3	4.3						
Average Section Skip HGV Movements Per Day	308	102	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3						
Total HGVs per day			5.2	12.5	8.1	11.0	11.0	2.9	0.5	0.5	0.3	0.5	1.5	1.7	14.9	13.1	0.0	0.0	0.0	0.0		
Total two-way HGV movements per day			10.5	24.9	16.3	22.1	22.1	5.9	0.9	0.9	0.7	0.9	3.0	3.5	29.7	26.1	0.0	0.0	0.0	0.0		

Section 9
Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1			1			2			2	3	3					
30T Excavator	2	3	2	3	3	2			2		2	2	3	3					
20T Dumper	3	3	3	4	4				2		2	2	4	4					
Smooth Drum vibrio road roller	1	2	1			1			1				2	2					
21T excavator	1	2	1	3	3	1			1		1	1	2	2					
5T Forward Tipping Dumper	1	2	1	3	3	1			1		1	1	2	2					
Loading shovel	1	2	1	3	3	1			2			1	3	3					
Trench Roller				2	2							1							
Tractor & fencing kit	1	1	1			1			1				1	1					
Tractor & trailer	1	2	1	2	2	1			1		1		2	2					
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1			1		1	1	1	1					
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1			1		1	1	1	1					
Tractor & cable drum trailer												1							
Tractor & soil tiller, roller, seeder													1	1					
Cement mixer																			
Mobile crane																			
Grader	1	2	1			1			1										
Cable laying tracked crane																			
Cable winch												1							
Pre-cast concrete truck																			
Mobile concrete pump											1								
Telehandler	1	2	1	2	2	1			1		1								
Mobile self-contained welfare unit	1	1	1	1	1	1			1		1	1	1	1					
Crawler Crane				1	1														
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	2	2	1			2		2	2	2	2					
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	2			1		1	1	2	2					
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)				1	1						1	1							
Total Plant Onsite In Section Per Month	21	31	20	31	31	17	0	0	21	0	16	19	30	30	0	0	0	0	
Total Deliveries / Removals	21	10	11	19	0	39	0	0	42	0	16	9	19	30	0	0	0	0	
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.9	0.0	1.8	0.0	0.0	1.9	0.0	0.7	0.4	0.9	1.4	0.0	0.0	0.0	0.0	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	2	0	4	0	0	4	0	2	1	2	3	0	0	0	0	

Section 9

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																							
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30						
Establish TCC and site accesses	44	132	3	3																						
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3																					
Cable Construction Works																										
Trench Excavation and duct installation	44	88				2	2																			
Trench Backfill with CBS and protective covers	44	88				2	2																			
Jointing Bay Excavation	22	44											2													
Jointing Bay Base Construction	22	44											2													
Pulling and connection of cables	22	66												3												
Backfill over Jointing Bays	22	44												2												
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Exit Only																										
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22									1															
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132										3	3													
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	44													2											
Major HDD crossing of Catchwater Drain (OB IDs S9-WX-1) - HDD Exit Only																										
Establish HDD Exit Pit Compound	22	44						2																		
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132							3	3																
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22									1															
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156													3	3										
TCC and access road Removal	52	156													3	3										
Plant Operators																										
Overall Plant Operators	286	5,564	17	26	16	25	25	13			17		11	14	25	25										
Section 1 Engineering Personnel																										
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	364	1,456	4	4	4	4	4	4	4	4	4	4	4	4	4	4										
Average Total Employees per day			24	36	23	33	33	19	7	7	23	7	22	23	37	35	0	0	0	0						
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	66	66	38	14	14	46	14	44	46	74	70	0	0	0	0						

Section 9
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	25	16	22	22	6	1	1	1	1	3	3	30	26	0	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	28	18	25	25	7	2	2	1	2	4	4	33	29	0	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	2	0	4	0	0	4	0	2	1	2	3	0	0	0	0
Average total two-way HGV Movements Per Day	14	29	19	27	25	11	2	2	5	2	6	5	35	32	0	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	66	66	38	14	14	46	14	44	46	74	70	0	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	73	73	42	16	16	51	16	49	51	82	77	0	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	109	70	100	98	53	18	18	56	18	55	56	117	109	0	0	0	0

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

[illegible]

Section 10

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D8 Dozer	1	2	1	1	1	1	2		2				2	2	2	2	3	3	
30T Excavator	2	3	2	2	2	2	2		3	3	3	3	3	3	3	2	3	3	
28T Dumper	3	3	3	3				2	4	4	4	6	6	4	4	2	4	4	
Smooth Drum vibrio road roller	1	2	1	1	1	1	1		1						1	1	2	2	
21T excavator	1	2	1	1	1	1	1		3	3	3	3	3	2	2	1	2	2	
3T Forward Tipping Dumper	1	2	1	1	1	1	1		3	3	3	3	2	2	2	1	2	2	
Loading shovel	1	2	1	1	1	1	2		3	3	3	3	3	1	3	2	3	3	
Trench Boller									2	2	2	2	2	1	1				
Tractor & binding kit	1	1	1	1	1	1	1	1							1	1	1	1	
Tractor & trailer	1	2	1	1	1	1	1	1		2	2	2	3	3	1	1	1	2	
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	1	1	1	1	2	1	1		1	1	1	1	1	1	1	1	1	2	
Tractor & cable drum trailer													1	1	1				
Tractor & soil tiller, roller, seeder																1	1	1	
Cement mixer																			
Mobile crane																			
Grader	1	2	1	1	1	1	1	1		1									
Cable laying tracked crane																			
Cable winch													1	1	1				
Pre-cast concrete truck																			
Mobile concrete pump												1	1	1					
Telehandler	1	2	1	1	1	1	1	1		3	2	2	3	3	1				
Mobile self-contained welfare unit	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	
Crawler Crane										1	1	1	1	1					
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	1	1	2		2	2	2	3	6	3	3	1	2	2	
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	2	1		3	2	2	3	4	2	2	2	2	2	
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)									1	1	1	3	3	2	1				
Total Plant Onsite In Section Per Month	21	31	20	20	17	17	21	0	38	31	31	40	47	30	31	20	30	30	
Total Deliveries / Removals	21	19	11	0	3	0	27	0	38	7	0	9	9	17	7	13	10	30	
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.1	0.0	1.2	0.0	1.7	0.3	0.0	0.4	0.4	0.8	0.3	0.6	0.5	1.4	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	1	0	3	0	4	1	0	1	1	2	1	2	1	3	

[illegible][illegible]

Section 16A

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190			4.3	4.3														
Mobilisation of Welfare and Operation Plant to TCC	22	13			0.6															
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	22	332					15.1													
Cable Construction Works																				
Trench Excavation and duct installation	44	254						5.8	5.8											
Trench Backfill with CBS and protective covers	44	196						4.5	4.5											
Jointing Bay Excavation	22	12												0.5						
Jointing Bay Base Construction	22	11												0.5						
Pulling and connection of cables	22	18													0.8					
Backfill over Jointing Bays	22	8													0.4					
Minor HDD crossing of Mature Woodland at Newbald Road (OB ID S16A-E0X-1) - HDD Exit																				
Establish HDD Exit Pit Compound	22	37							1.7											
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	2							0.1											
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	6								0.3										
Demobilisation of HDD Kit and welfare - Reused at next HDD in section.	22	0									0.0									
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section.	22	0									0.0									
Minor HDD crossing of A1174 (OB ID S10-RX-4) - HDD Exit																				
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	0									0.0									
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	6										0.3								
Demobilisation of HDD Kit and welfare	22	2											0.1							
Remove of onshore HDD Exit Compound	22	37														1.7				
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	22	332														15.1				
Demobilisation of Welfare from TCC	22	13															0.6			
TCC and access road Removal	44	190														4.3	4.3			
Average Section Skip HGV Movements Per Day	286	89			0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
Total HGVs per day			0.0	0.0	5.2	4.6	15.4	10.5	12.3	0.6	0.3	0.6	0.4	1.4	1.5	21.4	5.2	0.0	0.0	0.0
Total two-way HGV movements per day			0.0	0.0	10.4	9.3	30.8	21.1	24.6	1.1	0.6	1.1	0.8	2.7	3.0	42.8	10.4	0.0	0.0	0.0

Section 16A

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer			1	1	1		1		2				2	3	2			
30T Excavator			2	2	2	3	3		2			2	2	3	2			
20T Dumper			3	3	3	4	4		2			2	2	4	2			
Smooth Drum vibrio road roller			1	1	1		1		1					2	1			
21T excavator			1	1	1	3	3		1			1	1	2	1			
5T Forward Tipping Dumper			1	1	1	3	3		1			1	1	2	1			
Loading shovel			1	1	1	3	3		2				1	3	2			
Trench Roller						2	2						1					
Tractor & fencing kit			1	1	1		1		1					1	1			
Tractor & trailer			1	1	1	2	3		1			1		2	1			
Tractor & Fuel bowser (or self-propelled)			1	1	1	1	1		1			1	1	1	1			
Tractor & Water bowser (for dust suppression)			1	1	1	1	1		1			1	1	1	1			
Tractor & cable drum trailer													1					
Tractor & soil tiller, roller, seeder														1	1			
Cement mixer																		
Mobile crane																		
Grader			1	1	1		1		1									
Cable laying tracked crane																		
Cable winch													1					
Pre-cast concrete truck																		
Mobile concrete pump												1						
Telehandler			1	1	1	2	3		1			1						
Mobile self-contained welfare unit			1	1	1	1	1		1			1	1	1	1			
Crawler Crane						1	1											
Mobile generator deliveries (corrected for 2 per delivery)			2	2	1	2	3		2			2	2	2	1			
Temporary lighting deliveries (corrected for 8 per delivery)			1	1	2	2	3		1			1	1	2	1			
Road surface paver & roller			1	1														
Pump deliveries (corrected for 4 per delivery)						1	2					1	1					
Total Plant Onsite In Section Per Month	0	0	21	21	20	31	40	0	21	0	0	16	19	30	19	0	0	0
Total Deliveries / Removals	0	0	21	0	3	19	49	0	42	0	0	16	9	19	30	0	0	0
Average Deliveries / Removals Per Day	0.0	0.0	1.0	0.0	0.1	0.9	2.2	0.0	1.9	0.0	0.0	0.7	0.4	0.9	1.4	0.0	0.0	0.0
Average Total two-way HGV movements (Deliveries / Removals) Per Day	0	0	2	0	1	2	5	0	4	0	0	2	1	2	3	0	0	0

Section 16A

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																												
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30											
Establish TCC and site accesses	44	132			3	3																									
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	22	66					3																								
Cable Construction Works																															
Trench Excavation and duct installation	44	88							2	2																					
Trench Backfill with CBS and protective covers	44	88							2	2																					
Jointing Bay Excavation	22	44													2																
Jointing Bay Base Construction	22	44													2																
Pulling and connection of cables	22	66														3															
Backfill over Jointing Bays	22	44														2															
Minor HDD crossing of Mature Woodland at Newbald Road (OB ID S16A-EOX-1) - HDD Exit																															
Establish HDD Exit Pit Compound	22	44								2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	22	44									2																				
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section.	22	22										1																			
Minor HDD crossing of A1174 (OB ID S10-RX-4) - HDD Exit																															
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	22										1																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	22	44											2																		
Remove of onshore HDD Exit Compound	22	22															1														
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	26	78														3															
TCC and access road Removal	52	156															3	3													
Plant Operators																															
Overall Plant Operators	260	4,914			17	17	16	25	31		17				11	14	25	16													
Section 1 Engineering Personnel																															
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	338	1,352			4	4	4	4	4	4	4	4	4	4	4	4	4														
Average Total Employees per day			0	0	24	24	23	33	41	6	23	6	4	19	23	36	23														
Maximum Total Employee Two-way Movements Per Day (car/small van)			0	0	48	48	46	66	82	12	46	12	8	38	46	72	46														

Section 16A
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	0	0	10	9	31	21	25	1	1	1	1	3	3	43	10	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	0	0	12	11	34	24	27	2	1	2	1	3	4	47	12	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	0	0	2	0	1	2	5	0	4	0	0	2	1	2	3	0	0	0
Average total two-way HGV Movements Per Day	0	0	14	11	35	26	32	2	5	2	1	5	5	49	15	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	0	0	48	48	46	66	82	12	46	12	8	38	46	72	46	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	0	0	53	53	51	73	91	14	51	14	9	42	51	80	51	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	0	0	67	64	86	99	123	16	56	16	10	47	56	129	66	0	0	0

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCCs and site accesses	44	190	4.3	4.3																										
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																											
Site preparation including fencing, temporary drainages, haul road construction and topsoil strip.	44	621		14.1	14.1																									
Cable Construction Works																														
Trench Excavation and duct installation	66	368								5.4	5.4	5.4																		
Trench Backfill with CBS and protective covers	66	276								4.2	4.2	4.2																		
Jointing Bay Excavation	44	17																0.4	0.4											
Jointing Bay Base Construction	44	16																0.4	0.4											
Pulling and connection of cables	44	27																	0.8	0.8										
Backfill over Jointing Bays	44	12																	0.3	0.3										
Major HDD Exit for HDD crossing of A1079 (OB IDs S16B-RX-2 or S16B-RX-3) - HDD Entry																														
Establish HDD Entry Pit Compound	22	106							4.8																					
Mobilisation of HDD Kit and Welfare to compounds	22	17							0.8																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	77								1.2	1.2	1.2																		
Demobilisation of HDD Kit and welfare	22	17														0.8														
Remove of onshore HDD Exit Compound	22	106																								4.8				
Minor HDD crossing of B1220 (OB ID S16B-RX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	100							4.5																					
Mobilisation of HDD Kit and Welfare to compounds	22	19							0.9																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	38								1.7																				
Demobilisation of HDD Kit and welfare - Reused at next HDD in section. Exit P8 equipment removed from site	22	2											0.1																	
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section for entry compound. Exit compound materials removed from site	22	38											1.7																	
Minor HDD crossing of Mature Woodland at Newbold Road (OB ID S16A-EOX-1) - HDD Entry																														
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	0											0.0																	
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0											0.0																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	8											0.4																	
Demobilisation of HDD Kit and welfare	22	17														0.8														
Remove of onshore HDD Entry Compound	22	62																								2.3				
Haul Road Removal (includes removal of fencing) and adjustment of cable route	44	621																							14.1	14.1				
Demobilisation of Welfare from TCC	22	13																									0.6			
TCC and access road Removal	44	190																								4.3	4.3			
Average Section Skip HGV Movements Per Day	286	100	0.3	0.3	0.3				0.3	0.3	0.3	0.3	0.3	0.3	0.3			0.3	0.3	0.3	0.3									
		Total HGVs per day	6.3	18.8	14.5	0.0		11.3	3.2	12.9	11.5	11.5	0.3	0.8	2.0	1.2	26.4	19.4	0.0											
		Total two-way HGV movements per day	10.5	37.6	28.9	0.0		22.6	6.6	26.9	22.9	23.0	0.7	1.5	4.0	2.5	52.7	38.7	0.0	0.0										

Section 16B
Indicative Construction Plant Requirements

Plant	Month																											
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
06 Dozer	1	2	1		1		2					2	2	3	3													
30T Excavator	2	3	2		2		3	3	3			2	3	2	3	3												
20T Dumper	3	3	3				4	4	4			2	4	2	4	4												
Smooth Drum vibrio road roller	1	2	1		1		1								2	2												
21T excavator	1	2	1		1		3	3	3			1	2	1	2	2												
3T Forward Tipping Dumper	1	2	1		1		3	3	3			1	2	1	2	2												
Loading shovel	1	2	1		1		3	3	3			1	1	3	3													
Trench Roller							2	2	2			1	1															
Tractor & fencing kit	1	1	1		1		1							1	1													
Tractor & trailer	1	2	1		1		2	2	2			1	1		2	2												
Tractor & Fuel bowser (or self propelled)	1	1	1		1		1	1	1			1	1	1	1	1												
Tractor & Water bowser (for dust suppression)	1	1	1		1		1	1	1			1	1	1	1	1												
Tractor & cable drum trailer												1	1															
Tractor & soil filler, roller, seeder															1	1												
Cement mixer																												
Mobile crane																												
Grader	1	2	1		1		1																					
Cable laying tracked crane																												
Cable winch												1	1															
Pre-cast concrete truck												1	1															
Mobile concrete pump												1	1															
Telehandler	1	2	1		1		3	2	2			1	1															
Mobile self-contained welfare unit	1	1	1		1		1	1	1			1	1	1	1	1												
Crawler Crane							1	1	1																			
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1		1		2	2	2			2	3	2	2	2												
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2		2		3	2	2			1	2	1	2	2												
Road surface paver & roller	1	1																										
Pump deliveries (corrected for 4 per delivery)							1	1	1			1	2	1														
Total Plant Onsite In Section Per Month	21	31	20	0	17	0	38	31	31	0	16	30	19	30	30	0	0	0										
Total Deliveries / Removals	21	10	31	0	34	0	38	7	31	0	16	14	11	19	30	0	0	0										
Average Deliveries / Removals Per Day	1.0	0.5	1.4	0.0	1.5	0.0	1.7	0.3	1.4	0.0	0.7	0.6	0.5	0.9	1.4	0.0	0.0	0.0										
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	3	0	4	0	4	1	3	0	2	2	1	2	3	0	0	0										

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCC and site accesses	44	132	3	3																								
Site preparation including fencing, temporary drainags, haul road construction and topsoil strip	44	132		3	3																							
Cable Construction Works																												
Trench Excavation and duct installation	66	132							2	2	2																	
Trench Backfill with CBS and protective covers	66	132							2	2	2																	
Jointing Bay Excavation	44	88												2	2													
Jointing Bay Base Construction	44	88												2	2													
Pulling and connection of cables	44	132														3	3											
Backfill over Jointing Bays	44	88														2	2											
Major HDD Exit for HDD crossing of A1079 (OB IDs S16B-RX-2 or S16B-RX-3) - HDD Entry																												
Establish HDD Entry Pit Compound	22	44					2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month, includes admin of HDD compound)	66	396						6	6	6																		
Remove of onshore HDD Exit Compound	22	44															2											
Minor HDD crossing of B1226 (OB ID S16B-RX-1) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compounds	22	44					2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110						5																				
Remove of onshore HDD Entry and Exit Compounds - materials routed at next HDD in section for entry compound. Exit compound materials removed from site	22	22							1																			
Minor HDD crossing of Mature Woodland at Newbold Road (OR ID S16A-FIVE-1) - HDD Entry																												
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	22							1																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	66								3																		
Remove of onshore HDD Entry Compound	22	44									2																	
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156																							3	3		
TCC and access road Removal	52	156																							3	3		
Plant Operators																												
Overall Plant Operators	312	6,500	17	26	16		13		31	25	25		11	22	14	25	25											

Activity	Month																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	11	38	29	0	23	6	26	23	23	1	2	4	2	53	39	0	0	0												
Increase to account for Miscellaneous allowances presented in Page 11 of Materials/Vehicle Movements Tab where the percentage increase is presented	12	42	32	0	25	8	29	26	26	1	2	5	3	59	43	0	0	0												
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	3	0	4	0	4	1	3	0	2	2	1	2	3	0	0	0												
Average total two-way HGV Movements Per Day	14	43	35	0	29	8	33	27	29	1	4	7	4	61	46	0	0	0												
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	0	42	30	94	84	70	0	38	70	46	74	70	0	0	0												
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	0	47	33	104	93	77	0	42	77	51	82	77	0	0	0												
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	123	86	0	76	41	137	120	106	1	46	84	55	143	123	0	0	0												

Section 14 (Including 400kV)

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCCs and site accesses	44	190	4.3	4.3																								
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																									
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	66	653		9.9	9.9	9.9																						
Cable Construction Works																												
Trench Excavation and duct installation	88	415							4.7	4.7	4.7	4.7																
Trench Backfill with CBS and protective covers	88	319							3.6	3.6	3.6	3.6																
Jointing Bay Excavation	44	17											0.4	0.4														
Jointing Bay Base Construction	44	16											0.4	0.4														
Pulling and connection of cables	44	27												0.6	0.6													
Backfill over Jointing Bays	44	12												0.3	0.3													
Major HDD Exit for HDD crossing of A1079 (OB IDs S16B-RX-2 or S16B-RX-3) - HDD Exit																												
Establish HDD Exit Pit Compound	22	54					2.5																					
Mobilisation of HDD Kit and Welfare to compounds	22	5					0.2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	15						0.2	0.2	0.2																		
Demobilisation of HDD Kit and welfare	22	5									0.2																	
Remove of onshore HDD Exit Compound	22	54															2.5											
Minor HDD crossing of Ancient Woodland Block (if Required) (OB ID S14-EOX-1) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compounds	22	96							4.5																			
Mobilisation of HDD Kit and Welfare to compounds	22	19							0.9																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	45								2.0																		
Demobilisation of HDD Kit and welfare - Reused at next HDD in section. Removal of plant associated with Exit Pit Compound	22	2									0.1																	
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section. Removal of Materials associated with Exit Pit Compound	22	38									1.7																	
Minor HDD crossing of A164 (OB ID S14-RX-1) - HDD Entry																												
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	0									0.0																	
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	39										0.9	0.9															
Demobilisation of HDD Kit and welfare	22	17												0.8														
Remove of onshore HDD Entry Pit Compounds	22	60															2.7											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	653															14.8	14.8										
Demobilisation of Welfare from TCC	22	13																0.6										
TCC and access road Removal	44	190																4.3	4.3									
Average Section Skip HGV Movements Per Day	330	114	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3									
Total HGVs per day			5.3	14.6	10.2	10.2	3.0	0.6	14.2	10.9	10.7	9.6	2.0	2.8	1.2	24.7	20.1	0.0	0.0	0.0								
Total two-way HGV movements per day			10.6	29.1	20.5	20.5	6.1	1.1	28.5	21.9	21.5	19.1	3.9	5.5	2.5	49.4	40.2	0.0	0.0	0.0								

Section 14

Indicative Construction Plant Requirements

Plant	Month																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
D6 Dozer	1	2	1	1	1		1	20	21	22	23	24	25	26	27															
20T Excavator	2	3	2	2	2		3	3	3	3	2	3	2	3	3															
20T Dumper	3	3	3	3	3		4	4	4	4	2	4	2	4	4															
Smooth Drum vibro road roller	1	2	1	1	1		1		1					2	2															
21T excavator	1	2	1	1	1		3	3	3	3	1	2	1	2	2															
3T Forward Tipping Dumper	1	2	1	1	1		3	3	3	3	1	2	1	2	2															
Loading shovel	1	2	1	1	1		3	3	3	3	1	1	1	3	3															
Trench Roller							2	2	2	2		1	1																	
Tractor & fencing kit	1	1	1	1	1		1		1					1	1															
Tractor & trailer	1	2	1	1	1		3	2	2	2	1	1		2	2															
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1		1	1	1	1	1	1	1	1	1															
Tractor & Water bowser (for dust suppression)	1	1	1	1	1		1	1	1	1	1	1	1	1	1															
Tractor & cable drum trailer												1	1																	
Tractor & soil tiller, roller, seeder														1	1															
Cement mixer																														
Mobile crane																														
Grader	1	2	1	1	1		1		1																					
Cable laying tracked crane																														
Cable winch												1	1																	
Pre-cast concrete truck												1	1																	
Mobile concrete pump												1	1																	
Telehandler	1	2	1	1	1		3	2	3	2	1	1																		
Mobile self-contained welfare unit	1	1	1	1	1		1	1	1	1	1	1	1	1	1															
Crawler Crane							1	1	1	1																				
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	1		3	2	2	2	3	2	2	2	2															
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2		3	2	3	2	1	2	1	2	2															
Road surface paver & roller	1	1																												
Pump deliveries (corrected for 4 per delivery)							2	1	1	1	1	2	1																	
Total Plant Onsite In Section Per Month	21	31	20	20	20	0	40	31	35	31	16	30	19	30	30	0	0	0												
Total Deliveries / Removals	21	10	11	0	20	0	40	9	7	7	17	14	11	19	30	0	0	0												
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.9	0.0	1.8	0.4	0.3	0.3	0.8	0.6	0.5	0.9	1.4	0.0	0.0	0.0												
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	2	0	4	1	1	1	2	2	1	2	3	0	0	0												

Indicative Average Daily Personnel Requirements

Section 14

Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	11	29	20	20	6	1	28	22	21	19	4	6	2	49	40	0	0	0	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	32	23	23	7	2	32	24	24	21	5	7	3	54	44	0	0	0	
Construction Plant Average Total two-way HGV Movements (deliveries / Removes) Per Day	2	1	1	0	2	0	4	1	1	2	2	1	2	3	0	0	0	0	
Average total two-way HGV Movements Per Day	14	33	24	23	9	2	36	25	25	22	7	9	4	56	47	0	0	0	
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	44	14	88	82	82	72	44	70	46	78	70	0	0	0	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	49	16	97	91	91	80	49	77	51	86	77	0	0	0	
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	113	75	74	58	18	133	116	116	102	56	86	55	142	124	0	0	0	

Substation Construction (Single Project Substations)
Average Materials and Welfare and Operation Plant Daily HGV Movements

[illegible]

Monthly Construction Plant Requirements

[illegible]

Substation Construction **Average Daily Personnel Requirements**

[illegible]

Total Vehicle Movement Requirements (Substation)

Activity	Week																																																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45				
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	39	63	67	37	37	37	37	66	103	43	43	43	43	43	43	44	44	44	44	44	44	44	44	44	47	6	6	6	5	5	5	5	5	5	2	2	2	2	2	2	2	2	34	34	34	45			
Increase to Account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	46	75	80	44	44	44	44	78	121	51	51	51	51	51	51	52	52	52	52	52	53	52	52	56	7	7	7	7	7	7	7	7	7	2	2	2	2	2	2	2	2	41	41	41	41				
Construction Plant Average Total two-way HGV Movements (Deliveries / Removals) Per Week)	2	1	2	1	0	0	0	1	1	3	0	0	2	0	0	2	0	0	0	0	1	1	0	1	2	0	0	2	3	0	0	0	0	3	0	0	0	0	0	0	0	4	0	2					
Average total two-way HGV Movements Per Day	48	76	82	45	44	44	44	79	122	54	51	51	53	51	51	54	52	52	52	52	54	53	52	57	9	7	7	7	9	10	7	7	7	7	5	2	2	2	2	2	2	2	45	45	41	43			
Maximum Total Employee Two-Way Movements Per Day (car/mail van)	88	112	112	94	94	94	94	114	138	122	122	122	122	156	156	156	156	156	156	170	170	170	170	202	210	196	156	156	156	132	106	106	106	106	106	106	78	78	78	78	78	78	78	78	86	86	86	86	
Employee Two-Way Movements Plus additional 1% for Miscellaneous Movements	97	124	124	104	104	104	104	126	152	135	135	135	135	172	172	172	172	172	172	187	187	187	187	217	223	231	172	172	172	146	117	117	117	117	117	117	86	86	86	86	86	86	86	86	95	95	95	95	
Maximum Total HGV and Car/mail van Two-way Movements Per Day (combined van)	145	200	206	148	148	148	148	205	274	189	186	186	225	223	223	241	239	239	239	239	239	266	240	275	288	181	179	179	155	127	124	124	124	124	91	88	88	88	88	88	88	88	88	88	88	140	136	136	138

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCCs and site access	44	190	4.3	4.2																										
Mobilisation of Welfare and Operation Plant to TCC	22	13	9.6																											
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	66	709		10.7	10.7	10.7																								
Cable Construction Works																														
Trench Excavation and duct installation	66	301						4.6	4.6	4.6																				
Trench Backfill with CBS and protective covers	66	231						3.5	3.5	3.5																				
Jointing Bay Excavation	44	17																		0.4	0.4									
Jointing Bay Base Construction	44	16																		0.4	0.4									
Pulling and connection of cables	44	27																				0.6	0.6							
Backfill over Jointing Bays	44	12																				0.3	0.3							
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S15-UXK-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	96			4.4																									
Mobilisation of HDD Kit and Welfare to compounds	22	19			0.9																									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	36					1.6																							
Demobilisation of HDD Kit and welfare - Reused at next HDD in section	22	0							0.9																					
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	0							0.9																					
Minor HDD crossing of SABIC/ NEDS High Pressure Ethylene Pipeline (OB ID S15-UXK-2) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds - Reuse from previous HDD in Section	22	0							0.9																					
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0							0.9																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	36							1.6																					
Demobilisation of HDD Kit and welfare - Reused at next HDD in section	22	0									0.9																			
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	0									0.9																			
Minor HDD crossing of Proposed Permanent Substation Access for Nomads Project 4 (OB ID S15-RX-3) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds - Reuse from previous HDD in Section	22	0								0.9																				
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0								0.9																				
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	36										1.6																		
Demobilisation of HDD Kit and welfare - Reused at next HDD in section. Removal of plant associated to Bth Entry Pit Compound	22	17												0.9																
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section. Removal of Materials associated with Entry Pit Compound	22	60													2.7															
Minor HDD crossing of A164 (OB ID S14-RX-1) - HDD Exit																														
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section	22	0													0.9															
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0													0.9															
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	7														0.1	0.1													
Demobilisation of HDD Kit and welfare - Reused at next HDD in section	22	2																0.1												
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	36																				1.6								
Haul Road Removal (includes removal of fencing) and establishment of cable route.	44	709																					16.1	16.1						
Demobilisation of Welfare from TCC	22	13																							0.6					
TCC and access road Removal	44	190																							4.3	4.3				
Average Section Skip HGV Movements Per Day	352	123	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4		
		Total HGVs per day	6.3	16.4	16.4	12.7	8.4	10.1	8.4	2.0	3.9	0.5	0.5	1.2	2.0	2.9	20.8	21.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		Total two-way HGV movements per day	10.6	30.9	32.7	26.5	16.9	20.1	16.9	4.0	7.7	1.0	1.0	2.4	4.0	5.8	41.6	42.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

Indicative Construction Plant Requirements

Plant	Month																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
06 Dozer	1	2	2	1	2		2		2				2	2	3	3														
10T Excavator	2	3	1	2	3	3	3		2			2	3	3	3	3														
20T Dumper	3	3	1	3	4	4	4		2			2	4	4	4	4														
Smooth Drum vibrio road roller	1	2	2	1	1		1		1					1	2	2														
21T excavator	1	2	2	1	3	3	3		1			1	2	2	2	2														
21 Forward Tipping Dumper	1	2	2	1	3	3	3					1	2	2	2	2														
Loading chisel	1	2	2	1	3	3	3		2				1	3	3	3														
French Roller					2	2	2						1	1																
Tractor & tamping kit	1	1	1	1	1		1		1					1	1	1														
Tractor & trailer	1	2	2	1	2	2	2		1			1	1	1	2	2														
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1		1			1	1	1	1	1														
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1		1			1	1	1	1	1														
Tractor & cable drum trailer													1	1																
Tractor & soil tiller, roller, tender																1	1													
Cement mixer																														
Mobile crane																														
Grader	1	2	2	1	1		1		1																					
Cable laying tracked crane																														
Cable winch														1	1															
Pre-cast concrete block																														
Mobile concrete pump																														
Telehandler	1	2	2	1	3	2	3		1			1	1			1														
Mobile self-contained welfare unit	1	1	1	1	1	1	1		1			1	1	1	1	1														
Crawler Crane					1	1	1																							
Mobile generator deliveries (corrected for 2 per delivery)	2	2	2	1	2	2	2		2			2	3	3	2	2														
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	2	3		1			1	2	2	2	2														
Fixed surface power & roller	1	1																												
Pump deliveries (corrected for 4 per delivery)					1	1	1					1	2	1																
Total Plant Onsite In Section Per Month	21	31	30	30	38	31	38	0	21	0	0	16	30	31	30	30	0	0												
Total Deliveries / Removals	21	10	1	10	26	0	46	0	42	0	0	16	14	1	39	30	0	0												
Average Deliveries / Removals Per Day	1.0	0.5	0.0	0.5	2.6	0.0	2.0	0.0	1.9	0.0	0.0	0.7	0.6	0.3	1.5	1.4	0.0	0.0												
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	1	6	0	5	0	4	0	0	2	2	1	4	3	0	0												

Indicative Average Daily Personnel Requirements

[illegible]

Indicative Total Vehicle Movement Requirements

[illegible]

Overall	Minimum	Maximum	Average	
Section 1	53	135	105	Over 18 Month Cable Route Construction Programme
Section 2	55	110	70	Over 18 Month Cable Route Construction Programme
Section 3	141	110	65	Over 18 Month Cable Route Construction Programme
Section 4	0	97	47	Over 18 Month Cable Route Construction Programme
Section 5	22	110	72	Over 18 Month Cable Route Construction Programme
Section 6	89	154	122	Over 18 Month Cable Route Construction Programme
Section 7	0	91	52	Over 18 Month Cable Route Construction Programme
Section 8	0	91	52	Over 18 Month Cable Route Construction Programme
Section 9	0	41	41	Over 18 Month Cable Route Construction Programme
Section 10	77	154	113	Over 18 Month Cable Route Construction Programme
Section 16A	0	91	35	Over 18 Month Cable Route Construction Programme
Section 16B	0	104	48	Over 18 Month Cable Route Construction Programme
Section 14(Including 400kv)	0	97	56	Over 18 Month Cable Route Construction Programme
Substation zone	86	231	129	Over 45 Month Substation Construction Programme
Section 15 (400kv)	0	91	55	Over 18 Month Cable Route Construction Programme
Total	86	1436	507	Over 45 Month Substation Construction Programme
Total	643	1436	1309	Over 18 Month Cable Route Construction Programme

Day	Movements
1	100
2	100
3	100
4	100
5	100
6	100
7	100
8	100
9	100
10	100
11	100
12	100
13	100
14	1000
15	1000
16	1000
17	1000
18	1000
19	1000
20	1000
21	1000
22	1000
23	1000
24	1400
25	1400
26	1400
27	1400
28	1000
29	1000
30	1000
31	1000
32	100
33	100
34	100
35	100
36	100
37	100
38	100
39	100
40	100
41	100
42	100
43	100
44	100
45	100



Vendor Coversheet

Project Name:	Dogger Bank South (DBS)	Package No:	WP7

Document Title:	Landfall and Onshore Cable Route Construction Metrics - Route 3 to Zone 1 HVDC Electrical Scenario
Classification:	Confidential

Vendor Doc. No:	Landfall and Onshore Cable Route Construction Metrics - Route 3 to Zone 1 HVDC Electrical Scenario	Vendor Revision:	01
Date:	29 November 2022	Pages:	89

Employers Doc. No:	004603982-01	Employer Revision:	1
Document Status:	For Review and Approval		

Registered office:
Dogger Bank South Offshore Wind Farm
RWE Renewables UK Ltd
Windmill Hill Business Park
Whitehill Way, Swindon, SN5 6PB

Client RWE
Project Dogger Bank South Offshore Wind Farm
Document Title Landfall and Onshore Cable Route Construction Metrics - Route 3 to Zone 1 HVDC Electrical Scenario
RWE Ecodoc Reference 004603982-01
Version 1.0
Date 29/11/2022

Prepared By Peter Macfarlane
 Principal Engineering Geologist
Reviewed By Aidan Harber
 Technical Director
Approved By Aidan Harber
 Technical Director



Contents
Appendix A Material Requirements Per Section (Onsite Deliveries / Offsite Removal)
Appendix B Substation Foundation and Superstructure Material Requirements
Appendix C Material Stockpile, Import and Export Requirements
Appendix D Compound Welfare Requirements
Appendix E Programme and Average Monthly Vehicle Movements
Appendix F Overall Vehicle Movements
Appendix G Indicative Construction Plant Noise Assessment
Appendix H Images Showing Sections of Onshore Cable Route

Notes:

1. Construction Metrics based on Wardell Armstrong Shapefile - 100m Cable Corridor Rev E - Dated 08.11.2022 and substation footprint located within substation zone 1. Any changes in the routeing of the Onshore Cable Corridor may result in updates of these construction metrics.
2. Tabs in red are working and only used to populate other sections of the metrics and not for reference within main construction metrics output
3. No bulking or compaction ratios have been considered within the calculation of waste soils generated and removed from site or import of materials required as conservative bulk density values. Bulking factor of 1.5 has been used to determine volumes of material stockpile onsite.
4. Sections referred to in these construction metrics are presented within Wardell Armstrong Shapefile - Sections of Onshore Cable Route Rev E - Dated 08.11.2022 with screen shots of sections presented in Appendix H.
5. Short HDD of minor obstacles has not been considered separate to trenching within construction metrics as direct trenching considered to be worst case assessment in terms of materials volumes and traffic movements associated with these crossings.
6. Construction metrics are for single project only and based on worst case requirements for HVDC electrical arrangement.
7. Substation foundation assessment is based on assumption that ground conditions are suitable for a shallow foundation solution.
8. Substation foundation assessment is based on worst case HVDC design information provided by Mott MacDonald.
9. Programme presented is indicative only and final construction programme would not be confirmed until detailed design.
10. Section 1 of onshore cable route includes metrics for Landfall Operations including landfall HDD and construction of Transition Joint Bay.
11. Within construction metrics it has been assumed that there is no reuse of haul road materials within / between sections of the onshore cable route. Some reuse of materials for HDDs has been considered within sections.
12. HDD crossings identified are those presented within Wardell Armstrong Obstacle Crossing Register 004491138-03 with obstacle Name and ID included within construction metrics to allow referencing.

[illegible]

3.54	Jointing key slab thickness	m	0.15	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.55	Jointing key slab concrete volume	m ³	3.4	Calculated (3.54 x 3.54)
3.56	Jointing key steel reinforcement	Tonnes	0.234	Calculated (3.54 x 3.55)
3.57	Depth of C&A within joint key location	m	0.2	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.58	Depth of selected steel within joint key location	m	0.44	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.59	Depth of steel graded steel	mm	18	Assumed
3.60	Area of cable protection box	m ²	24	Calculated (3.53 x 3.52)
3.61	Depth to base of section key installed underground infrastructure	m	1.35	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.62	Volume of binding concrete required for below concrete base / working area per setting bar	m ³	5.25	Calculated from Drawing ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.63	Number of all link boxes to be constructed per joint bar	-	1	Maximum identified for HVDC Arrangement in PCE 0039706-12
3.64	All Link Box (with construction blocks)	m	4.43	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.65	All Link Box height construction blocks	m	1.7	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.66	All Link Box width construction blocks	m	2.63	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.67	All Link Box width underground infrastructure only	m	2.5	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.68	All Link Box height underground infrastructure only	m	1.65	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.69	All Link Box width underground infrastructure only	m	4	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.70	All Link Box width surface area	m	30	Calculated (3.67 x 3.55)
3.71	All Link Box slab thickness	m	0.3	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.72	All Link Box slab concrete volume	m ³	3	Calculated (3.71 x 3.71)
3.73	All Link Box wall concrete volume	m ³	8.053	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.74	All Link Box base and wall steel reinforcement	Tonnes	0.6442/0.5	Calculated (3.73 x 3.74 x 3.75)
3.75	Number of Link box top	-	4	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.76	Volume of 150,000 lbs per delivery	-	4	Assumed
3.77	Volume of binding concrete required for below concrete base / working area per link box	m ³	1.35	Calculated from Drawing ECI 3554-GE-1022 (Ecodec Ref - 004437675-01)
3.78	Indicative Vertical Movement Allowance for cable joint kits and link box materials per jointing bar	-	2	Assumed
3.79	Width of final road at bottom	m	6	Drawings ECI 3554-GE-1021 (Ecodec Ref - 004437673-01)
3.8	Width of final road at base	m	8.4	Drawings ECI 3554-GE-1021 (Ecodec Ref - 004437673-01)
3.81	Indicative distance between Link-box	m	150	Maximum identified in PCE 0039706-12
3.82	Length of link-box (without blocks)	m	30	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437674-01)
3.83	Width of blocks (without blocks)	m	3	Drawings ECI 3554-GE-1022 (Ecodec Ref - 004437674-01)
3.84	Additional Base area of blocks (without blocks)	m ²	195.1	Calculated from Drawing ECI 3554-GE-1032 (Ecodec Ref - 00438050-02)
3.85	Volume of 1 ton 1 Stone required per concrete base	m ³	58.3	Calculated (3.84 x 3.75)
3.86	Volume of Concrete Base Stone Required per concrete base	m ³	6	Calculated (3.84 x 3.75)
3.87	Width of Long / Moderate / HCD Compound (Entry and Exit)	m	60	Maximum identified for HVDC Arrangement in Summary of Cable Spacings 04382599-01. Actual HCD separations and therefore compound dimensions would be dependent on final electrical solution. Indicative arrangement of compound shown in drawing ECI 3554-GE-1027 (Ecodec Ref - 004491142-01)
3.88	Length of Long / Moderate / HCD Entry PG Compound	m	60	Maximum identified in PCE 0039706-12 in Site. Drawing ECI 3554-GE-1027 (Ecodec Ref - 004491142-01) identifies 60m may be required
3.89	Length of Long / Moderate / HCD Exit PG Compound	m	30	Drawings ECI 3554-GE-1027 (Ecodec Ref - 004491142-01)
3.90	Width of Short HCD Compound (Entry and Exit)	m	-	N/A
3.91	Length of Short HCD Entry PG Compound	m	-	N/A
3.92	Length of Short HCD Exit PG Compound	m	-	N/A
3.93	Width of Minor HCD Compound (Entry and Exit)	m	36	Maximum identified for HVDC Arrangement in Summary of Cable Spacings 04382599-01. Actual HCD separations and therefore compound dimensions would be dependent on final electrical solution. Indicative arrangement of compound shown in drawing ECI 3554-GE-1028 (Ecodec Ref - 004491141-01)
3.94	Length of Minor HCD Entry PG Compound	m	30	Maximum identified in PCE 0039706-12. Drawing ECI 3554-GE-1028 (Ecodec Ref - 004491141-01)
3.95	Length of Minor HCD Exit PG Compound	m	30	Drawings ECI 3554-GE-1028 (Ecodec Ref - 004491141-01)
3.96	Number of HVDCs per circuit	-	2	Value for HVDC circuit as per Summary of Cable Spacings 04382599-01. Each HVDC circuit requires 2 x HVDCs per circuit.
3.97	HCD nominal diameter for HVDC circuit and PG Dual Bundle	mm	116	Indicative Value - Based on Design
3.98	Volume of steel that required per metre length of base	m ³	0.92	Indicative Value - HVDC design further HCD Design
3.99	Volume of steel that required from the one metre length of base	m ³	1.4	Indicative Value - HVDC design further HCD Design
3.100	Rebar/steel required per metre length of base	kg	183	Indicative Value - HVDC design further HCD Design
3.101	Concrete HCD dual diameter (D1)	m	0.105	Maximum identified in PCE 0039706-12
3.102	Concrete HCD dual diameter (D2)	m	0.315	Identified by NVE via email in PM from LB of 10/05/2022
3.103	Concrete HCD dual diameter (D3)	m	0.5	Assumed
3.104	Concrete HCD dual diameter (D4)	m	0.5	Assumed
3.105	No of 240 T2 dual widths per delivery	-	100	Assumed
3.106	Concrete HCD dual diameter (D5)	m	0.5	Assumed
3.107	No of 240 T2 dual widths per delivery	-	20	Indicative Layout Shown in Drawing ECI 3554-GE-1027 (Ecodec Ref - 004491142-01)
3.108	Concrete HCD dual diameter (D6)	m	0.15	Indicative Layout Shown in Drawing ECI 3554-GE-1028 (Ecodec Ref - 004491141-01)
3.109	Volume of concrete / HCD base / infrastructure per metre run of	m ³	6.72	Calculated from Drawing ECI 3554-GE-1021 (Ecodec Ref - 004437673-01)
3.110	Diameter of perforated pipe within drainage dishes	m	0.15	Drawings ECI 3554-GE-1021 (Ecodec Ref - 004437673-01)
3.111	Perforated pipe amount	m	6	Indicative Layout Shown in Drawing ECI 3554-GE-1021 (Ecodec Ref - 004437673-01)
3.112	No of perforated pipe section lengths per delivery	-	33	Indicative Layout Shown in Drawing ECI 3554-GE-1021 (Ecodec Ref - 004437673-01)
3.113	Cable Marker Block Separation	m	12	Assumed
3.114	Number of Cable Marker Blocks Per Delivery	m	112	Assumed. 121 delivery and 103 Blocks https://www.powerandbooks.com/wp-content/uploads/2018/10/Concrete-Marker-Blocks.pdf

Reference	Substation (Feed Information)	Units	Value	Source/Comments
6.02	Depth of Substation Ground	m	244	Maximum identified for 250°C Arrangement in POC 03/19/1006-12.
6.03	Depth of Substation Ground	m	244	Maximum identified for 250°C Arrangement in POC 03/19/1006-12.
6.04	Depth of surface concrete	m	0.15	Concrete for 100 kV and 138 kV slab
6.05	Depth of surface concrete	m	0.15	Concrete for 100 kV and 138 kV slab
6.06	Indication Levels of Analysis Based Within Substation Component		3585	Extracted from MITI MegaDesign Drawings 0439340-02. Based on HVDC Level, would vary for other substation layouts
6.07	Area of Armature Surface Within Substation Component	m ²	7525	Based on MITI MegaDesign Drawings 0439340-02. Based on HVDC Level. Would vary for other substation layouts
6.08	Area of Armature Surface Within Substation Component	m ²	7525	Based on MITI MegaDesign Drawings 0439340-02. Based on HVDC Level. Would vary for other substation layouts
6.09	Substation TOC length	m	244	Maximum identified for 250°C Arrangement in POC 03/19/1006-12.
6.10	Substation TOC length	m	244	Maximum identified for 250°C Arrangement in POC 03/19/1006-12.
6.11	Substation TOC length	m	244	Maximum identified for 250°C Arrangement in POC 03/19/1006-12.
6.12	Substation TOC Area	m ²	50000	Maximum identified for 250°C Arrangement in POC 03/19/1006-12.
6.13	Substation TOC Area	m ²	50000	Maximum identified for 250°C Arrangement in POC 03/19/1006-12.
6.14	Substation TOC Area	m ²	19000	Calculated (19.2 x 13.125) of total area to allow for potential stockpiles
6.15	Substation TOC Area	m ²	19000	Calculated (19.2 x 13.125) of total area to allow for potential stockpiles
6.16	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.17	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.18	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.19	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.20	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.21	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.22	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.23	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.24	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.25	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.26	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.27	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.28	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.29	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.30	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.31	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.32	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.33	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.34	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.35	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.36	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.37	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.38	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.39	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.40	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.41	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.42	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.43	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.44	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.45	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.46	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.47	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.48	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.49	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.50	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.51	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.52	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.53	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.54	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.55	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.56	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.57	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.58	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.59	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.60	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.61	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.62	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.63	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.64	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.65	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.66	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.67	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.68	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.69	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.70	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.71	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.72	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.73	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.74	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.75	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.76	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.77	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.78	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.79	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.80	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.81	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.82	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.83	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.84	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.85	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.86	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.87	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.88	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.89	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.90	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.91	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.92	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.93	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.94	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.95	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.96	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.97	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.98	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.99	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)
6.100	Substation TOC Area	m ²	1.42	(Marshalls Creek and Dransoff)

[illegible]

Total Vehicle Movements (without miscellaneous allowances)	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (including 400V)	Substation Zone	Section 18 (400V)
Access from Public Road to HOV movements	278	268	250	1,704	2,510	2,500	278	2,24	291	1,834	694	694	1,028	13	213
Total east-west construction HOV movements	278	268	250	1,704	2,510	2,500	278	2,24	291	1,834	694	694	1,028	13	213
Total TOC Construction HOV movements	720	360	360	360	360	634	360	360	360	992	360	360	360	2,008	360
Total Terrestrial Electric Cables HOV Movements	14	12	6	10	12	8	6	4	2	8	2	2	8	8	8
Total Terrestrial Fiber Cables HOV Movements	14	12	6	10	12	8	6	4	2	8	2	2	8	8	8
Total Terrestrial Earth Cables HOV Movements	14	12	6	10	12	8	6	4	2	8	2	2	8	8	8
Total Protected Cover HOV movements	431	417	31	121	121	231	21	16	12	25	11	22	11	13	22
Total special HOV movements	1,694	1,393	483	1,921	1,921	1,921	483	483	483	1,684	483	483	329	329	483
Total cables that HOV movements	49	16	41	44	44	47	20	15	32	14	28	11	28	11	11
Left-turn HOV movements	150	0	0	100	100	0	100	0	0	0	0	0	0	0	0
Transition from HOV movements	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Left-turn HOV movements	1,368	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local / Moderate On-ramps HOV On-ramp Compound HOV movements	0	0	0	532	287	340	0	0	0	246	0	287	0	0	0
Local / Moderate On-ramps HOV Exit to Compound HOV movements	0	0	0	0	0	121	0	0	0	0	0	0	121	0	0

Minor Channel DCO Drifts, Compound HSIV movements	229	0	0	0	154	229	0	0	0	448	0	154	483	0	448
Minor Channel DCO Cut Compound HSIV movements	157	0	0	0	0	157	0	0	0	157	0	157	0	0	157
Auxiliary Bypass from Lower FWC Network HSIV movements	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0
Compound Road Road HSIV Movements	0	0	0	0	0	0	0	0	0	0	0	0	0	478	0
Substation Civil Engineering HSIV Movements	0	0	0	0	0	0	0	0	0	0	0	0	0	8,183	0
Grand total deliveries	7,292	4,887	3,834	2,539	4,647	5,319	2,732	3,133	1,859	4,836	1,769	3,289	2,863	9,237	3,186
Grand total (New new movements)	14,588	9,114	7,268	5,078	9,294	10,638	5,464	6,266	3,618	9,672	3,498	6,578	5,726	18,473	6,332

Access From Public Road Construction	Units	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (Including 4036V)	Substation Zone	Section 18 (4036V)
Volume of material	m ³	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Area of asphalt surface	m ²	107	107	107	107	107	107	107	107	107	214	107	107	107	107	107
Volume of 100-ton stone (Type 1)	m ³	23	23	23	23	23	23	23	23	23	46	23	23	23	23	23
Mass of Type 1 stone required	Tonnes	42	42	42	42	42	42	42	42	42	84	42	42	42	42	42
Volume of 100-ton stone deliveries	m ³	3	3	3	3	3	3	3	3	3	6	3	3	3	3	3
Volume of Asphalt	m ³	27	27	27	27	27	27	27	27	27	53	27	27	27	27	27
Mass of Asphalt	Tonnes	63	63	63	63	63	63	63	63	63	126	63	63	63	63	63
Volume of Asphalt Deliveries	m ³	4	4	4	4	4	4	4	4	4	7	4	4	4	4	4
Number of HEC 300 internal cable joints	-	20	20	20	20	20	20	20	20	20	58	20	20	20	20	20
Number of HEC 300000 joints	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total number of joints of joints	-	2	2	2	2	2	2	2	2	2	4	2	2	2	2	2
Number of earth deliveries	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume of concrete required	m ³	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	3.5	1.7	1.7	1.7	1.7	1.7
Volume of concrete deliveries	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume of mortar required	m ³	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.22	0.11	0.11	0.11	0.11	0.11
Mass of cement required	Tonnes	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.02	0.02	0.02	0.02	0.02
Mass of fine aggregate	Tonnes	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.02	0.02	0.02	0.02	0.02
Mass of sand required	Tonnes	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.09	0.05	0.05	0.05	0.05	0.05
Number of cement joints required	-	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1
Number of joints delivered	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of joints delivered	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume of Topsoil to be removed from site (development access only)	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of Topsoil to be removed from site (development access only)	Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volume of Topsoil to be removed from site (development access only)	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Removal of temporary access movements	-	10	10	10	10	10	10	10	10	10	15	10	10	10	10	10
Number of HSIV movements	-	20	20	20	20	20	20	20	20	20	30	20	20	20	20	20

Local Road Construction	Units	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (Including 4036V)	Substation Zone	Section 18 (4036V)
Area of asphalt surface	m ²	91	91	91	91	91	91	91	91	91	182	91	91	91	91	91
Volume of 100-ton stone required	m ³	21,294	21,294	21,294	21,294	21,294	21,294	21,294	21,294	21,294	42,588	21,294	21,294	21,294	21,294	21,294
Mass of Type 1 stone required	Tonnes	20,894	20,894	20,894	20,894	20,894	20,894	20,894	20,894	20,894	41,788	20,894	20,894	20,894	20,894	20,894
Volume of 100-ton stone deliveries	m ³	3,948	3,948	3,948	3,948	3,948	3,948	3,948	3,948	3,948	7,896	3,948	3,948	3,948	3,948	3,948
Volume of Crushed Run stone required	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of Crushed Run stone required	Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volume of Crushed Run stone deliveries	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Surface area	m ²	31,488	31,188	22,848	13,961	26,878	30,933	15,952	20,152	8,921	23,937	8,921	15,152	14,696	7,766	18,482
Mass of gravel required	Tonnes	7,81	8,88	5,61	3,49	6,36	7,49	3,81	4,91	2,25	5,89	2,25	4,00	3,24	1,71	4,67
Number of gravel deliveries	-	8	8	5	3	7	8	4	5	3	8	3	5	4	2	5
Mass of gravel required	Tonnes	4,20	3,74	2,74	1,65	3,47	3,80	1,90	2,42	1,07	2,87	1,03	2,18	1,78	0,93	2,22
Number of gravel deliveries	-	5	5	4	2	5	5	3	3	2	4	2	3	3	2	3
Length of stock and fence required	m	5,268.0	5,198.0	5,088.0	3,068.0	7,598.0	7,868.0	4,188.0	5,268.0	2,368.0	6,268.0	2,268.0	4,798.0	3,998.0	2,098.0	4,898.0
Number of Stocked fence deliveries	-	2	2	2	1	2	2	1	2	1	2	1	2	1	1	2
Volume of drainage stone required	m ³	3,312	2,918	2,131	1,298	2,700	2,868	1,478	1,872	868	2,332	868	1,662	1,368	720	1,728
Mass of drainage stone required	Tonnes	4,088	4,374	3,197	1,644	4,050	4,212	2,214	2,868	1,242	3,448	1,188	2,022	1,680	864	2,022
Number of drainage stone deliveries	-	248	219	168	103	263	271	131	351	161	463	168	327	268	139	359
Length of perforated pipe required	m	5,260	8,100	5,920	7,860	7,860	4,300	5,200	2,300	2,300	6,200	2,300	4,700	3,800	2,000	4,800
Number of perforated pipe deliveries	-	47	41	39	19	38	48	21	27	12	32	12	24	20	11	25
Number of local road movements	-	1,598	1,194	879	554	1,198	1,198	608	772	344	917	334	664	564	299	798
Number of HSIV movements	-	2,718	2,388	1,730	1,084	2,210	2,380	1,218	1,544	688	1,634	684	1,392	1,128	598	1,418

[illegible]

Total Volume of borrow concrete	m ³	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volume of borrow concrete delivered	m ³	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total CBM volume	m ³	115.52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CBM Tonnage	Tonnes	242,432	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CBM number of deliveries	-	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Indicative Vehicle movement Allowance for cable port kits and link box materials	-	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of HGV movements	-	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Landfill HDOs	Units	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (including 408V)	Substation Zone	Section 18 (408V)
Number of Landfill HDO locations	m ²	6250	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Compound Surface Area	m ²	2,888	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volume of zone 1 stone required	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of zone 1 stone required	Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of zone 1 stone deliveries	-	288	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volume of Crusher Run stone required	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of Crusher Run stone required	Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Crusher Run Stone deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of gravel required	Tonnes	1,24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Number of gravel deliveries	-	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of geotextile required	Tonnes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Number of geotextile deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Length of security fences required	m	220	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of fences joints required	-	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of fences corner deliveries	-	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Removal of compound movements	-	273	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Length of Landfill HDO	m	1400	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Number of HDOs	m	230	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total length of HDO	m	4000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volume of excavated material	m ³	1227.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Netton Soil Tonnage	Tonnes	2654.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Number of excavated material deliveries (off site)	-	123	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drill fluid required	m ³	12264.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Number of water deliveries	-	409	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volume of drill fluid recovered from site	m ³	5880.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Number of waste drill fluid deliveries	-	199	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total mass of bentonite required for drilling	kg	401400.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Number of bags required	-	1666.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Number of bentonite deliveries	-	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of HGV movements	-	1368	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Long / Moderate HDO Drilling Compound	Units	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (including 408V)	Substation Zone	Section 18 (408V)
Perimeter of zone 1 / Moderate HDO Drilling Compound	m	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Compound Surface Area	m ²	0	0	0	846	3120	3120	0	8460	0	3120	0	3120	0	0	0
Volume of sub-base stone required	m ³	0	0	0	2184	11000	11000	0	21184	0	11000	0	11000	0	0	0
Mass of sub-base stone required	Tonnes	0	0	0	4,040	2,020	2,020	0	4,040	0	2,020	0	2,020	0	0	0
Number of sub-base stone deliveries	-	0	0	0	203	102	102	0	203	0	102	0	102	0	0	0
Volume of Crusher Run stone required	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of Crusher Run stone required	Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Crusher Run Stone deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of gravel required	Tonnes	0.00	0.00	0.00	1.37	0.69	0.69	0.00	1.37	0.00	0.69	0.00	0.69	0.00	0.00	0.00
Number of gravel deliveries	-	0	0	0	2	1	1	0	2	0	1	0	1	0	0	0
Mass of geotextile required	Tonnes	0.00	0.00	0.00	0.75	0.37	0.37	0.00	0.75	0.00	0.37	0.00	0.37	0.00	0.00	0.00
Number of geotextile deliveries	-	0	0	0	1	1	1	0	1	0	1	0	1	0	0	0
Length of security fences required	m	0	0	0	448	224	224	0	448	0	224	0	224	0	0	0
Number of fences joints required	-	0	0	0	94	48	48	0	94	0	48	0	48	0	0	0
Number of fences corner deliveries	-	0	0	0	2	1	1	0	2	0	1	0	1	0	0	0
Removal of compound movements	-	0	0	0	208	104	104	0	208	0	104	0	104	0	0	0
Combined length of zone 1 / moderate HDOs entries in this section	m	0	0	0	600	400	100	0	400	0	100	0	400	0	0	0
Total Number of HDOs	m	0	0	0	1200	800	300	0	600	0	300	0	800	0	0	0
Total length of HDO	m	0	0	0	2500	800	300	0	3600	0	800	0	800	0	0	0
Volume of excavated material	m ³	0.00	0.00	0.00	86.37	86.37	86.37	0.00	172.74	0.00	86.37	0.00	86.37	0.00	0.00	0.00
Total Netton Soil Tonnage	Tonnes	0.0	0.0	0.0	264.3	166.3	73.8	0.0	269.3	0.0	73.8	0.0	166.3	0.0	0.0	0.0
Number of excavated material deliveries (off site)	-	0	0	0	15	10	4	0	15	0	4	0	10	0	0	0
Drill fluid required for drilling	m ³	0	0	0	1702	1108	438	0	1314	0	438	0	1108	0	0	0
Number of water deliveries	-	0	0	0	59	39	15	0	54	0	15	0	39	0	0	0
Volume of drill fluid recovered from site	m ³	0	0	0	860	560	210	0	630	0	210	0	560	0	0	0
Number of waste drill fluid deliveries	-	0	0	0	29	19	7	0	21	0	7	0	19	0	0	0
Total mass of bentonite required for drilling	kg	0	0	0	70200	46000	17000	0	52600	0	17000	0	46000	0	0	0
Number of bags required	-	0	0	0	2808	1872	709	0	2108	0	702	0	1872	0	0	0
Number of bentonite deliveries	-	0	0	0	14	9	4	0	11	0	4	0	9	0	0	0
Number of HGV movements	-	0	0	0	532	287	240	0	504	0	240	0	287	0	0	0

Long / Moderate HSD Exit PI Compound		Units	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (Including 408V)	Substation Zone	Section 18 (408V)
Number of Lane / Moderate Exit PI Compound		mm	0	0	1	0	1	1	1	1	2	0	0	0	0	0	0
Component Surface Area		mm	0	0	1560	0	1560	1560	1560	1560	3120	0	0	0	1560	0	0
Volume of Sub-base stone required		mm	0	0	1461	0	1461	1461	1461	1461	0	0	0	0	1461	0	0
Mass of sub-base stone required		Tonnes	0	0	1.710	0	1.710	1.710	1.710	1.710	0	0	0	0	1.710	0	0
Number of sub-base stone deliveries		-	0	0	81	0	81	81	81	81	0	0	0	0	81	0	0
Volume of Crusher Run stone required		mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of Crusher Run stone required		Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Crusher Run Stone deliveries		-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of gravel required		Tonnes	0.00	0.00	0.34	0.00	0.34	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00
Number of gravel deliveries		-	0	0	1	0	1	1	0	0	0	0	0	0	1	0	0
Mass of sandstone required		Tonnes	0.00	0.00	0.19	0.00	0.19	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00
Number of sandstone deliveries		-	0	0	1	0	1	1	0	0	0	0	0	0	1	0	0
Length of security fence required		m	0	0	184	0	184	184	368	368	0	0	0	0	184	0	0
Number of fence posts required		-	0	0	47	0	47	47	94	94	0	0	0	0	47	0	0
Number of fencing panel deliveries		-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Removal of compound movements		-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Combined length of lane / moderate HSD entries in this section		m	0	0	54	0	54	54	108	108	0	0	0	0	54	0	0
Total Number of HSDs		mm	0	0	2	0	2	2	0	0	2	0	0	0	2	0	0
Total length of EC-HDPE ducts Required		m	0	0	600	0	600	600	600	600	0	0	0	0	600	0	0
Number of EC-HDPE ducts required		-	0	0	180	0	180	180	0	0	120	0	0	0	180	0	0
Number of EC-HDPE duct deliveries		-	0	0	18	0	18	18	0	0	10	0	0	0	18	0	0
Length of FO-HDPE ducts required		m	0	0	1,350	0	450	1,350	1,350	0	600	0	0	0	1,350	0	0
Number of FO-HDPE ducts required		-	0	0	14	0	5	14	14	0	9	0	0	0	12	0	0
Number of FO-HDPE duct deliveries		-	0	0	1	0	1	1	1	0	1	0	0	0	1	0	0
Number of HDV movements		-	0	0	124	0	114	123	224	9	221	0	0	0	123	0	0

Minor HSD Driveway Compound		Units	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (Including 408V)	Substation Zone	Section 18 (408V)
Number of Lane / Minor HSD Driveway Compound		mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Component Surface Area		mm	3600	0	0	0	1800	3600	0	0	0	1400	0	1800	1400	0	1400
Volume of Sub-base stone required		mm	3,250	0	0	0	1,600	3,200	0	0	0	1,200	0	1,600	1,200	0	1,200
Mass of sub-base stone required		Tonnes	3,831	0	0	0	1,896	2,331	0	0	0	1,497	0	1,896	1,497	0	1,497
Number of sub-base stone deliveries		-	117	0	0	0	59	117	0	0	0	59	0	59	59	0	59
Volume of Crusher Run stone required		mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of Crusher Run stone required		Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Crusher Run Stone deliveries		-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of gravel required		Tonnes	0.79	0.00	0.00	0.00	0.40	0.79	0.00	0.00	0.00	1.10	0.00	0.40	1.10	0.00	1.10
Number of gravel deliveries		-	1	0	0	0	1	1	0	0	0	2	0	1	2	0	2
Mass of sandstone required		Tonnes	0.43	0.00	0.00	0.00	0.22	0.43	0.00	0.00	0.00	0.66	0.00	0.22	0.66	0.00	0.66
Number of sandstone deliveries		-	1	0	0	0	1	1	0	0	0	1	0	1	1	0	1
Length of security fence required		m	344	0	0	0	172	344	0	0	0	518	0	172	518	0	518
Number of fence posts required		-	86	0	0	0	43	86	0	0	0	129	0	43	129	0	129
Number of fencing panel deliveries		-	1	0	0	0	1	1	0	0	0	2	0	1	2	0	2
Removal of compound movements		-	120	0	0	0	62	120	0	0	0	180	0	62	180	0	180
Combined length of lane / moderate HSD entries in this section		m	360	0	0	0	150	360	0	0	0	450	0	150	550	0	450
Total Number of HSDs		mm	2	0	0	0	2	2	0	0	0	2	0	2	2	0	2
Total length of HSD		m	600	0	0	0	300	600	0	0	0	300	0	300	1100	0	900
Volume of concrete required		mm	1,110	0.00	0.00	0.00	360	1,110	0.00	0.00	0.00	1,110	0.00	360	1,110	0.00	1,110
Total Number of concrete deliveries		Tonnes	147.3	0.0	0.0	0.0	44.3	147.3	0.0	0.0	0.0	220.0	0.0	44.3	220.0	0.0	220.0
Number of concrete deliveries (off site)		-	0	0	0	0	4	0	0	0	0	14	0	4	14	0	14
Drill Risk required for drilling		mm	876	0	0	0	438	876	0	0	0	1314	0	438	1606	0	1314
Number of water deliveries		-	30	0	0	0	15	30	0	0	0	44	0	15	54	0	44
Volume of dirt fill removed from site		mm	420	0	0	0	210	420	0	0	0	630	0	210	770	0	630
Number of waste dirt fill deliveries		-	14	0	0	0	7	14	0	0	0	21	0	7	28	0	21
Total mass of materials required for drilling		kg	35100	0	0	0	17550	35100	0	0	0	52650	0	17550	64350	0	52650
Number of bags required		-	1404	0	0	0	702	1404	0	0	0	2106	0	702	2514	0	2106
Number of materials deliveries		-	7	0	0	0	4	7	0	0	0	11	0	4	11	0	11
Number of HDV movements		-	299	0	0	0	154	299	0	0	0	446	0	154	467	0	446

Minor HSD Exit PI Compound		Units	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (Including 408V)	Substation Zone	Section 18 (408V)
Number of Lane / Minor HSD Exit PI Compound		mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Component Surface Area		mm	2160	0	0	0	1080	2160	0	0	0	2160	0	1080	2160	0	2160
Volume of Sub-base stone required		mm	1,960	0	0	0	980	1,960	0	0	0	1,960	0	980	1,960	0	1,960
Mass of sub-base stone required		Tonnes	1,399	0	0	0	690	1,399	0	0	0	1,399	0	690	1,399	0	1,399
Number of sub-base stone deliveries		-	78	0	0	0	39	78	0	0	0	78	0	39	78	0	78
Volume of Crusher Run stone required		mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of Crusher Run stone required		Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Crusher Run Stone deliveries		-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass of gravel required		Tonnes	0.48	0.00	0.00	0.00	0.24	0.48	0.00	0.00	0.00	0.48	0.00	0.24	0.48	0.00	0.48
Number of gravel deliveries		-	1	0	0	0	1	1	0	0	0	1	0	1	1	0	1
Mass of sandstone required		Tonnes	0.26	0.00	0.00	0.00	0.13	0.26	0.00	0.00	0.00	0.26	0.00	0.13	0.26	0.00	0.26
Number of sandstone deliveries		-	1	0	0	0	1	1	0	0	0	1	0	1	1	0	1
Length of security fence required		m	264	0	0	0	132	264	0	0	0	264	0	132	264	0	264
Number of fence posts required		-	76	0	0	0	38	76	0	0	0	76	0	38	76	0	76
Number of fencing panel deliveries		-	1	0	0	0	1	1	0	0	0	1	0	1	1	0	1
Removal of compound movements		-	72	0	0	0	38	72	0	0	0	72	0	38	72	0	146
Combined length of lane / moderate HSD entries in this section		m	300	0	0	0	150	300	0	0	0	300	0	150	300	0	300
Total Number of HSDs		mm	2	0	0	0	2	2	0	0	0	2	0	2	2	0	2
Total length of EC-HDPE ducts Required		m	600	0	0	0	300	600	0	0	0	600	0	300	600	0	600
Number of EC-HDPE ducts required		-	180	0	0	0	90	180	0	0	0	120	0	90	180	0	180
Number of EC-HDPE duct deliveries		-	18	0	0	0	9	18	0	0	0	10	0	9	18	0	18
Length of FO-HDPE ducts required		m	600	0	0	0	450	600	0	0	0	600	0	450	600	0	2,100
Number of FO-HDPE ducts required		-	14	0	0	0	5	14	0	0	0	9	0	5	14	0	21
Number of FO-HDPE duct deliveries		-	1	0	0	0	1	1	0	0	0	1	0	1	1	0	1
Number of HDV movements		-	187	0	0	0	82	187	0	0	0	187	0	84	187	0	314

Number of Trenches/Fibre Cable Drums Delivered		-	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Number of Trenches/Fibre Cable Drums Delivered		-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total number of protective covers		-	0	0	0	0	0	0	0	0	0	0	0	0	0	900	0
Number of protective cover deliveries		-	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Number of 100mm 150V PVC duct packs required		-	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Number of 20mm sections duct packs required		-	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Number of 20mm water zone packs required		-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of 20mm water zone packs delivered		-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of 20mm duct deliveries		-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of HDV movements		-	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0

Permanent Head Road Construction	Units	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (Including 408V)	Substation Zone	Section 18 (408V)
Head road length	m	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
Head road width	m	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Surface area	m ²	0	0	0	0	0	0	0	0	0	0	0	0	0	5,600	0
Volume of Sub-base above for road and sections (Type 1)	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	3,200	0
Mass of Type 1 above required	Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	2,237	0
Number of Type 1 above deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	112	0
Volume of Asphalt	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	1,400	0
Mass of Asphalt	Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	1,354	0
Number of Asphalt Deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	166	0
Number of K2 Street Kerbs	-	0	0	0	0	0	0	0	0	0	0	0	0	0	1,533	0
Total number of kerbs of kerbs	-	0	0	0	0	0	0	0	0	0	0	0	0	0	06	0
Number of kerb deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0
Maximum volume of concrete required for kerbs	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	111	0
Number of concrete deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0

Substation Compound Earthworks, Road and Hardstandings	Units	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (including 40kV)	Substation Zone	Section 18 (400kV)
Number of Substation Compound Components	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Area of Asphalt Surface Within Substation Compound	m ²	0	0	0	0	0	0	0	0	0	0	0	0	0	2,685	0
Volume of Sub-base stone for Asphalt and Topsoil	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	1,985	0
Area of Type 1 stone for asphalt cover	Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	2,682	0
Area of concrete slab	m ²	0	0	0	0	0	0	0	0	0	0	0	0	0	56,491	0
Volume of Sub-base stone for concrete slab (Type 1)	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	8,474	0
Area of Type 1 stone for Sub-base	Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	11,476	0
Number of Type 1 stone deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	931	0
Volume of Asphalt	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	1,981	0
Mass of Asphalt	Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	4,470	0
Number of Asphalt Deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	234	0
Volume of concrete required	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	8,474	0
Number of Concrete Deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	1,453	0
Total Sheet reinforcement (t)	Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	560.78725	0
Number of steel deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0
Volume of Topsoil to be removed from Substation Site (earthworks)	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	21,580	0
Mass of Topsoil to be removed from site	Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	20,241	0
Number of Topsoil removal Deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	1,463	0
Volume of Sub-soil to be imported to Substation Site for (earthworks and drainage)	m ³	0	0	0	0	0	0	0	0	0	0	0	0	0	19,959	0
Mass of Sub-soil to be imported from site	Tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	19,959	0
Number of Sub-soil transport movements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,998	0
Length of permanent security fence required	m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,016.0	0.0
Number of fencing panels delivered	-	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Length of Permanent Surface Water Drainage	m	0	0	0	0	0	0	0	0	0	0	0	0	0	740	0
Number of Surface Water Drainage Pipes required	-	0	0	0	0	0	0	0	0	0	0	0	0	0	121	0
Number of Surface Water Drainage Pipe Deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	53	0
Number of Drainage Markings Required	-	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
Number of Drainage Marking Deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0
Number of Drainage Hardware Required	-	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Number of Drainage Hardware Deliveries	-	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Number of HGV movements	-	0	0	0	0	0	0	0	0	0	0	0	0	0	6,153	0

Activity	Units	Value	Comment
Access from Public Road HGV Movements	%	25	If unfavourable ground is found thicker sub-base may be required
Total haul and construction HGV movements	%	10	If unfavourable ground is found additional gravel / geotextiles can be introduced which
Total TCC Construction HGV movements	%	10	If unfavourable ground is found additional gravel / geotextiles can be introduced which
Total Trenching Electrical Cable HGV Movements	%	0	Worst case already assumed - 1 cable per delivery
Total Trenching Fibre Cable HGV Movements	%	0	Worst case already assumed - 1 cable per delivery
Total Trenching Earth Cable HGV Movements	%	0	Worst case already assumed - 1 cable per delivery
Total Protective Cover HGV movements	%	0	Protective Cover Spans TBC
Total trench HGV movements	%	10	If unfavourable ground is encountered trench sides can be battered back to 1:0
Total cable duct HGV movements	%	10	therefore increased CHB required and more natural soils to be removed
Landfill bin HGV movements	%	0	Nominal percentage for damage to ducts
Landfill bin HGV movements	%	0	Worst case already assumed
Landfill HDO HGV movements	%	20	if unfavourable ground is encountered gravel / geotextiles can be introduced which will reduce stone depth therefore low risk of significant increase in vehicle movements
Long / Moderate Chastore HDO Drilling Compound HGV movements	%	20	Possible occurrence of poor ground conditions at HDO locations. If unfavourable ground is found additional gravel / geotextiles can be introduced which will reduce stone depth therefore low risk of significant increase in vehicle movements
Long / Moderate Chastore HDO End PG Compound HGV movements	%	10	If unfavourable ground is found additional gravel / geotextiles can be introduced which will reduce stone depth therefore low risk of significant increase in vehicle movements
Minor Chastore HDO Drilling Compound HGV movements	%	5	Possible occurrence of poor ground conditions at HDO locations
Minor Chastore HDO End Compound HGV movements	%	5	Nominal percentage for damage to ducts
Driveway Slippy Spill Layer HDO Network HGV Movements	%	5	Nominal percentage for damage to ducts
Permanent Haul Road HGV Movements	%	25	If unfavourable ground is found thicker sub-base may be needed
Substation Civil Engineering HGV Movements	%	20	Possible occurrence of material available for earthworks and increased import / export of soils required

Total Vehicle Movements (with miscellaneous allowances)	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (including 400kV)	Substation Zone	Section 18 (400kV)
Access from Public Road HGV Movements	25	25	25	25	25	25	25	25	25	25	25	25	25	17	25
Total haul and construction HGV movements	4,988	2,627	2,502	2,451	2,431	2,393	1,338	1,599	1,577	1,018	1,311	1,532	1,341	950	1,380
Total TCC Construction HGV movements	762	398	366	366	366	366	366	366	366	366	366	366	366	2,207	366
Total Trenching Electrical Cable HGV Movements	14	12	10	8	10	10	4	10	10	4	8	4	4	0	0
Total Trenching Fibre Cable HGV Movements	14	12	10	8	10	10	4	10	10	4	8	4	4	0	0
Total Trenching Earth Cable HGV Movements	7	6	5	4	5	5	2	5	5	2	4	2	2	0	0
Total Protective Cover HGV movements	43	41	31	21	32	36	21	18	12	25	11	22	0	0	13
Total trench HGV movements	1,260	1,113	1,113	1,113	1,113	1,113	667	667	667	1,050	667	667	667	362	667
Total cable duct HGV movements	61	58	44	18	46	49	30	22	17	36	16	31	13	0	19
Landfill bin HGV movements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Landfill HDO HGV movements	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Long / Moderate Chastore HDO Drilling Compound HGV movements	0	0	0	639	345	298	10	665	0	288	0	349	0	0	0
Long / Moderate Chastore HDO End PG Compound HGV movements	0	0	0	0	198	198	0	198	0	0	0	198	0	0	0
Minor Chastore HDO Drilling Compound HGV movements	316	0	0	0	316	316	0	0	0	421	0	364	0	431	0
Minor Chastore HDO End Compound HGV movements	165	0	0	0	165	165	0	0	0	165	0	165	0	165	0
Driveway Slippy Spill Layer HDO Network HGV Movements	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0
Permanent Haul Road HGV Movements	0	0	0	0	0	0	0	0	0	0	0	0	0	262	0
Substation Civil Engineering HGV Movements	0	0	0	0	0	0	0	0	0	0	0	0	0	7,359	0
Grand Total (one way movements)	8,138	4,988	3,874	2,451	3,421	3,490	3,490	3,490	3,490	3,490	3,490	3,490	3,490	21,696	3,491
Grand Total (two way movements)	16,276	9,976	7,747	4,902	6,842	6,980	6,980	6,980	6,980	6,980	6,980	6,980	6,980	43,392	6,982

Excavation Increase in Two Way Vehicle Movements	%	11.2	9.7	9.7	12.6	10.2	9.8	10.4	10.0	9.8	9.5	10.3	8.8	17.4	8.7

Building	Height (m)	Length (m)	Width (m)	Area (m²)	Number of
Spare Parts Building	15.00	30.00	35.00	1050.00	1.00
Service Building	15.00	40.00	35.00	1400.00	1.00
Upper Bridge Valve Hall	24.00	55.00	45.00	2475.00	1.00
Lower Bridge Valve Hall	24.00	55.00	45.00	2475.00	1.00
DBS Valve Hall	24.00	45.00	20.00	900.00	1.00
+VE DC Hall	22.00	40.00	20.00	800.00	1.00
-VE DC Hall	22.00	40.00	20.00	800.00	1.00

Other Structures	Height (m)	Length (m)	Width (m)	Area (m²)	Number of	Loading Weight (t)
Main Transformer (fully assembled)	11.00	16.00	6.00	96.00	7.00	400.00
External Fire Barriers for Transformers	12.00	25.00	0.50	12.50	7.00	N/A
Cooler Area Outdoor	TBC	30.00	20.00	600.00	1.00	TBC
AC Reactor	TBC	130.00	45.00	5850.00	1.00	TBC
Grounding Circuit	TBC	40.00	20.00	800.00	1.00	TBC
Delta AC Bus Area	TBC	130.00	45.00	5850.00	1.00	TBC
AC Filter Area, PIR Area and PLC Area	TBC	130.00	35.00	4550.00	1.00	TBC
DBS Resistor	TBC	20.00	10.00	200.00	1.00	TBC
AHU AREA (Small)	TBC	5.00	5.00	25.00	2.00	TBC
AHU AREA (Medium)	TBC	10.00	10.00	100.00	2.00	TBC
AHU AREA (Large)	TBC	20.00	10.00	200.00	2.00	TBC
DC Cable Test and Trench And Test Area	TBC	130.00	10.00	1300.00	1.00	TBC
Water Tank	6.00	6.00	6.00	36.00	1.00	5.00
Diesel Generator	2.60	6.10	2.50	15.25	1.00	6.60

Indicative Size Based on Drawing, TBC

Indicative Size Based on Drawing, TBC

Indicative Size Based on Drawing, TBC

Indicative Size Based on Drawing, TBC

Assumed weight, TBC

Based on HVAC Layout

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
Spare Parts Building	pad foundations	5x5x1m deep RC concrete on a 35x5m grid plus ridge column at both gables		400		2,400	960	Concrete	1.00	400.00
	concrete slab within building	200mm thick concrete slab	480	210	1,050	2,400	504	Concrete	1.00	210.00
		on 150mm thick type 1 sub base	278	189	1,050	1,850	350	Stone	1.00	349.65
	extra concrete plinths for equipment in building	TBC								
	perimeter ground beam	450mm deep x 600mm wide, 180m long		35		2,400	84	Concrete	1.00	35.10
	steel frame	80 kg/m2 includes secondary steel (purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 30m span and 5m bay centres , 15m ridge height.	80		1,050		84	Steel	1.00	84.00
	cladding	composite cladding panels 150mm thick -	10		1,950		20	Cladding	1.00	19.50

Ground bearing slab

20% increase for sub base due to variable ground

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
Service Building	RC Pad foundations	4.5x4.5x1m deep RC concrete on a 35x5m grid plus ridge column at both gables		405		2,400	972	Concrete	1.00	405.00
	Concrete ground bearing slab within building	200mm thick concrete slab	480	280	1,400	2,400	672	Concrete	1.00	280.00
		on 150mm thick type 1 sub base	278	252	1,400	1,850	466	Stone	1.00	466.20
	extra concrete plinths for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 150m long		41		2,400	97	Concrete	1.00	40.50
	Steel frame	134 kg/m2 includes secondary steel (purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 35m span and 5m bay centres , 15m ridge height.	80		1,400		112	Steel	1.00	112.00
	Cladding	composite cladding panels 150mm thick -	10		2,250		23	Cladding	1.00	22.50

Ground bearing slab

20% increase for sub base due to variable ground

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
Upper Bridge Valve Hall	RC Pad foundations	5x5x1m deep RC concrete on a 45x5m grid plus ridge column at both gables		550		2,400	1,320	Concrete	1.00	550.00
	Concrete ground bearing slab within building	200mm thick concrete slab	480	495	2,475	2,400	1,188	Concrete	1.00	495.00
		on 150mm thick type 1 sub base	278	446	2,475	1,850	824	Stone	1.00	824.18
	extra concrete plinths for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 200m long		54		2,400	130	Concrete	1.00	54.00
	Steel frame	80 kg/m2 includes secondary steel, purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 45m span and 5m bay centres, 24m ridge height.	80		2,475		198	Steel	1.00	198.00
	Cladding	composite cladding panels 150mm thick -	10		4,800		48	Cladding	1.00	48.00

Ground bearing slab
20% increase for sub base due to variable ground

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
Lower Bridge Valve Hall	RC Pad foundations	5x5x1m deep RC concrete on a 45x5m grid plus ridge column at both gables		550		2,400	1,320	Concrete	1.00	550.00
	Concrete ground bearing slab within building	200mm thick concrete slab	480	495	2,475	2,400	1,188	Concrete	1.00	495.00
		on 150mm thick type 1 sub base	278	446	2,475	1,850	824	Stone	1.00	824.18
	extra concrete plinths for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 200m long		54		2,400	130	Concrete	1.00	54.00
	Steel frame	80 kg/m2 includes secondary steel, purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 45m span and 5m bay centres, 24m ridge height.	80		2,475		198	Steel	1.00	198.00
	Cladding	composite cladding panels 150mm thick -	10		4,800		48	Cladding	1.00	48.00

Ground bearing slab
20% increase for sub base due to variable ground

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
+VE DC Hall	RC Pad foundations	3x3x0.75m deep RC concrete on a 20x5m grid plus ridge column at both gables		81		2,400	194	Concrete	1.00	81.00
	Concrete ground bearing slab within building	200mm thick concrete slab	480	160	800	2,400	384	Concrete	1.00	160.00
		on 150mm thick type 1 sub base	278	144	800	1,850	266	Stone	1.00	266.40
	extra concrete plinths for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 120m long		32		2,400	78	Concrete	1.00	32.40
	Steel frame	80 kg/m2 includes secondary steel, purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 20m span and 5m bay centres, 22m ridge height.	80		800		64	Steel	1.00	64.00
	Cladding	composite cladding panels 150mm thick -	10		2,640		26	Cladding	1.00	26.40

Ground bearing slab
20% increase for sub base due to variable ground

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
-VE DC Hall	RC Pad foundations	3x3x0.75m deep RC concrete on a 20x5m grid plus ridge column at both gables		81		2,400	194	Concrete	1.00	81.00
	Concrete ground bearing slab within building	200mm thick concrete slab	480	160	800	2,400	384	Concrete	1.00	160.00
		on 150mm thick type 1 sub base	278	144	800	1,850	266	Stone	1.00	266.40
	extra concrete plinths for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 120m long		32		2,400	78	Concrete	1.00	32.40
	Steel frame	80 kg/m2 includes secondary steel, purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 20m span and 5m bay centres, 22m ridge height.	80		800		64	Steel	1.00	64.00
	Cladding	composite cladding panels 150mm thick -	10		2,640		26	Cladding	1.00	26.40

Ground bearing slab
20% increase for sub base due to variable ground

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
DBS Valve Hall	RC Pad foundations	3x3x0.75m deep RC concrete on a 20x5m grid plus ridge column at both gables		149		2,400	356	Concrete	1.00	148.50
	Concrete ground bearing slab within building	200mm thick concrete slab	480	180	900	2,400	432	Concrete	1.00	180.00
		on 150mm thick type 1 sub base	278	162	900	1,850	300	Stone	1.00	299.70
	extra concrete plinths for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 130m long		35		2,400	84	Concrete	1.00	35.10
	Steel frame	80 kg/m2 includes secondary steel, purlins and cladding rails and door framing, and a 10% allowance for connections. Based on max 20m span and 5m bay centres, 20m ridge height.	80		900		72	Steel	1.00	72.00
	Cladding	composite cladding panels 150mm thick	10		3,120		31	Cladding	1.00	31.20

Ground bearing slab
20% increase for sub base due to variable ground

Structure	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
External Fire Barriers for Transformers	7 No. External Fire Barriers (Transformers)	12m high x 25m long x 500mm thick fire barriers		150		2,400	360	Concrete	7.00	1050.00

Structure/Bases	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
Main Transformer	RC Base/Foundation	1no. 16m x 6m x 450mm thick	1,080	43.20	96.00	2,400	104	Concrete	7	302.40
	Sub base	150mm thick type 1 sub base	278	17.28	96.00	1,850	32	Stone	7	223.78
Cooler Area Outdoor	RC Base/Foundation	1no. 30m x 20m x 300mm thick	720	180.00	600.00	2,400	432	Concrete	1	180.00
	Sub base	150mm thick type 1 sub base	278	108.00	600.00	1,850	200	Stone	1	199.80
AC Reactor	RC Base/Foundation	1no. 130m x 45m x 300mm thick	720	1,755.00	5,850.00	2,400	4,212	Concrete	1	1755.00
	Sub base	150mm thick type 1 sub base	278	1,053.00	5,850.00	1,850	1,948	Stone	1	1948.05
Grounding Circuit	RC Base/Foundation	1no. 40m x 20m x 300mm thick	720	240.00	800.00	2,400	576	Concrete	1	240.00
	Sub base	150mm thick type 1 sub base	278	144.00	800.00	1,850	266	Stone	1	266.40
Delta AC Bus Area	RC Base/Foundation	1no. 130m x 45m x 300mm thick	720	1,755.00	5,850.00	2,400	4,212	Concrete	1	1755.00
	Sub base	150mm thick type 1 sub base	278	1,053.00	5,850.00	1,850	1,948	Stone	1	1948.05
AC Filter Area, PIR Area and PLC Area	RC Base/Foundation	1no. 130m x 35m x 300mm thick	720	1,365.00	4,550.00	2,400	3,276	Concrete	1	1365.00
	Sub base	150mm thick type 1 sub base	278	819.00	4,550.00	1,850	1,515	Stone	1	1515.15
DBS Resistor	RC Base/Foundation	1no. 20m x 10m x 300mm thick	720	60.00	200.00	2,400	144	Concrete	1	60.00
	Sub base	150mm thick type 1 sub base	278	36.00	200.00	1,850	67	Stone	1	66.60
AHU AREA (Small)	RC Base/Foundation	1no. 5m x 5m x 300mm thick	720	7.50	25.00	2,400	18	Concrete	2	15.00
	Sub base	150mm thick type 1 sub base	278	4.50	25.00	1,850	8	Stone	2	16.65
AHU AREA (Medium)	RC Base/Foundation	1no. 10m x 10m x 300mm thick	720	30.00	100.00	2,400	72	Concrete	2	60.00
	Sub base	150mm thick type 1 sub base	278	18.00	100.00	1,850	33	Stone	2	66.60
AHU AREA (Large)	RC Base/Foundation	1no. 10m x 10m x 300mm thick	720	60.00	200.00	2,400	144	Concrete	2	120.00
	Sub base	150mm thick type 1 sub base	278	36.00	200.00	1,850	67	Stone	2	133.20
DC Cable Test and Trench And Test Area	RC Base/Foundation	1no. 130m x 10m x 300mm thick	720	390.00	1,300.00	2,400	936	Concrete	1	390.00
	Sub base	150mm thick type 1 sub base	278	234.00	1,300.00	1,850	433	Stone	1	432.90
Water Tank	RC Base/Foundation	1no. 10m x 10m x 300mm thick	720	10.80	36.00	2,400	26	Concrete	1	10.80
	Sub base	150mm thick type 1 sub base	278	6.48	36.00	1,850	12	Stone	1	11.99
Diesel Generator	RC Base/Foundation	1no. 10m x 10m x 300mm thick	720	4.58	15.25	2,400	11	Concrete	1	4.58
	Sub base	150mm thick type 1 sub base	278	2.75	15.25	1,850	5	Stone	1	5.08

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

Parameter (Materials / Electrical Equipment)	Units	Value	Equipment Weight (tonnes)	Total Equipment Weight (tonnes)	Total Vehicle Movements	
Concrete	m ³	11,787	-	-	1965	Total concrete requirement for foundations
Steel Reinforcement (assuming 0.065 t/m ³ Concrete)	Tonnes	766	-	-	39	
Type 1 Stone	Tonnes	10,131	-	-	507	Total Type 1 Requirement for foundations
Volume of Soil to be removed from site (foundation excavation)	m ³	17,263	-	-	-	
Mass of soil to be removed from site (foundation excavation)	Tonnes	34525.9	-	-	1727	Soil excavated for foundation and sub-base placement. Assumed building slab above ground level.
Steel Frame	Tonnes	792	-	-	64	Total steel work requirement for proposed substation buildings
Cladding	Tonnes	222	-	-	18	Total external cladding requirement for proposed substation buildings
Main Transformer (fully assembled)	No	7	400	2800	7	Abnormal Load Delivery Of Single Transformer
Cooler Area Outdoor	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
AC Reactor	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
Grounding Circuit	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
Delta AC Bus Area	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
AC Filter Area, PIR Area and PLC Area	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
DBS Resistor	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
AHU AREA (Small)	No	2.00	Unknown	Unknown	5	Assumed vehicle movements (TBC)
AHU AREA (Medium)	No	2.00	Unknown	Unknown	10	Assumed vehicle movements (TBC)
AHU AREA (Large)	No	2.00	Unknown	Unknown	15	Assumed vehicle movements (TBC)
DC Cable Test and Trench And Test Area	No	1.00	Unknown	Unknown	30	Assumed vehicle movements (TBC)
Water Tank	No	1.00	Unknown	Unknown	1	Assumed vehicle movements (TBC)
Diesel Generator	No	1.00	Unknown	Unknown	1	Assumed vehicle movements (TBC)
Miscellaneous Allowance For Other M&P Equipment	No	1	-	-	150	Assumed vehicle movements (TBC)
TOTAL Vehicle Movements					4719	

Notes / Assumptions:

- Earthworks, hardstanding and road have not been included in this part of the assessment. Considered in materials vehicle movements.
- Vehicle movements for removal of arisings is based on excavation of volume of foundations/ slab/ sub-base.
- General site traffic and construction equipment considered in substation programme and daily movements
- Vehicle movements for delivery of electrical equipment are shown in substation programme and daily movement
- Foundations have been based on a ground bearing slab - SI to confirm GBP. If suspended slab to be used foundation size and number would increase
- Full design of foundations / bases (based on loadings / SI) to be undertaken to confirm sizes.
- Transformer housing has not been included for (assume part of equipment)
- No internal wall or additional floors have been included in the buildings

Parameter	Units	Value	Source/Comments
Volume of topsoil excavated per transition bay location (includes transition bay link box)	m ³	241	WA Calculation based on drawing ED13554-GE-1013 & 1014 (Ecodoc Reference 004437669-01 & 004437670-01). Extents of excavation multiplied by Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab) multiplied by bulking factor of 1.5.
Volume of sub-soil Excavated per transition bay location (Includes transition bay link box)	m ³	538	WA Calculation based on drawing ED13554-GE-1013 & 1014 (Ecodoc Reference 004437669-01 & 004437670-01) multiplied by bulking factor of 1.5. Total volume excavated is 776m ³ . Volume of sub-soil is total volume - topsoil volume
Volume of topsoil excavated per jointing bay location	m ³	150	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01) multiplied by bulking factor of 1.5. Extents of excavation multiplied by Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab)
Volume of sub-soil Excavated per jointing bay location	m ³	252	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01) multiplied by bulking factor of 1.5. Total volume excavated is 391m ³ . Volume of sub-soil is total volume - topsoil volume
Volume of topsoil excavated per jointing bay link box location	m ³	31	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01). Extents of excavation multiplied by Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab) multiplied by bulking factor of 1.5.
Volume of sub-soil Excavated per jointing bay link box location	m ³	37	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01) multiplied by bulking factor of 1.5. Total volume excavated is 67m ³ . Volume of sub-soil is total volume - topsoil volume
Volume of topsoil excavated per m of haul road	m ³	6.0	Haul road easement width (Drawing ED13554-GE-1021, Ecodoc Reference 004437673-01) x Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab) multiplied by bulking factor of 1.5.
Volume of sub-soil excavated per m of haul road for drainage ditches (accounts for drainage ditches on both sides of road)	m ³	1.13	Maximum volume based on drawing ED13554-GE-1023 (Ecodoc Reference 004437673-01) multiplied by bulking factor of 1.5.
Volume of topsoil excavated per m of trenching (excluding haul road)	m ³	9.2	[Cable route area of topsoil disturbed 25.35m] - haul road (10m)] *depth of topsoil (0.4m) multiplied by bulking factor of 1.5. RWE Drawing REN/CIV/007/AP2 (Ecodoc Reference 004390501-01)
Volume of sub-soil excavated per m of trenching	m ³	3.3	Maximum Calculated for HVDC Arrangement from RWE Drawing REN/CIV/007/AP2 (Ecodoc Reference 004390501-01) multiplied by bulking factor of 1.5.
Volume of topsoil excavated per large TCC	m ³	6000	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per satellite TCC	m ³	3375	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per landfall compound	m ³	4950	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per Long / Moderate HDD entry pit compound	m ³	1872	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per Long / Moderate HDD exit pit compound	m ³	936	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per minor HDD entry pit compound	m ³	1080	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per minor HDD exit pit compound	m ³	648	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per access	m ³	64	Area of access x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per m Auxiliary Supply Trench	m ³	0.27	Width of trench x depth of topsoil x bulking factor of 1.5
Volume of subsoil excavated per m of Auxiliary Supply Trench	m ³	0.98	Width of trench x (depth of trench - depth of topsoil) x bulking factor of 1.5
Area of topsoil excavated per substation TCC	m ³	18007	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of Topsoil excavated per m of Substation Drainage Trench	m ³	0.84	Width of trench x depth of topsoil x bulking factor of 1.5
Volume of sub-soil excavated per m of Substation Drainage Trench	m ³	3.36	Width of trench x (depth of trench - depth of topsoil) x bulking factor of 1.5

Total Stockpiled Volumes	Number / Length	Volume (m3)
Transition Bay Locations (topsoil volume)	2	482.9
Transition Bay Locations (sub-soil volume)	2	1076.1
Jointing Bay Locations (topsoil volume)	112	20258.4
Jointing Bay Locations (sub-soil volume)	112	32362.8
Haul road Topsoil Strip	38710	232260.0
Drainage Ditch Sub-soil Excavation	38710	43548.8
Cable route Topsoil Strip	32000	294720
Trench Sub-Soil Excavation	32000	104520.0
Topsoil excavated from Large TCC	2	12000.0
Topsoil excavated from Satellite TCC	14	47250.0
Topsoil excavated from landfall compound	1	4950
Topsoil excavated from Long / Moderate HDD entry pit compound	8	14976
Topsoil excavated from Long / Moderate HDD exit pit compound	8	7488
Topsoil excavated from Minor HDD entry pit compound	15	16200
Topsoil excavated from Minor HDD exit pit compound	16	10368
Topsoil excavated from accesses	16	1026.24
Topsoil excavated from Auxiliary Supply Trench	900	243
Subsoil excavated from Auxiliary Supply Trench	900	880.875
Topsoil excavated from substation TCC	1	18007.2
Topsoil excavated from Substation Drainage Trench	740	621.2472
Subsoil excavated from Substation Drainage Trench	740	2484.9888

Materials Stockpile Totals	Units	Value
Topsoil	m ³	680851.0
Sub-soil	m ³	184873.6

Imported Materials / Permanent Equipment	Units	Maximum Value	Value Assuming Shared Stone etc between HDDs in same section of cable corridor
Mot Type 1	Tonnes	332,430	304,536
Asphalt	Tonnes	25,989	25,989
HB2 External Radii Kerbs	No	464	464
HB2 Straight Kerbs	No	1,533	1,533
Concrete	m³	21,485	21,485
Crusher Run Stone	Tonnes	0	0
20/40mm Drainage Stone	Tonnes	41,807	41,807
Length of perforated pipe	m	77,420	77,420
Geogrid	m²	477,094	434,014
Geotextile	m²	477,094	434,014
Stock Proof Fencing (including required posts)	m	78,410	78,410
Heras fencing panels	No	4,682	3,468
Length of Onshore Export Cable	m	73,000	73,000
Length of Onshore Fibre Cable	m	73,900	73,900
Length of Onshore Earth Cable	m	36,500	36,500
Trench Tiles / cable protective covers	No	262,878	262,878
Cement Bound Sand	Tonnes	107,598.6	107,599
Selected Sand	Tonnes	2,128.9	2,129
Length of export cable duct in trench	m	64,000	64,000
Length of 90mm duct / pipe in trench	m	96,900	96,900
Length of ducting for install in onshore HDD bores for export cables	m	9,400	9,400
Length of ducting for install in onshore HDD bores for FO and DTS	m	14,100	14,100
Bentonite	kg	1,017,900	1,017,900
Water	m³	25,404.0	25,404
Steel Reinforcement	Tonnes	1,387.5	1,388
Link box lids	No	116.0	116
Cable Joint Kits	No	174.0	174
Transition bay pre-cast concrete slabs	No	76	76
Length of 120mm duct	m	900	900
Length of 11kV Auxiliary Cable	m	900	900
Number of CG3 cable marker blocks	-	368	368
Mass of Cement	Tonnes	1.43	1.43
Mass of Lime	Tonnes	0.23	0.23
Mass of Sand	Tonnes	3.64	3.64
Length of surface water drainage pipework	m	740	740
Drainage Manholes	No	5	5
Drainage Headwalls	No	3	3
Import of subsoil for substation earthworks	Tonnes	39,919	39,919
Steel Work For Substation Structures	Tonnes	792	792
Cladding for Substation Structures	Tonnes	222	222
Main Transformer (fully assembled)	No	7	7
Cooler Area Outdoor	No	1	1
AC Reactor	No	1	1
Grounding Circuit	No	1	1
Delta AC Bus Area	No	1	1
AC Filter Area, PIR Area and PLC Area	No	1	1
DBS Resistor	No	1	1
AHU AREA (Small)	No	2	2
AHU AREA (Medium)	No	2	2
AHU AREA (Large)	No	2	2
DC Cable Test and Trench And Test Area	No	1	1
Water Tank	No	1	1
Diesel Generator	No	1	1

Exported Materials	Units	Value	Value Assuming Shared Stone etc between HDDs in same section of cable corridor
Mot Type 1	Tonnes	301,464	283,700
Asphalt	Tonnes	16,028	16,028
HB2 External Radii Kerbs	No	464	464
HB2 Straight Kerbs	No	0	0
Concrete	m ³	28	28
Crusher Run Stone	Tonnes	0	0
20/40mm Drainage Stone	Tonnes	41,807	41,807
Length of perforated pipe	m	77,420	77,420
Geogrid	m ²	477,094	434,014
Geotextile	m ²	477,094	434,014
Heras fencing panels	No	3,986	2,772
Native Soil	Tonnes	184,452	184,452
Topsoil	Tonnes	32,884	32,884
Drill Fluid Removal	m ³	12,180	12,180
Stock Proof Fencing (including required posts)	m	78,410	78,410
Mass of Cement	Tonnes	0.29	0.29
Mass of Lime	Tonnes	0.05	0.05
Mass of Sand	Tonnes	0.73	0.73

General Data	Value	Source/Comments
Number of Welfare / Container Units Per Delivery	1	Worst Case
Number of plant per delivery	1	Worst Case
Frequency of Skip Emptying (weeks)	2	Assumed

Main TCC Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	4	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Canteen Unit	4	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Tool Storage Unit	6	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Workshop Unit	1	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Mobile Toilet Unit	2	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Washing / Changing Unit	1	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
First Aid Unit		
Drying Room Unit	1	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Freshwater Storage Container (2 per delivery)	2	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Foul Water Storage Container (2 per delivery)	2	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Bunded Fuel Tank (1 per delivery)	1	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Generator (2 per delivery)	2	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
General Waste Skip (1 per delivery)	6	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Wheel Wash (assume 3 deliveries to mobilise)		
Weigh bridge (assume 3 deliveries to mobilise)		
Telehandler	2	Assumed Required
Road Sweeper	1	Assumed Required
Number of HGV Movements	32	

Satellite TCC Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Canteen Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Tool Storage Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Workshop Unit		
Mobile Toilet Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Washing / Changing Unit		
First Aid Unit		
Drying Room Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Freshwater Storage Container (2 per delivery)	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Foul Water Storage Container (2 per delivery)	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Bunded Fuel Tank (1 per delivery)	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Generator (2 per delivery)	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
General Waste Skip (1 per delivery)	3	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Wheel Wash (assume 3 deliveries to mobilise)		
Weigh bridge (assume 3 deliveries to mobilise)		
Telehandler	1	Assumed Required
Road Sweeper	1	Assumed Required
Number of HGV Movements	13	

Landfill HDD Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	1	Assumed - Compound to be designed
Canteen Unit / Lunch Room	1	Assumed - Compound to be designed
Welfare Unit	1	Assumed - Compound to be designed
Tool Storage Unit	2	Assumed - Compound to be designed
Workshop Unit	1	Assumed - Compound to be designed
Generator (2 per delivery)	1	Assumed - Compound to be designed
Freshwater Storage Container (2 per delivery)	2	Assumed - Compound to be designed
Foul Water Storage Container (2 per delivery)	1	Assumed - Compound to be designed
General Waste Skip (1 per delivery)	1	Assumed - Compound to be designed
Bunded Fuel Tank	1	Assumed - Compound to be designed
Bentonite Storage Container	2	Assumed - Compound to be designed
Mining Tank	2	Assumed - Compound to be designed
Cuttings Container	2	Assumed - Compound to be designed
Drill Pipe Rack	3	Assumed - Compound to be designed
Mud Pump	2	Assumed - Compound to be designed
Power Pack	1	Assumed - Compound to be designed
Driller's Cabin	1	Assumed - Compound to be designed
HDD Rig	1	Assumed - Compound to be designed
Telehandler / Excavator	1	Assumed - Compound to be designed
Number of HGV Movements	25	

Long / Moderate Onshore HDD Entry Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Canteen Unit / Lunch Room	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Welfare Unit	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Tool Storage / General Storage	3	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Workshop Unit	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Generator (2 per delivery)	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Freshwater Storage Container (2 per delivery)	1	Assumed Required
Foul Water Storage Container (2 per delivery)	1	Assumed Required
General Waste Skip (1 per delivery)	1	Assumed Required
Bunded Fuel Tank	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Bentonite Storage	2	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Mining Tank	2	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Cuttings Container	2	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Drill Pipe Rack	3	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Mud Pump	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Power Pack	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Driller's Cabin	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
HDD Rig	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Telehandler / Excavator	1	Assumed Required
Number of HGV Movements	25	

Long / Moderate Onshore HDD Exit Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office / Welfare Unit	1	Assumed Required
General Waste Skip (1 per delivery)	1	Assumed Required
Generator (2 per delivery)	1	Assumed Required
Tool Storage Unit	1	Assumed Required
Drill Pipe Rack	2	Assumed Required
Number of HGV Movements	5	

Minor Onshore HDD Entry Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office / Welfare Unit	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Canteen Unit / Lunch Room	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Welfare Unit		
Tool Storage / General Storage	2	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Workshop Unit	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Generator (2 per delivery)	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Freshwater Storage Container (2 per delivery)	1	Assumed Required
Foul Water Storage Container (2 per delivery)	1	Assumed Required
General Waste Skip (1 per delivery)	1	Assumed Required
Bunded Fuel Tank	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Bentonite Storage Container	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Fluid and Reciprocating Tanks	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Cuttings Container	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Spare Rods	3	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Mud Pump		
Power Pack		
Driller's Cabin		
Mini HDD Rig	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Telehandler / Excavator	1	Assumed Required
Number of HGV Movements	17	

Minor Onshore HDD Exit Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office / Welfare Unit		
General Waste Skip (1 per delivery)		
Generator (2 per delivery)	1	Assumed Required
Tool Storage Unit	1	Assumed Required
Drill Pipe Rack		
Number of HGV Movements	2	

Substation TCC Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	10	Assumed - Compound to be designed
Canteen Unit	8	Assumed - Compound to be designed
Tool Storage Unit	12	Assumed - Compound to be designed
Workshop Unit	2	Assumed - Compound to be designed
Mobile Toilet Unit	6	Assumed - Compound to be designed
Washing / Changing Unit	3	Assumed - Compound to be designed
First Aid Unit	1	Assumed - Compound to be designed
Drinking Room Unit	3	Assumed - Compound to be designed
Freshwater Storage Container (2 per delivery)	6	Assumed - Compound to be designed
Foul Water Storage Container (2 per delivery)	6	Assumed - Compound to be designed
Bunded Fuel Tank (1 per delivery)	2	Assumed - Compound to be designed
Generator (2 per delivery)	6	Assumed - Compound to be designed
General Waste Skip (1 per delivery)	8	Assumed - Compound to be designed
Wheel Wash (assume 3 deliveries to mobilise)	1	Assumed - Compound to be designed
Weigh bridge (assume 3 deliveries to mobilise)	1	Assumed - Compound to be designed
Telehandler	4	Assumed - Compound to be designed
Road Sweeper	1	Assumed - Compound to be designed
Number of HGV Movements	75	

Section	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (including 400kV)	Substation Zone	Section 15 (400kV)
Compound Welfare and Operation Plant Requirements	457	143	160	236	259	456	156	236	148	613	123	216	266	910	267
Grand total deliveries	457	143	160	236	259	456	156	236	148	613	123	216	266	910	267
Grand total (two way movements)	914	286	320	472	518	912	312	472	296	1,226	246	432	532	1,820	534

Compound Welfare and Operation Plant Requirements	Units	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (including 400kV)	Substation Zone	Section 15 (400kV)
Number of Main TCC	-	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
Number of Minor TCC	-	2	1	1	1	1	0	1	1	1	1	1	1	1	0	1
Number of Substation TCC	-	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Duration of TCC Site	Weeks	78	78	78	65	78	78	65	65	61	78	56	57	65	190	70
Number of Skip Movements	-	234	117	117	99	117	234	99	99	93	351	84	87	99	760	105
Number of Landfill Compounds	-	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Duration of Landfill Compound Usage	Weeks	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Skip Movements	-	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Long / Moderate HDD Drilling Compounds	-	0	0	0	2	1	1	0	2	0	1	0	1	0	0	0
Combined Duration of Onshore HDD Drilling Compound Usage	Weeks	0	0	0	22	13	9	0	22	0	0	0	13	0	0	0
Number of Skip Movements	-	0	0	0	11	7	5	0	11	0	0	0	7	0	0	0
Number of Long / Moderate HDD Exit Pit Compounds	-	0	0	1	0	1	1	2	0	2	0	0	0	1	0	0
Combined Duration of Onshore HD Exit Compound Usage	Weeks	0	0	13	0	9	13	22	0	18	0	0	0	13	0	0
Number of Skip Movements	-	0	0	7	0	5	7	11	0	9	0	0	0	7	0	0
Number of Minor HDD Drilling Compounds	-	2	0	0	0	1	2	0	0	0	3	0	1	3	0	3
Combined Duration of Onshore HDD Drilling Compound Usage	Weeks	9	0	0	0	5	9	0	0	0	13	0	5	18	0	13
Number of Skip Movements	-	5	0	0	0	3	5	0	0	0	7	0	3	9	0	7
Number of Minor HDD Exit Pit Compounds	-	2	0	0	0	1	2	0	0	0	2	1	1	2	0	4
Combined Duration of Onshore HD Exit Compound Usage	Weeks	9	0	0	0	5	9	0	0	9	9	9	9	9	0	22
Number of Skip Movements	-	5	0	0	0	3	5	0	0	0	5	5	5	5	0	11
Number of HGV movements to Establish Compounds	-	89	13	18	63	62	100	23	63	23	125	17	57	73	75	72
Number of HGV movements to Demobilise Compounds	-	89	13	18	63	62	100	23	63	23	125	17	57	73	75	72
Total Number of Skip Movements	-	279	117	124	110	135	256	110	110	102	363	89	102	120	760	123
Total Number of Compound HGV Movements	-	457	143	160	236	259	456	156	236	148	613	123	216	266	910	267

Section 1 (Including Landfall & Transition Bay Works)

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCC's and site accesses	44	370	8.4	8.4																								
Mobilisation of Welfare and Operation Plant to TCC	22	26	1.2																									
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	110	1,358		12.3	12.3	12.3	12.3	12.3																				
Cable Construction Works																												
Trench Excavation and duct installation	198	992					5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0													
Trench Backfill with CBS and protective covers	198	760					3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8													
Jointing Bay Excavation	88	37												0.4	0.4	0.4	0.4											
Jointing Bay Base Construction	88	35												0.4	0.4	0.4	0.4											
Pulling and connection of cables	88	63													0.7	0.7	0.7	0.7										
Backfill over Jointing Bays	88	25													0.3	0.3	0.3	0.3										
HDD At Landfall																												
Establish Landfall HDD construction compound / Topsoil Strip in Landfall Laydown Area	22	273			12.4																							
Mobilisation of HDD Kit and Welfare to Landfall Compound	22	25			1.1																							
HDD Drilling works & Ducting (assume working 24/7 7 days a week but 22 delivery days a month)	180	822				4.6	4.6	4.6	4.6	4.6	4.6																	
Demobilisation of HDD kit and welfare	22	25									1.1																	
Transition Bays at Landfall																												
Excavation of transition bays	44	34										0.8	0.8															
Construction of transition bay and link box base and walls	66	29										0.4	0.4	0.4														
Connection of Cables in Transition Bays	66	4													0.1	0.1	0.1											
Transition bay backfill and roof and backfill over transition bay	66	33													0.5	0.5	0.5											
Landfall Compound Removal and Reinstatement	66	273																	4.1	4.1	4.1							
Minor HDD crossing of B1242 (OB ID S1-RX-1 OR S1-RX-2) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compounds	22	97							4.4																			
Mobilisation of HDD Kit and Welfare to compounds	22	19							0.9																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	35								1.6																		
Demobilisation of HDD Kit and welfare to next minor HDD	22	0								0.0																		
Remove of onshore HDD Entry and Exit Compounds - materials reused at next minor HDD	22	0								0.0																		
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S1-UUX-1) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compounds - materials from previous minor HDD	22	0								0.0																		
Mobilisation of HDD Kit and Welfare to compounds - equipment from previous minor HDD	22	0								0.0																		
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	35									1.6																	
Demobilisation of HDD Kit and welfare	22	19										0.9																
Remove of onshore HDD Entry and Exit Compounds	22	97															4.4											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	1,358																	20.6	20.6	20.6							
Demobilisation of Welfare from TCC	22	26																								1.2		
TCC and access road Removal	44	370																							8.4	8.4		
Average Section Skip HGV Movements Per Day	396	279	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Total HGVs per day			10.3	21.5	26.6	17.6	26.5	26.5	19.4	15.7	15.3	12.4	12.4	11.9	11.9	3.1	6.6	25.4	33.8	35.0								
Total two-way HGV movements per day			20.6	42.9	53.2	35.2	52.9	52.9	38.7	31.4	30.5	24.7	24.9	23.7	23.9	6.2	13.2	50.8	67.7	70.0								

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	2	1	1	1	1		2			2	3	3	3	3	3	3	
30T Excavator	2	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
20T Dumper	3	3	6	3	6	6	4	4	4	6	6	6	6	6	6	4	4	4	
Smooth Drum vibrio road roller	1	2	2	1	1	1	1		1	1	1		1	1	1	2	2	2	
21T excavator	1	2	2	1	3	3	3	3	3	3	3	3	3	3	3	2	2	2	
5T Forward Tipping Dumper	1	2	2	1	3	3	3	3	3	3	3	3	3	2	2	2	2	2	
Loading shovel	1	2	2	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Trench Roller					2	2	2	2	2	2	2	2	2	2	2				
Tractor & fencing kit	1	1	1	1	1	1	1		1				1	1	1	1	1	1	
Tractor & trailer	1	2	2	1	3	3	3	2	2	3	3	3	2	2	2	2	2	2	
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & cable drum trailer												1	1	1	1				
Tractor & soil tiller, roller, seeder																1	1	1	
Cement mixer													1	1	1				
Mobile crane												1	1	1	1				
Grader	1	2	2	1	1	1	1		1										
Cable laying tracked crane												1	1	1					
Cable winch												1	1	1	1				
Pre-cast concrete truck													1	1	1				
Mobile concrete pump										1	2	2	1	1					
Telehandler	1	2	2	1	3	3	3	2	3	3	3	3	3	3	1				
Mobile self-contained welfare unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Crawler Crane					1	1	1	1	1	1	1	1	1	1	1				
Mobile generator deliveries (corrected for 2 per delivery)	2	2	2	1	3	3	3	2	2	4	6	8	7	7	5	2	2	2	
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	3	3	2	3	3	4	5	3	3	3	2	2	2	
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)					1	1	2	1	1	2	3	4	3	3	2				
Total Plant Onsite In Section Per Month	21	31	33	20	41	41	40	31	38	41	46	55	53	53	46	30	30	30	
Total Deliveries / Removals	21	10	4	13	21	0	3	9	7	11	5	11	12	0	7	20	0	30	
Average Deliveries / Removals Per Day	1.0	0.5	0.2	0.6	1.0	0.0	0.1	0.4	0.3	0.5	0.2	0.5	0.5	0.0	0.3	0.9	0.0	1.4	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	2	2	0	1	1	1	1	1	1	2	0	1	2	0	3	

Section 1 (Including Landfall & Transition Bay Works)

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCC and site accesses	44	132	3	3																										
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	110	330		3	3	3	3	3																						
Cable Construction Works																														
Trench Excavation and duct installation	198	396					2	2	2	2	2	2	2	2	2															
Trench Backfill with CBS and protective covers	198	396					2	2	2	2	2	2	2	2	2															
Jointing Bay Excavation	88	176											2	2	2	2														
Jointing Bay Base Construction	88	176											2	2	2	2	2													
Pulling and connection of cables	88	264													3	3	3	3												
Backfill over Jointing Bays	88	176													2	2	2	2	2											
HDD At Landfall																														
Establish Landfall HDD construction compound	22	66			3																									
HDD Drilling works & Ducting (assume working 24/7 7 days a week) Includes Admin of HDD Compound	180	2,880				16	16	16	16	16	16																			
Transition Bays at Landfall																														
Excavation of transition bays	44	88											2	2																
Construction of transition bay base and walls	66	198											3	3	3															
Connection of Cables in Transition Bays	66	198													3	3	3													
Transition bay Roof and backfill over transition bay	66	198														3	3	3												
Landfall Compound Removal and Reinstatement	66	198																		3	3	3								
Minor HDD crossing of B1242 (OB ID S1-RX-1 OR S1-RX-2) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compound	22	44							2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110								5																				
Remove of onshore HDD Entry and Exit Compounds - materials reused at next minor HDD	22	22									1																			
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S1-UUX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds - materials from previous minor HDD	22	22									1																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110										5																		
Remove of onshore HDD Entry and Exit Compound	22	44																	2											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	198																												
TCC and access road Removal	44	132																												
Plant Operators																														
Overall Plant Operators	468	13,650	17	26	28	16	33	33	31	25	31	31	32	37	38	38	34	25	25	25										
Section 1 Engineering Personnel																														
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4										
Average Total Employees per day			24	36	38	39	60	60	57	54	57	49	49	60	61	57	48	35	38	38										
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	76	78	120	120	114	108	114	98	98	120	122	114	96	70	76	76										

Section 1 (Including Landfall & Transition Bay Works)
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	21	43	53	35	53	53	39	31	31	25	25	24	24	6	13	51	68	70
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	23	48	60	40	59	59	44	35	34	28	28	27	27	7	15	57	76	78
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	2	2	0	1	1	1	1	1	1	2	0	1	2	0	3
Average total two-way HGV Movements Per Day	25	49	61	42	61	59	45	36	35	29	29	28	29	7	16	59	76	81
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	76	78	120	120	114	108	114	98	98	120	122	114	96	70	76	76
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	84	86	132	132	126	119	126	108	108	132	135	126	106	77	84	84
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	78	129	145	128	193	191	171	155	161	137	137	160	164	133	122	136	160	165

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																			
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Establish TCCs and site accesses	44	190	4.3	4.3																		
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																			
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	88	1,194		13.6	13.6	13.6	13.6															
Cable Construction Works																						
Trench Excavation and duct installation	176	934						5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3							
Trench Backfill with CBS and protective covers	176	716						4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1							
Jointing Bay Excavation	66	33													0.5	0.5	0.5					
Jointing Bay Base Construction	66	31													0.5	0.5	0.5					
Pulling and connection of cables	66	54														0.8	0.8	0.8				
Backfill over Jointing Bays	66	21														0.3	0.3	0.3				
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	1,194																18.1	18.1	18.1		
Demobilisation of Welfare from TCC	22	13																		0.6		
TCC and access road Removal	44	190																		4.3		
Average Section Skip HGV Movements Per Day	396	117	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
Total HGVs per day			5.2	18.2	13.9	13.9	13.9	9.7	9.7	9.7	9.7	9.7	9.7	9.7	10.6	11.8	2.4	1.4	18.4	22.7		
Total two-way HGV movements per day			10.4	36.4	27.7	27.7	27.7	19.3	19.3	19.3	19.3	19.3	19.3	19.3	21.3	23.6	4.8	2.9	36.8	45.4		

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1	1	1								2	2	2	2	3	3	
30T Excavator	2	3	2	2	2	3	3	3	3	3	3	3	3	3	2	2	3	3	
20T Dumper	3	3	3	3	3	4	4	4	4	4	4	6	6	4	2	2	4	4	
Smooth Drum vibrio road roller	1	2	1	1	1											1	2	2	
21T excavator	1	2	1	1	1	3	3	3	3	3	3	3	3	2	1	1	2	2	
5T Forward Tipping Dumper	1	2	1	1	1	3	3	3	3	3	3	3	2	2	1	1	2	2	
Loading shovel	1	2	1	1	1	3	3	3	3	3	3	3	3	1	1	2	3	3	
Trench Roller						2	2	2	2	2	2	2	2	1	1				
Tractor & fencing kit	1	1	1	1	1											1	1	1	
Tractor & trailer	1	2	1	1	1	2	2	2	2	2	2	3	3	1		1	2	2	
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & cable drum trailer													1	1	1				
Tractor & soil tiller, roller, seeder																1	1	1	
Cement mixer																			
Mobile crane																			
Grader	1	2	1	1	1														
Cable laying tracked crane																			
Cable winch													1	1	1				
Pre-cast concrete truck																			
Mobile concrete pump												1	1	1					
Telehandler	1	2	1	1	1	2	2	2	2	2	2	3	3	1					
Mobile self-contained welfare unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Crawler Crane						1	1	1	1	1	1	1	1						
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	1	2	2	2	2	2	2	3	6	3	2	1	2	2	
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	2	2	2	2	2	2	3	4	2	1	2	2	2	
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)						1	1	1	1	1	1	3	3	2	1				
Total Plant Onsite in Section Per Month	21	31	20	20	20	31	31	31	31	31	31	40	47	30	19	20	30	30	
Total Deliveries / Removals	21	10	11	0	0	19	0	0	0	0	0	9	9	17	11	11	10	30	
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.8	0.5	0.5	0.5	1.4	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	0	2	0	0	0	0	0	1	1	2	1	1	1	3	

Section 2

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCC and site accesses	44	132	3	3																										
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	88	264		3	3	3	3																							
Cable Construction Works																														
Trench Excavation and duct installation	176	352						2	2	2	2	2	2	2	2															
Trench Backfill with CBS and protective covers	176	352						2	2	2	2	2	2	2	2	2														
Jointing Bay Excavation	66	132														2	2	2												
Jointing Bay Base Construction	66	132														2	2	2												
Pulling and connection of cables	66	198															3	3	3											
Backfill over Jointing Bays	66	132														2	2	2												
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	78	234																		3	3	3								
TCC and access road Removal	52	156																							3	3				
Plant Operators																														
Overall Plant Operators	468	10,556	17	26	16	16	16	25	25	25	25	25	25	30	33	22	14	16	25	25										
Section 1 Engineering Personnel																														
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4											
Average Total Employees per day			24	36	23	23	23	33	33	33	33	33	33	42	50	35	23	23	35	35										
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	46	46	66	66	66	66	66	66	84	100	70	46	46	70	70										

Section 2

Indicative Total Vehicle Movement Requirements

Activity	Month																			
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	36	28	28	28	19	19	19	19	19	19	21	24	5	3	37	45	47		
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	40	31	31	31	22	22	22	22	22	22	24	26	6	4	41	50	52		
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	0	2	0	0	0	0	0	1	1	2	1	1	1	3		
Average total two-way HGV Movements Per Day	14	41	32	31	31	24	22	22	22	22	22	25	27	8	5	42	51	55		
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	46	66	66	66	66	66	66	84	100	70	46	46	70	70		
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	51	73	73	73	73	73	73	93	110	77	51	51	77	77		
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	121	83	82	82	97	95	95	95	95	95	118	137	85	56	93	128	132		

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																			
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Establish TCCs and site accesses	44	190	4.3	4.3																		
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																			
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	66	875		13.3	13.3	13.3																
Cable Construction Works																						
Trench Excavation and duct installation	132	716								5.4	5.4	5.4	5.4	5.4	5.4							
Trench Backfill with CBS and protective covers	132	548								4.2	4.2	4.2	4.2	4.2	4.2							
Jointing Bay Excavation	66	27												0.4	0.4	0.4						
Jointing Bay Base Construction	66	26												0.4	0.4	0.4						
Pulling and connection of cables	66	45													0.7	0.7	0.7					
Backfill over Jointing Bays	66	18													0.3	0.3	0.3					
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Exit Only																						
Establish HDD Exit Pit Compound	22	54					2.5															
Mobilisation of HDD Kit and Welfare to compounds	22	5					0.2															
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month	66	16						0.2	0.2	0.2												
Demobilisation of HDD Kit and welfare.	22	5									0.2											
Remove of onshore HDD Exit Compound	22	54															2.5					
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	875																13.3	13.3	13.3		
Demobilisation of Welfare from TCC	22	13																		0.6		
TCC and access road Removal	44	190																	4.3	4.3		
Average Section Skip HGV Movements Per Day	396	124	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
Total HGVs per day			5.2	17.9	13.6	13.6	3.0	0.6	0.6	10.1	10.1	9.9	9.9	10.7	11.6	2.1	3.7	13.6	17.9	18.5		
Total two-way HGV movements per day			10.4	35.8	27.1	27.1	6.0	1.1	1.1	20.3	20.2	19.8	19.8	21.4	23.3	4.1	7.4	27.1	35.8	37.0		

Section 3

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer	1	2	1	1	1								2	2	2	2	3	3
30T Excavator	2	3	2	2	2			3	3	3	3	3	3	3	3	2	3	3
20T Dumper	3	3	3	3				4	4	4	4	6	6	4	4	2	4	4
Smooth Drum vibrio road roller	1	2	1	1	1										1	1	2	2
21T excavator	1	2	1	1	1			3	3	3	3	3	3	2	2	1	2	2
5T Forward Tipping Dumper	1	2	1	1	1			3	3	3	3	3	2	2	2	1	2	2
Loading shovel	1	2	1	1	1			3	3	3	3	3	3	1	3	2	3	3
Trench Roller								2	2	2	2	2	2	1	1			
Tractor & fencing kit	1	1	1	1	1										1	1	1	1
Tractor & trailer	1	2	1	1	1			2	2	2	2	3	3	1	1	1	2	2
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1
Tractor & Water bowser (for dust suppression)	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1
Tractor & cable drum trailer													1	1	1			
Tractor & soil tiller, roller, seeder																1	1	1
Cement mixer																		
Mobile crane																		
Grader	1	2	1	1	1													
Cable laying tracked crane																		
Cable winch													1	1	1			
Pre-cast concrete truck												1	1	1				
Mobile concrete pump																		
Telehandler	1	2	1	1	1			2	2	2	2	3	3	1				
Mobile self-contained welfare unit	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1
Crawler Crane								1	1	1	1	1	1					
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	1			2	2	2	2	3	6	3	3	1	2	2
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2			2	2	2	2	3	4	2	2	2	2	2
Road surface paver & roller	1	1																
Pump deliveries (corrected for 4 per delivery)								1	1	1	1	3	3	2	1			
Total Plant Onsite In Section Per Month	21	31	20	20	17	0	0	31	31	31	31	40	47	30	31	20	30	30
Total Deliveries / Removals	21	10	11	0	20	0	0	31	0	0	0	9	9	17	7	13	10	30
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.9	0.0	0.0	1.4	0.0	0.0	0.0	0.4	0.4	0.8	0.3	0.6	0.5	1.4
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	2	0	0	3	0	0	0	1	1	2	1	2	1	3

Section 3

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCC and site accesses	44	132	3	3																
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	66	198		3	3	3														
Cable Construction Works																				
Trench Excavation and duct installation	132	264								2	2	2	2	2	2					
Trench Backfill with CBS and protective covers	132	264								2	2	2	2	2	2					
Jointing Bay Excavation	66	132												2	2	2				
Jointing Bay Base Construction	66	132												2	2	2				
Pulling and connection of cables	66	198													3	3	3			
Backfill over Jointing Bays	66	132													2	2	2			
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Exit Only																				
Establish HDD Exit Pit Compounds	22	44					2													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	66	132						2	2	2										
Remove of onshore HDD Entry and Exit Compounds	22	44															2			
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	78	234																3	3	3
TCC and access road Removal	52	156																	3	3
Plant Operators																				
Overall Plant Operators	416	9,438	17	26	16	16	13			25	25	25	25	30	33	22	24	16	25	25
Section 1 Engineering Personnel																				
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Average Total Employees per day			24	36	23	23	19	6	6	35	33	33	33	42	50	35	35	23	35	35
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	46	38	12	12	70	66	66	66	84	100	70	70	46	70	70

Section 3
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	36	27	27	6	1	1	20	20	20	20	21	23	4	7	27	36	37
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	40	30	30	7	2	2	23	23	22	22	24	26	5	9	30	40	41
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	2	0	0	3	0	0	0	1	1	2	1	2	1	3
Average total two-way HGV Movements Per Day	14	41	31	30	9	2	2	26	23	22	22	25	27	7	10	32	41	44
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	38	12	12	70	66	66	66	84	100	70	70	46	70	70
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	42	14	14	77	73	73	73	93	110	77	77	51	77	77
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	121	82	81	51	16	16	103	96	95	95	118	137	84	87	83	118	121

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	532		12.1	12.1															
Cable Construction Works																				
Trench Excavation and duct installation	66	278			4.2	4.2	4.2													
Trench Backfill with CBS and protective covers	66	213			3.2	3.2	3.2													
Jointing Bay Excavation	44	17											0.4	0.4						
Jointing Bay Base Construction	44	16											0.4	0.4						
Pulling and connection of cables	44	27												0.6	0.6					
Backfill over Jointing Bays	44	12												0.3	0.3					
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Entry Only																				
Establish HDD Entry Pit Compound	22	104					4.7													
Mobilisation of HDD Kit and Welfare to compounds	22	25					1.1													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	29						0.4	0.4	0.4										
Demobilisation of HDD Kit and welfare - Reuse at next HDD In Section	22	0									0.0									
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	0									0.0									
Major HDD crossing of Stream Dike (OB ID S4-WX-1) - HDD Entry Only																				
Establish HDD Entry Pit Compound - Reuse from previous HDD in section.	22	0									0.0									
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in section.	22	0									0.0									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	29										0.6	0.6							
Demobilisation of HDD Kit and welfare.	22	25												1.1						
Remove of onshore HDD Entry Compound	22	104														4.7				
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	532														12.1	12.1			
Demobilisation of Welfare from TCC	22	13															0.6			
TCC and access road Removal	44	190														4.3	4.3			
Average Section Skip HGV Movements Per Day	330	110	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
Total HGVs per day			5.2	16.7	19.9	7.8	13.6	0.8	0.8	0.8	0.3	1.0	1.7	3.1	1.2	21.5	17.3	0.0	0.0	0.0
Total two-way HGV movements per day			10.5	33.5	39.7	15.5	27.3	1.5	1.5	1.5	0.7	2.0	3.5	6.2	2.4	42.9	34.7	0.0	0.0	0.0

Section 4 (Including Landfall & Transition Bay Works)

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1		1				2			2	2	3	3				
30T Excavator	2	3	3	3	3				2		2	3	2	3	3				
20T Dumper	3	3	6	4	4				2		2	4	2	4	4				
Smooth Drum vibrio road roller	1	2	1		1				1					2	2				
21T excavator	1	2	3	3	3				1		1	2	1	2	2				
5T Forward Tipping Dumper	1	2	3	3	3				1		1	2	1	2	2				
Loading shovel	1	2	3	3	3				2			1	1	3	3				
Trench Roller			2	2	2							1	1						
Tractor & fencing kit	1	1	1		1				1					1	1				
Tractor & trailer	1	2	3	2	3				1		1	1		2	2				
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1				1		1	1	1	1	1				
Tractor & Water bowser (for dust suppression)	1	1	1	1	1				1		1	1	1	1	1				
Tractor & cable drum trailer												1	1						
Tractor & soil tiller, roller, seeder														1	1				
Cement mixer																			
Mobile crane																			
Grader	1	2	1		1				1										
Cable laying tracked crane																			
Cable winch												1	1						
Pre-cast concrete truck																			
Mobile concrete pump											1	1							
Telehandler	1	2	3	2	3				1		1	1							
Mobile self-contained welfare unit	1	1	1	1	1				1		1	1	1	1	1				
Crawler Crane			1	1	1														
Mobile generator deliveries (corrected for 2 per delivery)	2	2	3	2	3				2		2	3	2	2	2				
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	3	2	3				1		1	2	1	2	2				
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)			1	1	2						1	2	1						
Total Plant Onsite In Section Per Month	21	31	41	31	40	0	0	0	21	0	16	30	19	30	30	0	0	0	
Total Deliveries / Removals	21	10	18	10	49	0	0	0	42	0	16	14	11	19	30	0	0	0	
Average Deliveries / Removals Per Day	1.0	0.5	0.8	0.5	2.2	0.0	0.0	0.0	1.9	0.0	0.7	0.6	0.5	0.9	1.4	0.0	0.0	0.0	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	2	1	5	0	0	0	4	0	2	2	1	2	3	0	0	0	

Section 4 (
Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCC and site accesses	44	132	3	3																								
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3																							
Cable Construction Works																												
Trench Excavation and duct installation	66	132			2	2	2																					
Trench Backfill with CBS and protective covers	66	132			2	2	2																					
Jointing Bay Excavation	44	88											2	2														
Jointing Bay Base Construction	44	88											2	2														
Pulling and connection of cables	44	132												3	3													
Backfill over Jointing Bays	44	88												2	2													
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Entry Only																												
Establish HDD Entry Pit Compound	22	44					2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	66	198						3	3	3																		
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	22									1																	
Major HDD crossing of Stream Dike (OB ID S4-WX-1) - HDD Entry Only																												
Establish HDD Entry Pit Compound - Reuse from previous HDD in section.	22	22									1																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	44	132										3	3															
Remove of onshore HDD Entry and Exit Compounds	22	44														2												
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156														3	3											
TCC and access road Removal	52	156														3	3											
Plant Operators																												
Overall Plant Operators	286	6,396	17	26	33	25	31				17		11	22	14	25	25											
Section 1 Engineering Personnel																												
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,560	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4											
Average Total Employees per day			24	36	44	33	41	7	7	7	23	7	22	35	23	37	35	0	0	0								
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	88	66	82	14	14	14	46	14	44	70	46	74	70	0	0	0								

Section 4
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	33	40	16	27	2	2	2	1	2	3	6	2	43	35	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	38	45	18	31	2	2	2	1	3	4	7	3	49	39	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	2	1	5	0	0	0	4	0	2	2	1	2	3	0	0	0
Average total two-way HGV Movements Per Day	14	39	47	19	36	2	2	2	5	3	6	9	4	51	42	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	88	66	82	14	14	14	46	14	44	70	46	74	70	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	97	73	91	16	16	16	51	16	49	77	51	82	77	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	119	144	92	127	18	18	18	56	19	55	86	55	133	119	0	0	0

Section 5
Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

[illegible]

Indicative Construction Plant Requirements

Page 39 of 75

Section 5

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCC and site accesses	44	132	3	3																										
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	88	264		3	3	3	3																							
Cable Construction Works																														
Trench Excavation and duct installation	132	264								2	2	2	2	2	2															
Trench Backfill with CBS and protective covers	132	264								2	2	2	2	2	2															
Jointing Bay Excavation	66	132														2	2													
Jointing Bay Base Construction	66	132															2	2	2											
Pulling and connection of cables	66	198																	3	3	3									
Backfill over Jointing Bays	66	132																	2	2	2									
Major HDD crossing of Stream Dike (OB ID S04-WX-1) - HDD Exit Only																														
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section	22	22									1																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	44	132												3	3															
Remove of onshore HDD Entry and Exit Compound	22	44																									2			
Major HDD crossing of Monk Dike and Meaux & Routh East Drain (OB IDs S06-WX-1 and S6-WX-2) - HDD Entry Only																														
Establish HDD Entry Pit Compound - Reuse from previous HDD in section with additional material delivered to site	22	22					1																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	66	396						6	6	6																				
Remove of onshore HDD Entry Compound - reuse of some material at next HDD in section with some material removed from site	22	22									1																			
Minor HDD crossing of A166 (OB ID S6-RX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	44			2																									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110				5																								
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	22					1																							
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	104	312																	3	3	3	3								
TCC and access road Removal	52	156																									3	3		
Plant Operators																														
Overall Plant Operators	416	10,244	17	26	26	16	27				25	31	25	25	30	33	22	26	16	25	25									
Section 1 Engineering Personnel																														
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Average Total Employees per day			24	26	34	28	36	10	10	39	41	36	36	42	50	35	40	23	35	35										
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	68	56	72	20	20	78	82	72	72	84	100	70	80	46	70	70										

Section 5

Indicative Total Vehicle Movement Requirements

Activity	Month																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	11	34	37	29	30	2	2	22	28	21	21	24	24	4	6	34	43	44												
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	38	41	33	34	3	3	24	31	23	23	27	27	5	7	38	48	49												
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	1	4	0	0	3	1	1	0	1	1	2	1	2	1	3												
Average total two-way HGV Movements Per Day	14	39	42	34	38	3	3	27	32	24	23	28	28	7	8	40	49	52												
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	68	56	72	20	20	78	82	72	72	84	100	70	80	46	70	70												
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	75	62	80	22	22	86	91	80	80	93	110	77	88	51	77	77												
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	119	117	96	118	25	25	113	123	104	103	121	138	84	96	91	126	129												

Section 6
Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HDVs	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCCs and site accesses	44	327	7.4	7.4																										
Mobilisation of Welfare and Operation Plant to TCC	22	32	1.9																											
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	88	1,180		13.1	13.1	13.1	13.1																							
Cable Construction Works																														
Trench Excavation and dust installation	154	796							5.2	5.2	5.2	5.2	5.2	5.2	5.2															
Trench Backfill with CBS and protective covers	154	611							4.0	4.0	4.0	4.0	4.0	4.0	4.0															
Joining Bay Excavation	66	33													0.5	0.5	0.5													
Joining Bay Base Construction	66	31													0.5	0.5	0.5													
Putting and connection of cables	66	54														0.6	0.6	0.6												
Backfill over Joining Bays	66	21														0.3	0.3	0.3												
Major HDD crossing of Holderness Drain (OB ID S6-WX-3) - HDD Entry Only																														
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	51									2.3																			
Mobilisation of HDD Kit and Welfare to compounds	22	25									1.1																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	30										0.7	0.7																	
Demobilisation of HDD Kit and welfare	22	25												1.1																
Remove of onshore HDD Entry Compound	22	105																4.8												
Major HDD crossing of Munk Dike and Munk & South East Drain (OB IDs S6-WX-1 and S6-WX-2) - HDD Exit Only																														
Establish HDD Exit Pit Compound	22	54						2.5																						
Mobilisation of HDD Kit and Welfare to compounds	22	5					0.2																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	15						0.2	0.2	0.2																				
Demobilisation of HDD Kit and welfare	22	5									0.2																			
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0									0.0																			
Minor HDD crossing of A1835 (OB ID S6-RX-01) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	97					4.4																							
Mobilisation of HDD Kit and Welfare to compounds	22	19				0.5																								
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	35					1.5																							
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0						0.0																						
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	0						0.0																						
Minor HDD crossing of Onshore Export Cable of Dogger Bank A & B (OB ID S6-UJK-2) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds - Reuse from previous HDD in Section	22	0						0.0																						
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0						0.0																						
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	35						1.8																						
Demobilisation of HDD Kit and welfare	22	19								0.9																				
Remove of onshore HDD Entry and Exit Compounds	22	97																4.4												
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	1,180																										17.4	17.4	17.4
Demobilisation of Welfare from TCC	22	32																											7.4	7.4
TCC and access road Removal	44	327																												
Average Section Skip HGV Movements Per Day	396	286	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Total HDVs per day			9.5	21.1	13.7	19.0	18.0	0.9	11.6	10.9	13.5	10.5	10.5	11.9	11.9	2.8	10.9	18.1	25.5	27.0										
Total two-way HGV movements per day			19.1	42.3	27.4	37.9	36.0	1.7	23.2	21.7	26.9	20.9	20.9	23.8	23.8	5.5	21.9	36.1	51.0	53.9										

Section 6

Indicative Construction Plant Requirements

Plant	Month																														
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30													
D8 Dozer	1	2	1	2	2	2			2				2	2	2	2	3	3													
30T Excavator	2	3	2	3	3	2	3	3	3	3	3	3		3	3	3	2	3	3												
20T Dumper	3	3	3	3	3	2	4	4	4	4	4	6	6	6	4	4	2	4	4												
Smooth Drum vibrle road roller	1	2	1	2	2	1			1							1	1	2													
21T excavator	1	2	1	2	2	1	3	3	3	3	3	3	3	3	2	2	1	2	2												
ST Forward Tipping Dumper	1	2	1	2	2	1	3	3	3	3	3	3	3	2	2	2	1	2	2												
Loading shovel	1	2	1	2	2	2	3	3	3	3	3	3	3	3	1	3	2	3	3												
Trench Beller								2	2	2	2	2	2	2	1	1															
Tractor & grading kit	1	1	1	1	1	1			1								1	1	1	1											
Tractor & trailer	1	2	1	2	2	1	2	2	2	2	2	2	3	3	1	1	1	2	2												
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1												
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1												
Tractor & cable drum trailer														1	1	1															
Tractor & soil tiller, roller, seeder																											1	1	1		
Cement mixer																															
Mobile crane																															
Grader	1	2	1	2	2	1				1																					
Cable laying tracked crane																															
Cable winch																															
Pts-eat concrete truck																															
Mobile concrete pump																															
Vibrohammer	1	2	1	2	2	1	2	2	3	2	2	3	3	1																	
Mobile self-contained welfare unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
Crawler Crane										1	1	1	1	1																	
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	2	2	2	2	2	2	2	2	2	3	6	3	3	1	2	2												
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	1	2	2	3	2	2	2	3	4	2	2	2	2	2												
Road surface paver & roller	1	1																													
Pump deliveries (corrected for 4 per delivery)									1	1	1	1	1	3	3	2	1														
Total Plant Onsite In Section Per Month	21	31	20	30	30	21	31	31	38	31	31	40	47	30	31	20	30	30													
Total Deliveries / Removals	21	10	11	9	8	9	20	9	7	7	0	9	9	17	7	13	10	30													
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.5	0.0	0.4	0.9	0.0	0.3	0.3	0.0	0.4	0.4	0.8	0.3	0.6	0.5	1.4													
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	1	1	0	1	2	0	1	1	0	1	1	2	1	2	1													

Section 6

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																												
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30											
Establish TCC and site accesses	44	132	3	3																											
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	88	264		3	3	3	3																								
Cable Construction Works																															
Trench Excavation and duct installation	164	308								2	2	2	2	2	2	2	2														
Trench Backfill with CBS and protective covers	164	308								2	2	2	2	2	2	2	2														
Joining Bay Excavation	66	132															2	2	2												
Joining Bay Base Construction	66	132															2	2	2												
Putting and connection of cables	66	198																									3	3	3		
Backfill over Joining Bays	66	132																									3	2	2		
Major HDD crossing of Holderness Drain (OB ID S6-WX-6) - HDD Entry Only																															
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22												1																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	44	264															6	6													
Remove of onshore HDD Entry Compound	22	22																													
Major HDD crossing of Monk Oke and Meaux & Routh East Drain (OB IDs S6-WX-1 and S6-WX-2) - HDD Exit Only																															
Establish HDD Exit Pit Compound	22	44						2																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	66	198								3	3	3																			
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22															1														
Minor HDD crossing of A1035 (OB ID S6-RX-1) - HDD Entry and Exit																															
Establish HDD Entry and Exit Pit Compound	22	44					2																								
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110								6																					
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	22									1																				
Minor HDD crossing of Onshore Export Cables of Dogger Band A & B (OB ID S6-UX-1) - HDD Entry and Exit																															
Establish HDD Entry and Exit Pit Compounds - Reuse from previous HDD in Section.	22	22								1																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110										5																			
Remove of onshore HDD Entry and Exit Compounds	22	22																													
Haul Road Removal (includes removal of fencing) and permanent closure of cable route	78	234																													
TCC and access road Removal	62	166																													
Plant Operators																															
Overall Plant Operators	468	11,232	17	26	16	25	25	17	25	25	31	26	25	30	33	22	24	16	25	25											
Section 1 Engineering Personnel																															
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4											
Project Engineering Personnel Based at Miah TCC																															
Head Engineer, 2 x Admin Staff, QS, Assistant QS, Overall Site Foreman, M&S Supervisor, M&S Assistant, Environmental Clerk, Assistant Environmental Clerk, Lead Surveyor, 2 collecting staff, 2 x client representative, 2 x owners engineers, 3 x additional allowance	468	9,360	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Average Total Employees per day			44	56	43	54	59	46	61	56	61	59	59	62	70	55	55	43	55	55											
Maximum Total Employee Two-way Movements Per Day (car/mile van)			88	112	86	108	118	92	122	112	122	118	118	124	140	110	110	86	110	110											

Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	19	42	27	38	36	2	23	22	27	21	21	24	24	6	22	36	51	54	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Welfare Movements Tab where the percentage increase is presented	21	47	31	42	40	2	26	24	30	23	23	27	27	7	25	40	57	60	
Construction Plant Average Total Two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	1	0	1	2	0	1	1	0	1	1	2	1	2	1	3	
Average total two-way HGV Movements Per Day	23	48	32	43	40	3	28	24	31	24	23	28	28	9	26	42	58	63	
Maximum Total Employee Two-way Movements Per Day (car/mal van)	88	112	86	108	118	92	122	112	128	118	118	124	140	110	110	86	110	110	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	97	124	95	119	130	102	135	124	136	130	130	137	154	121	121	96	121	121	
Maximum Total HGV and Car/mal van Two-way Movements Per Day (car/mal van)	120	172	127	162	170	105	163	148	166	154	163	165	182	130	147	137	179	184	

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																			
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Establish TCCs and site accesses	44	190	4.3	4.3																		
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																			
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	608		13.8	13.8																	
Cable Construction Works																						
Trench Excavation and duct installation	88	474				5.4	5.4	5.4	5.4													
Trench Backfill with CBS and protective covers	88	364				4.1	4.1	4.1	4.1													
Jointing Bay Excavation	44	17											0.4	0.4								
Jointing Bay Base Construction	44	16											0.4	0.4								
Pulling and connection of cables	44	27												0.6	0.6							
Backfill over Jointing Bays	44	12												0.3	0.3							
Major HDD crossing of Holderness Drain (OB ID S6-WX-3) - HDD EXIT Only																						
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	0									0.0											
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0											
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	8										0.2	0.2									
Demobilisation of HDD Kit and welfare	22	5												0.2								
Remove of onshore HDD Entry Compound	22	53														2.4						
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Exit Only																						
Establish HDD Exit Pit Compound	22	53					2.4															
Mobilisation of HDD Kit and Welfare to compounds	22	5					0.2															
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	8						0.1	0.1	0.1												
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0											
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0									0.0											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	608														13.8	13.8					
Demobilisation of Welfare from TCC	22	13															0.6					
TCC and access road Removal	44	190														4.3	4.3					
Average Section Skip HGV Movements Per Day	330	110	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3					
Total HGVs per day			5.2	18.5	14.2	9.9	12.5	10.0	10.0	0.5	0.3	0.5	1.3	2.2	1.2	20.9	19.1	0.0	0.0	0.0		
Total two-way HGV movements per day			10.5	36.9	28.3	19.7	24.9	20.0	20.0	0.9	0.7	1.0	2.5	4.4	2.4	41.7	38.1	0.0	0.0	0.0		

Section 7

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer	1	2	1		1				2			2	2	3	3			
30T Excavator	2	3	2	3	3	3	3		2		2	3	2	3	3			
20T Dumper	3	3	3	4	4	4	4		2		2	4	2	4	4			
Smooth Drum vibrio road roller	1	2	1		1				1					2	2			
21T excavator	1	2	1	3	3	3	3		1		1	2	1	2	2			
5T Forward Tipping Dumper	1	2	1	3	3	3	3		1		1	2	1	2	2			
Loading shovel	1	2	1	3	3	3	3		2			1	1	3	3			
Trench Roller				2	2	2	2					1	1					
Tractor & fencing kit	1	1	1		1				1					1	1			
Tractor & trailer	1	2	1	2	3	2	2		1		1	1		2	2			
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1		1		1	1	1	1	1			
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1		1		1	1	1	1	1			
Tractor & cable drum trailer												1	1					
Tractor & soil tiller, roller, seeder														1	1			
Cement mixer																		
Mobile crane																		
Grader	1	2	1		1				1									
Cable laying tracked crane																		
Cable winch												1	1					
Pre-cast concrete truck																		
Mobile concrete pump												1	1					
Telehandler	1	2	1	2	3	2	2		1		1	1						
Mobile self-contained welfare unit	1	1	1	1	1	1	1		1		1	1	1	1	1			
Crawler Crane				1	1	1	1											
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	2	3	2	2		2		2	3	2	2	2			
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	2	2		1		1	2	1	2	2			
Road surface paver & roller	1	1																
Pump deliveries (corrected for 4 per delivery)				1	2	1	1					1	2	1				
Total Plant Onsite In Section Per Month	21	31	20	31	40	31	31	0	21	0	16	30	19	30	30	0	0	0
Total Deliveries / Removals	21	10	11	19	9	9	31	0	42	0	16	14	11	19	30	0	0	0
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.9	0.4	0.4	1.4	0.0	1.9	0.0	0.7	0.6	0.5	0.9	1.4	0.0	0.0	0.0
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	2	1	1	3	0	4	0	2	2	1	2	3	0	0	0

Section 7

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCC and site accesses	44	132	3	3																
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3															
Cable Construction Works																				
Trench Excavation and duct installation	88	176				2	2	2	2											
Trench Backfill with CBS and protective covers	88	176				2	2	2	2											
Jointing Bay Excavation	44	88											2	2						
Jointing Bay Base Construction	44	88											2	2						
Pulling and connection of cables	44	132												3	3					
Backfill over Jointing Bays	44	88												2	2					
Major HDD crossing of Holderness Drain (OB ID S6-WX-3) - HDD EXIT Only																				
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22									1									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132										3	3							
Remove of onshore HDD Entry Compound	22	44														2				
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Exit Only																				
Establish HDD Exit Pit Compound	22	44					2													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	66	198						3	3	3										
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22									1									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156														3	3			
TCC and access road Removal	52	156														3	3			
Plant Operators																				
Overall Plant Operators	338	7,254	17	26	16	25	31	25	25		17		11	22	14	25	25			
Section 1 Engineering Personnel																				
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,560	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
Average Total Employees per day			24	36	23	33	41	36	36	7	23	7	22	35	23	37	35	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	66	82	72	72	14	46	14	44	70	46	74	70	0	0	0

Section 7
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	37	28	20	25	20	20	1	1	1	3	4	2	42	38	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	41	32	22	28	22	22	1	1	2	3	5	3	46	42	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	2	1	1	3	0	4	0	2	2	1	2	3	0	0	0
Average total two-way HGV Movements Per Day	14	42	33	24	29	23	25	1	5	2	5	7	4	48	45	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	66	82	72	72	14	46	14	44	70	46	74	70	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	73	91	80	80	16	51	16	49	77	51	82	77	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	122	84	97	120	103	105	17	56	18	54	84	55	130	122	0	0	0

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																			
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Establish TCCs and site accesses	44	190	4.3	4.3																		
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																			
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	66	772		11.7	11.7	11.7																
Cable Construction Works																						
Trench Excavation and duct installation	66	358					5.4	5.4	5.4													
Trench Backfill with CBS and protective covers	66	275					4.2	4.2	4.2													
Jointing Bay Excavation	44	17											0.4	0.4								
Jointing Bay Base Construction	44	16											0.4	0.4								
Pulling and connection of cables	44	27												0.6	0.6							
Backfill over Jointing Bays	44	12												0.3	0.3							
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Entry Only																						
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	0									0.0											
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0											
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month	44	44										1.0	1.0									
Demobilisation of HDD Kit and welfare	22	25												1.1								
Remove of onshore HDD Entry Compound	22	104														4.7						
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Entry Only																						
Establish HDD Entry Pit Compound	22	104					4.7															
Mobilisation of HDD Kit and Welfare to compounds	22	25					1.1															
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month	66	44						0.7	0.7	0.7												
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0											
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0									0.0											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	772														17.5	17.5					
Demobilisation of Welfare from TCC	22	13															0.6					
TCC and access road Removal	44	190														4.3	4.3					
Average Section Skip HGV Movements Per Day	330	110	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3					
Total HGVs per day			5.2	16.3	12.0	12.0	15.8	10.6	10.6	1.0	0.3	1.3	2.1	3.1	1.2	26.9	22.8	0.0	0.0	0.0		
Total two-way HGV movements per day			10.5	32.7	24.1	24.1	31.6	21.2	21.2	2.0	0.7	2.7	4.2	6.2	2.4	53.8	45.6	0.0	0.0	0.0		

Section 8

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1	1	1				2			2	2	3	3				
30T Excavator	2	3	2	2	3	3	3		2		2	3	2	3	3				
20T Dumper	3	3	3	3	4	4	4		2		2	4	2	4	4				
Smooth Drum vibrio road roller	1	2	1	1	1				1					2	2				
21T excavator	1	2	1	1	3	3	3		1		1	2	1	2	2				
5T Forward Tipping Dumper	1	2	1	1	3	3	3		1		1	2	1	2	2				
Loading shovel	1	2	1	1	3	3	3		2			1	1	3	3				
Trench Roller					2	2	2					1	1						
Tractor & fencing kit	1	1	1	1	1				1					1	1				
Tractor & trailer	1	2	1	1	3	2	2		1		1	1		2	2				
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1		1		1	1	1	1	1				
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1		1		1	1	1	1	1				
Tractor & cable drum trailer												1	1						
Tractor & soil tiller, roller, seeder														1	1				
Cement mixer																			
Mobile crane																			
Grader	1	2	1	1	1				1										
Cable laying tracked crane																			
Cable winch												1	1						
Pre-cast concrete truck																			
Mobile concrete pump											1	1							
Telehandler	1	2	1	1	3	2	2		1		1	1							
Mobile self-contained welfare unit	1	1	1	1	1	1	1		1		1	1	1	1	1				
Crawler Crane					1	1	1												
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	3	2	2		2		2	3	2	2	2				
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	2	2		1		1	2	1	2	2				
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)					2	1	1				1	2	1						
Total Plant Onsite In Section Per Month	21	31	20	20	40	31	31	0	21	0	16	30	19	30	30	0	0	0	
Total Deliveries / Removals	21	10	11	0	20	9	31	0	42	0	16	14	11	19	30	0	0	0	
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.9	0.4	1.4	0.0	1.9	0.0	0.7	0.6	0.5	0.9	1.4	0.0	0.0	0.0	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	2	1	3	0	4	0	2	2	1	2	3	0	0	0	

Section 8

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCC and site accesses	44	132	3	3																								
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	66	198		3	3	3																						
Cable Construction Works																												
Trench Excavation and duct installation	66	132					2	2	2																			
Trench Backfill with CBS and protective covers	66	132					2	2	2																			
Jointing Bay Excavation	44	88											2	2														
Jointing Bay Base Construction	44	88											2	2														
Pulling and connection of cables	44	132												3	3													
Backfill over Jointing Bays	44	88												2	2													
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Entry Only																												
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22									1																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	264										6	6															
Remove of onshore HDD Entry Compound	22	44														2												
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Entry Only																												
Establish HDD Entry Pit Compound	22	44					2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	66	396						6	6	6																		
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22									1																	
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156														3	3											
TCC and access road Removal	52	156														3	3											
Plant Operators																												
Overall Plant Operators	338	7,020	17	26	16	16	31	25	25		17		11	22	14	25	25											
Section 1 Engineering Personnel																												
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,560	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4											
Average Total Employees per day			24	36	23	23	41	39	39	10	23	10	25	35	23	37	35	0	0	0								
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	46	82	78	78	20	46	20	50	70	46	74	70	0	0	0								

Section 8
Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	33	24	24	32	21	21	2	1	3	4	6	2	54	46	0	0	0	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	37	27	27	36	24	24	3	1	3	5	7	3	61	51	0	0	0	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	2	1	3	0	4	0	2	2	1	2	3	0	0	0	
Average total two-way HGV Movements Per Day	14	38	28	27	38	25	27	3	5	3	7	9	4	63	54	0	0	0	
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	82	78	78	20	46	20	50	70	46	74	70	0	0	0	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	91	86	86	22	51	22	55	77	51	82	77	0	0	0	
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	118	79	78	129	111	113	25	56	25	62	86	55	145	131	0	0	0	

Section 9

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																								
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30							
Establish TCCs and site accesses	44	190	4.3	4.3																							
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																								
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	344		7.8	7.8																						
Cable Construction Works																											
Trench Excavation and duct installation	44	266				6.0	6.0																				
Trench Backfill with CBS and protective covers	44	205				4.7	4.7																				
Jointing Bay Excavation	22	12												0.5													
Jointing Bay Base Construction	22	11												0.5													
Pulling and connection of cables	22	18														0.8											
Backfill over Jointing Bays	22	8														0.4											
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Exit Only																											
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	0										0.0															
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0										0.0															
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month	44	6											0.1	0.1													
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	5														0.2											
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	53															2.4										
Major HDD crossing of Catchwater Drain (OB IDs S9-WX-1) - HDD Exit Only																											
Establish HDD Exit Pit Compound	22	53						2.4																			
Mobilisation of HDD Kit and Welfare to compounds	22	5						0.2																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month	44	6							0.1	0.1																	
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0																
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0									0.0																
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	344														7.8	7.8										
Demobilisation of Welfare from TCC	22	13															0.6										
TCC and access road Removal	44	190														4.3	4.3										
Average Section Skip HGV Movements Per Day	308	102	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3											
Total HGVs per day			5.2	12.5	8.1	11.0	11.0	2.9	0.5	0.5	0.3	0.5	1.5	1.7	14.9	13.1	0.0	0.0	0.0	0.0							
Total two-way HGV movements per day			10.5	24.9	16.3	22.1	22.1	5.9	0.9	0.9	0.7	0.9	3.0	3.5	29.7	26.1	0.0	0.0	0.0	0.0							

Section 9
Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1			1			2			2	3	3					
30T Excavator	2	3	2	3	3	2			2		2	2	3	3					
20T Dumper	3	3	3	4	4				2		2	2	4	4					
Smooth Drum vibrio road roller	1	2	1			1			1				2	2					
21T excavator	1	2	1	3	3	1			1		1	1	2	2					
5T Forward Tipping Dumper	1	2	1	3	3	1			1		1	1	2	2					
Loading shovel	1	2	1	3	3	1			2			1	3	3					
Trench Roller				2	2							1							
Tractor & fencing kit	1	1	1			1			1				1	1					
Tractor & trailer	1	2	1	2	2	1			1		1		2	2					
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1			1		1	1	1	1					
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1			1		1	1	1	1					
Tractor & cable drum trailer												1							
Tractor & soil tiller, roller, seeder													1	1					
Cement mixer																			
Mobile crane																			
Grader	1	2	1			1			1										
Cable laying tracked crane																			
Cable winch												1							
Pre-cast concrete truck																			
Mobile concrete pump											1								
Telehandler	1	2	1	2	2	1			1		1								
Mobile self-contained welfare unit	1	1	1	1	1	1			1		1	1	1	1					
Crawler Crane				1	1														
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	2	2	1			2		2	2	2	2					
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	2			1		1	1	2	2					
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)				1	1						1	1							
Total Plant Onsite In Section Per Month	21	31	20	31	31	17	0	0	21	0	16	19	30	30	0	0	0	0	
Total Deliveries / Removals	21	10	11	19	0	39	0	0	42	0	16	9	19	30	0	0	0	0	
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.9	0.0	1.8	0.0	0.0	1.9	0.0	0.7	0.4	0.9	1.4	0.0	0.0	0.0	0.0	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	2	0	4	0	0	4	0	2	1	2	3	0	0	0	0	

Section 9

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																								
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30							
Establish TCC and site accesses	44	132	3	3																							
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3																						
Cable Construction Works																											
Trench Excavation and duct installation	44	88				2	2																				
Trench Backfill with CBS and protective covers	44	88				2	2																				
Jointing Bay Excavation	22	44											2														
Jointing Bay Base Construction	22	44											2														
Pulling and connection of cables	22	66													3												
Backfill over Jointing Bays	22	44													2												
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Exit Only																											
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22									1																
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132										3	3														
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	44														2											
Major HDD crossing of Catchwater Drain (OB IDs S9-WX-1) - HDD Exit Only																											
Establish HDD Exit Pit Compound	22	44						2																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132								3	3																
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22										1															
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156														3	3										
TCC and access road Removal	52	156														3	3										
Plant Operators																											
Overall Plant Operators	286	5,564	17	26	16	25	25	13			17		11	14	25	25											
Section 1 Engineering Personnel																											
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	364	1,456	4	4	4	4	4	4	4	4	4	4	4	4	4	4											
Average Total Employees per day			24	36	23	33	33	19	7	7	23	7	22	23	37	35	0	0	0	0							
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	66	66	38	14	14	46	14	44	46	74	70	0	0	0	0							

Section 9
Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	25	16	22	22	6	1	1	1	1	3	3	30	26	0	0	0	0	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	28	18	25	25	7	2	2	1	2	4	4	33	29	0	0	0	0	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	2	0	4	0	0	4	0	2	1	2	3	0	0	0	0	
Average total two-way HGV Movements Per Day	14	29	19	27	25	11	2	2	5	2	6	5	35	32	0	0	0	0	
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	66	66	38	14	14	46	14	44	46	74	70	0	0	0	0	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	73	73	42	16	16	51	16	49	51	82	77	0	0	0	0	
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	109	70	100	98	53	18	18	56	18	55	56	117	109	0	0	0	0	

Section 10
Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																													
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31											
Establish TCDs and site accesses	44	511	116	214																												
Rehabilitation of Welfare and Operation Plant to TCD	23	45	29																													
Site preparation including fencing, temporary drainage, road construction and topsoil strip.	66	917			128	109	128																									
Earth Construction Works																																
French Excavation and dust installation	110	577										52	52	52	52	52																
French Backfill with CSE and protective concrete	110	442										45	45	45	45	45																
Joining Bay Excavation	66	27																														
Joining Bay Back Construction	66	26																							54	54	54					
Drilling and connection of cables	66	43																							54	54	54					
Backfill over joining Bays	66	19																										57	57	57		
Minor HDD Laying of Catchwater Drain (DB 05-50-WB-1) - HDD Entry Only																																
Establish HDD Entry Pit Compound	22	185							49																							
Rehabilitation of HDD Pit and Welfare to compounds	22	25							15																							
HDD drilling works and ducting (average working 12 hrs, 6 days a week, average 22 days a month)	44	29										67	67																			
Rehabilitation of HDD Pit and Welfare	22	25																														
Remove of onshore HDD Exit Compound	22	185																													48	
Minor HDD Laying of Offshore Road (DB 05-518-RB-1) - HDD Entry and Exit																																
Establish HDD Entry and Exit Pit Compound	22	97							44																							
Rehabilitation of HDD Pit and Welfare to compounds	22	19							19																							
HDD drilling works and ducting (average working 12 hrs, 6 days a week, average 22 days a month)	22	25																														
Rehabilitation of HDD Pit and Welfare - Raised at end of HDD in section	22	9																														
Remove of onshore HDD Entry and Exit Compound - materials moved at end of HDD in section	22	9																														
Minor HDD Laying of A1152 (DB 05-518-RB-2) - HDD Entry and Exit																																
Establish HDD Entry and Exit Pit Compound - Raised from previous HDD in Section	22	9																														
Rehabilitation of HDD Pit and Welfare to compounds - Raised from previous HDD in Section	22	9																														
HDD drilling works and ducting (average working 12 hrs, 6 days a week, average 22 days a month)	22	25																														
Rehabilitation of HDD Pit and Welfare - Raised at end of HDD in section, and compound equipment removed from site	22	2																														
Remove of onshore HDD Entry and Exit Compound - some materials moved at end of HDD in section, and compound equipment removed from site	22	27																														
Minor HDD Laying of A1174 (DB 05-518-RB-4) - HDD Entry																																
Establish HDD Entry Pit Compound - Raised from previous HDD in Section	22	9																														
Rehabilitation of HDD Pit and Welfare to compounds - Raised from previous HDD in Section	22	9																														
HDD drilling works and ducting (average working 12 hrs, 6 days a week, average 22 days a month)	22	29																														

[illegible]

Section 16
Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drivers, lifting operators, electricians, joiners, bricklayers etc.)	Total Working Days	Total Person Days	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	01	02	03	04	05	06	
Establish TCC and site access	44	132	5	5																								
Site preparation including fencing, temporary drainage, final road construction and signal strip	66	198			5	5	5																					
Cable Construction Works	110	220																										
Trench Excavation and duct installation	110	220										5	5	5	5	5												
Trench Backfill with CSR and protective covers	110	220										2	5	5	5	5												
Joining Bay Excavation	66	132															5	5	5									
Joining Bay Base Construction	66	132																		5	5	5						
Pulling and connection of cables	66	198																		5	5	5						
Backfill over Joining Rays	66	132																			5	5	5					
Major HDD covering of Catchwater Drain (DR Dia 50-HD-1) - HDD Entry Only	22	44																										
Establish HDD Entry Pit Compound	22	44																										
HDD drilling work and dusting (average working 12 hrs, 6 days a week, average 32 days a month. Includes activity of HDD compound)	44	264																										
Removal of existing HDD Entry Compound	22	22																									7	
Minor HDD covering of Driveway Road (DR Dia 50-HD-1) - HDD Entry and Drive	22	44																										
Establish HDD Entry and Sub-Pit Compound	22	44																										
HDD drilling work and dusting (average working 12 hrs, 6 days a week, average 32 days a month. Includes activity of HDD compound)	22	110																										
Removal of existing HDD Entry and Sub-Compounds - activity commencing at approx 10:00 hrs, 6 days a week, average 32 days a month	22	22																										
Establish HDD Entry and Sub-Pit Compound	22	22																										
HDD drilling work and dusting (average working 12 hrs, 6 days a week, 6 days a month. Includes removal of HDD compound)	22	110																										
Removal of existing HDD Entry and Sub-Compounds - activity commencing at approx 10:00 hrs, 6 days a week, average 32 days a month	22	22																										
Minor HDD covering of A174 (DR Dia 50-HD-1) - HDD Entry	22	22																										
Establish HDD Entry Pit Compound	22	22																										
HDD drilling work and dusting (average working 12 hrs, 6 days a week, average 32 days a month. Includes activity of HDD compound)	22	66																										
Removal of existing HDD Entry Compound	22	22																										
Heat Road Removal (includes removal of fencing) and placement of cable ducts	18	234																										
TCC and access road Removal	62	186																										
Pipe Operations	412	9,174																										
Overall Plant Operations	488	1,872																										
Station Engineering Personnel																												
Lead Engineer, 1 Assistant Engineer, 1 Surveyor, 1 Electrician	488	1,872																										
Project Engineering Personnel Based at Main TCC																												
Head Engineer, 2 Admin Staff, GB, Assistant GB, Overall Site Personnel, 182 Supervisors, 182 Assistants, 182 Supervisors, 2 Admin Staff, 2 Client representatives, 1 remote engineer, 1 additional observer	488	9,268																										
Average Total Employees per day			44	96	43	43	39	44	49	55	61	66	71	76	81	86	91	96	101	106	111	116	121	126	131	136	141	146
Maximum Total Employees Two-way Movements Per Day (estimated value)			68	112	88	88	76	88	96	104	112	120	128	136	144	152	160	168	176	184	192	200	208	216	224	232	240	248

Section 16
Indicative Total Vehicle Movement Requirements

Activity	Month																											
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	20	53	50	50	52	17	3	6	26	23	22	22	24	5	19	30	53	57										
Increase to account for Miscellaneous offsite movements presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	33	20	33	33	14	19	4	7	20	20	25	25	27	6	21	33	59	62										
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	1	0	3	0	4	1	0	1	1	1	2	1	2	1	3									
Average total two-way HGV Movements Per Day	24	60	34	33	16	19	7	7	30	27	26	26	26	6	23	36	60	66										
Maximum Total Employees Two-way Movements Per Day (estimated value)	68	112	88	88	76	88	96	104	112	120	128	136	144	152	160	168	176	184	192	200	208	216	224	232	240	248	256	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	87	124	88	88	86	87	108	77	130	124	117	127	134	121	121	66	121	121										
Maximum Total HGV and Car/Motor van Two-way Movements Per Day (estimated value)	131	164	128	128	101	116	116	84	168	161	162	162	162	128	140	136	161	167										

Section 16A

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190			4.3	4.3														
Mobilisation of Welfare and Operation Plant to TCC	22	13			0.6															
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	22	332					15.1													
Cable Construction Works																				
Trench Excavation and duct installation	44	254						5.8	5.8											
Trench Backfill with CBS and protective covers	44	196						4.5	4.5											
Jointing Bay Excavation	22	12												0.5						
Jointing Bay Base Construction	22	11												0.5						
Pulling and connection of cables	22	18													0.8					
Backfill over Jointing Bays	22	8													0.4					
Minor HDD crossing of Mature Woodland at Newbald Road (OB ID S16A-E0X-1) - HDD Exit																				
Establish HDD Exit Pit Compound	22	37							1.7											
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	2							0.1											
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	6								0.3										
Demobilisation of HDD Kit and welfare - Reused at next HDD in section.	22	0									0.0									
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section.	22	0									0.0									
Minor HDD crossing of A1174 (OB ID S10-RX-4) - HDD Exit																				
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	0									0.0									
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	6										0.3								
Demobilisation of HDD Kit and welfare	22	2											0.1							
Remove of onshore HDD Exit Compound	22	37														1.7				
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	22	332														15.1				
Demobilisation of Welfare from TCC	22	13															0.6			
TCC and access road Removal	44	190														4.3	4.3			
Average Section Skip HGV Movements Per Day	286	89			0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
Total HGVs per day			0.0	0.0	5.2	4.6	15.4	10.5	12.3	0.6	0.3	0.6	0.4	1.4	1.5	21.4	5.2	0.0	0.0	0.0
Total two-way HGV movements per day			0.0	0.0	10.4	9.3	30.8	21.1	24.6	1.1	0.6	1.1	0.8	2.7	3.0	42.8	10.4	0.0	0.0	0.0

Section 16A

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer			1	1	1		1		2				2	3	2			
30T Excavator			2	2	2	3	3		2			2	2	3	2			
20T Dumper			3	3	3	4	4		2			2	2	4	2			
Smooth Drum vibrio road roller			1	1	1		1		1					2	1			
21T excavator			1	1	1	3	3		1			1	1	2	1			
5T Forward Tipping Dumper			1	1	1	3	3		1			1	1	2	1			
Loading shovel			1	1	1	3	3		2				1	3	2			
Trench Roller						2	2						1					
Tractor & fencing kit			1	1	1		1		1					1	1			
Tractor & trailer			1	1	1	2	3		1			1		2	1			
Tractor & Fuel bowser (or self-propelled)			1	1	1	1	1		1			1	1	1	1			
Tractor & Water bowser (for dust suppression)			1	1	1	1	1		1			1	1	1	1			
Tractor & cable drum trailer													1					
Tractor & soil tiller, roller, seeder														1	1			
Cement mixer																		
Mobile crane																		
Grader			1	1	1		1		1									
Cable laying tracked crane																		
Cable winch													1					
Pre-cast concrete truck																		
Mobile concrete pump												1						
Telehandler			1	1	1	2	3		1			1						
Mobile self-contained welfare unit			1	1	1	1	1		1			1	1	1	1			
Crawler Crane						1	1											
Mobile generator deliveries (corrected for 2 per delivery)			2	2	1	2	3		2			2	2	2	1			
Temporary lighting deliveries (corrected for 8 per delivery)			1	1	2	2	3		1			1	1	2	1			
Road surface paver & roller			1	1														
Pump deliveries (corrected for 4 per delivery)						1	2					1	1					
Total Plant Onsite In Section Per Month	0	0	21	21	20	31	40	0	21	0	0	16	19	30	19	0	0	0
Total Deliveries / Removals	0	0	21	0	3	19	49	0	42	0	0	16	9	19	30	0	0	0
Average Deliveries / Removals Per Day	0.0	0.0	1.0	0.0	0.1	0.9	2.2	0.0	1.9	0.0	0.0	0.7	0.4	0.9	1.4	0.0	0.0	0.0
Average Total two-way HGV movements (Deliveries / Removals) Per Day	0	0	2	0	1	2	5	0	4	0	0	2	1	2	3	0	0	0

Section 16A

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																										
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30									
Establish TCC and site accesses	44	132			3	3																							
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	22	66					3																						
Cable Construction Works																													
Trench Excavation and duct installation	44	88							2	2																			
Trench Backfill with CBS and protective covers	44	88							2	2																			
Jointing Bay Excavation	22	44													2														
Jointing Bay Base Construction	22	44													2														
Pulling and connection of cables	22	66														3													
Backfill over Jointing Bays	22	44														2													
Minor HDD crossing of Mature Woodland at Newbald Road (OB ID S16A-EOX-1) - HDD Exit																													
Establish HDD Exit Pit Compound	22	44								2																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	22	44									2																		
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section.	22	22										1																	
Minor HDD crossing of A1174 (OB ID S10-RX-4) - HDD Exit																													
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	22										1																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	22	44											2																
Remove of onshore HDD Exit Compound	22	22															1												
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	26	78															3												
TCC and access road Removal	52	156															3	3											
Plant Operators																													
Overall Plant Operators	260	4,914			17	17	16	25	31		17				11	14	25	16											
Section 1 Engineering Personnel																													
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	338	1,352			4	4	4	4	4	4	4	4	4	4	4	4	4	4											
Average Total Employees per day			0	0	24	24	23	33	41	6	23	6	4	19	23	36	23		0	0	0								
Maximum Total Employee Two-way Movements Per Day (car/small van)			0	0	48	48	46	66	82	12	46	12	8	38	46	72	46		0	0	0								

Section 16A
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	0	0	10	9	31	21	25	1	1	1	1	3	3	43	10	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	0	0	12	11	34	24	27	2	1	2	1	3	4	47	12	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	0	0	2	0	1	2	5	0	4	0	0	2	1	2	3	0	0	0
Average total two-way HGV Movements Per Day	0	0	14	11	35	26	32	2	5	2	1	5	5	49	15	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	0	0	48	48	46	66	82	12	46	12	8	38	46	72	46	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	0	0	53	53	51	73	91	14	51	14	9	42	51	80	51	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	0	0	67	64	86	99	123	16	56	16	10	47	56	129	66	0	0	0

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCCs and site accesses	44	190	4.3	4.3																										
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																											
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	696		15.5	15.5																									
Cable Construction Works																														
Trench Excavation and duct installation	66	508							7.7	7.7	7.7																			
Trench Backfill with CBS and protective covers	66	390							5.9	5.9	5.9																			
Jointing Bay Excavation	44	22												0.5	0.5															
Jointing Bay Base Construction	44	21												0.5	0.5															
Pulling and connection of cables	44	36														0.9	0.9													
Backfill over Jointing Bays	44	15														0.2	0.3													
Major HDD Exit for HDD crossing of A164 (OB ID S16B-RX-4) HDD Entry																														
Establish HDD Entry Pit Compound	22	105					4.9																							
Mobilisation of HDD Kix and Welfare to compounds	22	17					0.8																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	77							1.2	1.2	1.2																			
Demobilisation of HDD Kix and welfare	22	17										0.8																		
Remove of onshore HDD Exit Compound	22	105																							4.9					
Minor HDD crossing of B1236 (OB ID S16B-RX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	100					4.5																							
Mobilisation of HDD Kix and Welfare to compounds	22	19					0.9																							
HDD drilling works and ducting (assume working 12 hrs, 8 days a week, average 22 days a month)	22	38							1.7																					
Demobilisation of HDD Kix and welfare - Reused at next HDD in section, Exit Pit equipment removed from site	22	2									0.1																			
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section for entry compound, Exit compound materials removed from site	22	38									1.7																			
Minor HDD crossing of Mature Woodland at Newbald Road (OB ID S16A-EOC-1) - HDD Entry																														
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	0									0.0																			
Mobilisation of HDD Kix and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	8									0.4																			
Demobilisation of HDD Kix and welfare	22	17											0.8																	
Remove of onshore HDD Entry Compound	22	62																							2.8					
Haul Road Removal (includes removal of fencing) and redistribution of cable route	44	696																							10.8	15.9				
Demobilisation of Welfare from TCC	22	13																								0.6				
TCC and access road Removal	44	190																								4.3	4.3			
Average Section Skip HGV Movements Per Day	286	102	0.4	0.4	0.4			0.4	0.4	0.4	0.4	0.4				0.4	0.4	0.4							0.4	0.4				
		Total HGVs per day	5.3	20.5	16.2	0.0		11.3	3.3	16.9	16.5	16.5	0.0	1.3	2.5	1.5	28.1	21.1	0.0	0.0	0.0									
		Total towage HGV movements per day	10.5	41.0	32.3	0.0		22.6	6.5	33.9	31.0	31.0	0.0	2.7	5.0	3.0	56.2	42.2	0.0	0.0	0.0								0.0	

Section 16B
Indicative Construction Plant Requirements

Plant	Month																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
D9 Dozer	1	2	1		1		2					2	2	3	3															
30T Excavator	2	3	2		2		3	3	3		2	3	2	3	3															
20T Dumper	3	3	3				4	4	4		2	4	2	4	4															
Smooth Drum vibrato road roller	1	2	1		1		1								2	2														
21T excavator	1	2	1		1		3	3	3		1	2	1	2	2															
1T Forward Tipping Dumper	1	2	1		1		3	3	3		1	2	1	2	2															
Loading shovel	1	2	1		1		3	3	3			1	1	3	3															
Trench Beller							2	2	2			1	1																	
Tractor & Baling kit	1	1	1		1										1	1														
Tractor & trailer	1	2	1		1		2	2	2		1	1		2	2															
Tractor & Fuel bowser (or self-propelled)	1	1	1		1		1	1	1		1	1	1	1	1															
Tractor & Water bowser (for dust suppression)	1	1	1		1		1	1	1		1	1	1	1	1															
Tractor & cable drum trailer												1	1																	
Tractor & soil tiller, roller, seeder															1	1														
Cement mixer																														
Mobile crane																														
Grader	1	2	1		1		1																							
Cable laying tracked crane																														
Cable winch												1	1																	
Pts-eat concrete truck																														
Mobile concrete pump												1	1																	
Vibrohammer	1	2	1		1		3	2	2			1																		
Mobile self-contained welders unit	1	1	1		1		1	1	1		1	1	1	1	1															
Crawler Crane							1	1	1																					
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1		1		2	2	2		2	3	2	2	2															
Temporary lighting deliveries (corrected for 8 per delivery)	1	1	2		2		3	2	2		1	2	1	2	2															
Road surface paver & roller	1	1																												
Pump deliveries (corrected for 4 per delivery)							1	1	1		1	2	1																	
Total Plant Onsite In Section Per Month	21	31	20	0	17	0	38	31	31	0	16	30	19	20	30	0	0	0												
Total Deliveries / Removals	21	10	21	0	34	0	38	7	31	0	16	14	11	19	30	0	0	0												
Average Deliveries / Removals Per Day	1.0	0.5	1.4	0.0	1.5	0.0	1.7	0.3	1.4	0.0	0.7	0.6	0.5	0.9	1.4	0.0	0.0	0.0												
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	3	0	4	0	4	1	3	0	2	2	1	2	3	0	0	0												

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																												
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30											
Establish TCC and site access	44	132	3	3																											
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3																										
Cable Construction Works																															
Trench Excavation and duct installation	66	132								2	2	2																			
Trench Backfill with CBS and protective covers	66	132								2	2	2																			
Jointing Bay Excavation	44	88																					2	2							
Jointing Bay Base Construction	44	88																					2	2							
Putting and connection of cables	44	132																						3	3						
Backfill over Jointing Bays	44	88																							2	2					
Major HDD Exit for HDD crossing of A164 (OB ID S16B-RX-4) HDD Entry																															
Establish HDD Entry Pit Compound	22	44							2																						
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	66	396								6	6	6																			
Remove of onshore HDD Exit Compound	22	44																											2		
Minor HDD crossing of B1226 (OB ID S16B-RX-1) - HDD Entry and Exit																															
Establish HDD Entry and Exit Pit Compounds	22	44							2																						
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110								5																					
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section for entry compound. Exit compound materials removed from site	22	22									1																				
Minor HDD crossing of Mearns Woodland at Newbold Road (OB ID S16A-FIX-1) - HDD Entry																															
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	22									1																				
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	66										3																			
Remove of onshore HDD Entry Compound	22	44												2																	
Haul Road Removal (includes removal of fencing) and abandonment of cable route	52	156																											3	3	
TCC and access road Removal	52	156																												3	3
Plant Operators																															
Overall Plant Operators	312	6,000	17	26	16				13		31	25	25										11	23	14	35	25				
Section 1 Engineering Personnel																															
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	338	1,362	4	4	4				4	4	4	4	4									4	4	4	4	4					
Average Total Employees per day			24	36	23	0	21	15	47	42	35	0	19	35	23	37	35	0	0	0											
Maximum Total Employee Two-way Movements Per Day (cart/mul van)			48	72	46	0	42	30	94	84	70	0	38	70	46	74	70	0	0	0											

Section 16B

Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	11	41	32	0	23	7	34	31	31	0	3	5	3	56	42	0	0	0	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Welfare Movements Tab where the percentage increase is presented	12	46	36	0	25	8	38	35	35	0	3	6	4	62	47	0	0	0	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	3	0	4	0	4	1	3	0	2	2	1	2	3	0	0	0	
Average total two-way HGV Movements Per Day	14	47	39	0	29	8	42	36	38	0	5	8	5	64	50	0	0	0	
Maximum Total Employee Two-way Movements Per Day (car/mal van)	48	72	46	0	42	30	94	84	70	0	38	70	46	74	70	0	0	0	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	0	47	33	104	93	77	0	42	77	51	82	77	0	0	0	
Maximum Total HGV and Car/mal van Two-way Movements Per Day (car/mal van)	67	127	80	0	76	41	146	129	115	0	47	85	56	146	127	0	0	0	

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HDVs	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCCs and site access	44	190	4.3	4.3																										
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																											
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	664			12.8	12.8																								
Cable Construction Works																														
Trench Excavation and duct installation	44	197										4.6	4.6																	
Trench Backfill with CBS and protective covers	44	162										3.6	3.6																	
Joining Bay Excavation	22	12																						0.6						
Joining Bay Base Construction	22	11																						0.6						
Pulling and connection of cables	22	18																									0.8			
Backfill over Joining Bays	22	8																									0.4			
Major HDD Exit for HDD crossing of A164 (OB ID S16B-RX-4) - HDD Exit																														
Establish HDD Exit Pit Compound	22	64							2.6																					
Mobilisation of HDD Kit and Welfare to compounds	22	6							0.2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	16								0.2	0.2	0.2																		
Demobilisation of HDD Kit and welfare	22	5												0.2																
Remove of onshore HDD Exit Compound	22	64																									2.6			
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S17-UUX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	97							4.4																					
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section and additional equipment required mobilised to site	22	17							0.8																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	41								1.9																				
Demobilisation of HDD Kit and welfare - Reused at next HDD in section	22	0										0.9																		
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	0										0.6																		
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S17-UUX-1) - HDD Entry and Exit (for 408KV Bruns)																														
Establish HDD Entry and Exit Pit Compounds - Reuse from previous HDD in Section	22	0										0.6																		
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0										0.6																		
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	41												1.9																
Demobilisation of HDD Kit and welfare - Reused at next HDD in section. Removal of plant associated with Exit Pit Compound	22	2													0.1															
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section. Removal of Materials associated with Exit Pit Compound	22	37														1.7														
Minor HDD crossing of A1679 (OB ID S17-RX-2) - HDD Entry																														
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	0														0.6														
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0															0.6													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	36																0.9	0.9											
Demobilisation of HDD Kit and welfare	22	17																						0.6						
Remove of onshore HDD Entry 1 Compounds	22	60																									2.7			
Haul Road Removal (includes removal of fencing) and establishment of cattle route	44	664																									12.8	12.8		
Demobilisation of Welfare from TCC	22	13																												
TCC and access road Removal	44	190																										4.3	4.3	
Average Section Skg HDV Movements Per Day	330	120	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
			Total HDGVs per day																											
			5.3	17.5	13.2	0.4	8.2	2.5	0.6	2.5	10.3	9.1	1.2	2.2	1.5	22.7	18.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
			Total two-way HDGV Movements per day																											
			10.5	35.0	26.4	0.7	16.4	4.9	1.2	4.9	20.5	18.2	2.3	4.4	3.1	45.4	36.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Indicative Construction Plant Requirements

Plant	Month																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
04 Dozer	1	2	1	1	2		2		2				2	3	3															
30T Excavator	2	3	2	2	3		2		3	3		2	2	3	3															
20T Dumper	3	3	3	3	4		2		4	4		2	2	4	4															
Smooth Drum vibrato road roller	1	2	1	1	2		1		1					2	2															
21T excavator	1	2	1	1	2		1		3	3		1	1	2	2															
1T Forward Tipping Dumper	1	2	1	1	2		1		3	3		1	1	2	2															
Loading shovel	1	2	1	1	3		2		3	3			1	3	3															
Tractor Beller										2	2		1																	
Tractor & tamping kit	1	1	1	1	1		1		1					1	1															
Tractor & trailer	1	2	1	1	2		1		2	2		1		2	2															
Tractor & Fuel bowser (or self-propelled)	1	1	1	3	1		1		1	1		1	1	1	1															
Tractor & Water bowser (for dust suppression)	1	1	1	0	1		1		1	1		1	1	1	1															
Tractor & cable drum trailer													1																	
Tractor & soil tiller, roller, seeder															1	1														
Cement mixer																														
Mobile crane																														
Grader	1	2	1	1	2		1		1																					
Cable laying tracked crane																														
Cable winch													1																	
Pre-cast concrete tank																														
Mobile concrete pump												1																		
Telehandler	1	2	1	1	2		1		3	2		1																		
Mobile self-contained welfare unit	1	1	1	1	1		1		1	1		1	1	1	1															
Crawler Crane																														
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	2		2		2	2		2	2	2	2															
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2		1		9	2		1	1	2	2															
Road surface paver & roller	1	1																												
Pump deliveries (corrected for 4 per delivery)										1	1		1	1																
Total Plant Onsite In Section Per Month	21	31	20	20	32	0	21	0	38	31	0	16	19	20	30	0	0	0												
Total Deliveries / Removals	21	10	11	0	44	0	42	0	38	38	0	16	9	19	30	0	0	0												
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	2.0	0.0	1.9	0.0	1.7	1.7	0.0	0.7	0.4	0.9	1.4	0.0	0.0	0.0												
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	4	0	4	0	4	4	0	2	1	2	3	0	0	0												

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc.)	Total Working Days	Total Person Days	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCC and site accesses	44	132	3	3																										
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3																									
Cable Construction Works																														
Trench Excavation and duct installation	44	88									2	2																		
Trench Backfill with CBS and protective covers	44	88									2	2																		
Jointing Bay Excavation	22	44												2																
Jointing Bay Base Construction	22	44												2																
Putting and connection of cables	22	66														3														
Backfill over Jointing Bays	22	44														2														
Minor HDD Exit for HDD crossing of A164 (OB ID S16B-RX-4) -HDD Exit																														
Establish HDD Exit Pit Compound	22	44					2																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	66	198						3	3	3																				
Remove of onshore HDD Exit Compound	22	44															2													
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S17-UUK-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	44					2																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110						5																						
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	22							1																					
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S17-UUK-1) - HDD Entry and Exit (for 400kv Route)																														
Establish HDD Entry and Exit Pit Compounds - Reuse from previous HDD in Section	22	22							1																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110								5																				
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section. Removal of Materials associated with Exit Pit Compound	22	22									1																			
Minor HDD crossing of A1679 (OB ID S17-RX-2) -HDD Entry																														
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	22									1																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	44	132										3	3																	
Remove of onshore HDD Entry I Compounds	22	44															2													
Haul Road Removal (includes removal of fencing) and establishment of cattle route.	52	156															3	3												
TCC and access road Removal	52	156																3	3											
Plant Operators																														
Overall Plant Operators	312	6,500	17	26	16	16	27		17			31	25		11	14	25	25												
Section 1 Engineering Personnel																														
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,660	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4												
Average Total Employees per day			48	36	23	20	35	12	26	12	41	36	7	19	23	39	35	0	0											
Maximum Total Employee Two-way Movements Per Day (calendar van)			24	17	46	40	70	24	52	24	82	72	14	38	46	78	70	0	0											

Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	11	35	26	1	16	5	1	5	21	18	2	4	3	45	36	0	0	0	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Welfare Movements Tab where the percentage increase is presented	12	39	29	1	18	6	2	6	23	20	3	5	4	50	40	0	0	0	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	4	0	4	0	4	4	0	2	1	2	3	0	0	0	
Average total two-way HGV Movements Per Day	14	40	30	1	22	6	6	6	27	24	3	7	5	52	43	0	0	0	
Maximum Total Employee Two-way Movements Per Day (car/mile/van)	48	72	46	40	70	24	52	24	82	72	14	38	46	78	70	0	0	0	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	44	77	27	58	27	91	80	16	42	51	86	77	0	0	0	
Maximum Total HGV and Car/mile/van Two-way Movements Per Day (car/mile/van)	67	120	81	45	99	33	64	33	118	104	19	49	56	138	120	0	0	0	

Substation Construction (Single Project Substations)
Average Materials and Welfare and Operation Plant Daily HGV Movements

[illegible]

Monthly Construction Plant Requirements

[illegible]

Substation Construction

Average Daily Personnel Requirements

[illegible]

Total Vehicle Movement Requirements (Substation)

Activity	Week																																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45			
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	39	59	77	46	46	46	46	68	101	43	43	43	43	43	43	44	44	44	44	44	45	44	44	47	6	6	6	5	5	5	5	5	5	2	2	2	2	2	2	2	2	2	34	34	34	45		
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	46	70	91	55	55	55	55	81	119	51	51	51	51	51	51	52	52	52	52	52	53	52	52	56	7	7	7	7	7	7	7	7	7	2	2	2	2	2	2	2	2	2	41	41	41	41		
Construction Plant Average Total two-way HGV Movements (delivered/ Removals) Per Week	2	1	2	1	0	0	0	1	1	3	0	0	2	0	0	2	0	0	0	0	1	1	0	1	2	0	0	2	3	0	0	0	0	3	0	0	0	0	0	0	0	0	4	0	2	2		
Average total two-way HGV Movements Per Day	48	71	93	56	55	55	55	82	120	54	51	51	53	51	51	54	52	52	52	52	54	53	52	57	9	7	7	7	9	10	7	7	7	5	2	2	2	2	2	2	2	2	45	41	43	43		
Maximum Total Employee Two-way Movements Per Day (car/mal van)	88	112	112	94	94	94	94	114	138	122	122	122	122	156	156	156	170	170	170	170	170	192	170	202	210	156	156	156	132	106	106	106	78	78	78	78	78	78	78	78	78	86	86	86	86			
Employee Two-way Movements Plus additional 10% for Miscellaneous Movements	97	124	124	104	104	104	104	126	152	135	135	135	135	172	172	172	187	187	187	187	187	212	187	223	231	172	172	172	146	117	117	117	117	86	86	86	86	86	86	86	86	86	86	86	86	86	86	
Maximum Total HGV and Car/mal van Two-way Movements Per Day (Grand total)	145	195	217	160	159	159	159	208	272	189	186	186	225	223	223	241	239	239	239	239	266	240	275	288	181	179	179	155	127	124	124	124	124	91	88	88	88	88	88	88	88	88	88	88	88	140	136	138

[illegible]

Section 15

Indicative Construction Plant Requirements

Plant	Month																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
D9 Dozer	1	2	2	1	2		2		2				2	2	2	3	3													
30T Excavator	2	3	3	2	3	3	3		2			2	3	3	3	3														
20T Dumper	3	3	4	3	4	4	4		2			2	4	4	4	4														
Smooth Drum vibrle road roller	1	2	2	1	1				1					1	2	2														
21T excavator	1	2	2	1	3	3	3		1			1	2	2	2	2														
1T Forward Tipping Dumper	1	2	2	1	3	3	3		1			1	2	2	2	2														
Loading shovel	1	2	3	1	3	3	3		2				1	3	3	3														
Trench Beller					2	2	2						1	1																
Tractor & Baling kit	1	1	1	1	1	1			1						1	1	1													
Tractor & trailer	1	2	2	1	2	2	2		1			1	1	1	2	2														
Tractor & Fuel bowser (for self-propelled)	1	1	1	1	1	1	1		1			1	1	1	1	1														
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1		1			1	1	1	1	1														
Tractor & cable drum trailer													1	1																
Tractor & soil tiller, roller, seeder																1	1													
Cement mixer																														
Mobile crane																														
Grader	1	2	2	1	1		1		1																					
Cable laying tracked crane																														
Cable winch																														
Pre-cast concrete block																														
Mobile concrete pump																														
Wheelbarrow	1	2	2	1	3	2	3		1			1	1																	
Mobile self-contained welfare unit	1	1	1	1	1	1	1		1			1	1	1	1	1														
Crawler Crane					1	1	1																							
Mobile generator: deliveries (corrected for 2 per delivery)	2	2	2	1	2	2	2		2			2	3	3	2	2														
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	3	3		1			1	2	2	2	2														
Road surface paver & roller	1	1																												
Pump deliveries (corrected for 4 per delivery)					1	1	1					1	2	1																
Total Plant Onsite In Section Per Month	21	31	32	20	38	31	38	0	21	0	0	16	30	31	30	30	0	0												
Total Deliveries / Removals	21	10	3	12	66	0	48	0	42	0	0	16	14	7	39	30	0	0												
Average Deliveries / Removals Per Day	1.0	0.5	0.1	0.5	2.5	0.0	2.0	0.0	1.9	0.0	0.0	0.7	0.6	0.3	1.4	1.4	0.0	0.0												
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	2	6	0	5	0	4	0	0	2	2	1	4	4	3	0												

Indicative Average Daily Personnel Requirements

Section 15

Indicative Total Vehicle Movement Requirements

[illegible]

Including miscellaneous allowances:

Overall	Minimum	Maximum	Average	
Section 1	78	193	148	Over 18 Month Cable Route Construction Programme
Section 2	56	127	98	Over 18 Month Cable Route Construction Programme
Section 3	16	137	87	Over 18 Month Cable Route Construction Programme
Section 4	0	144	83	Over 18 Month Cable Route Construction Programme
Section 5	25	188	100	Over 18 Month Cable Route Construction Programme
Section 6	105	184	154	Over 18 Month Cable Route Construction Programme
Section 7	120	0	69	Over 18 Month Cable Route Construction Programme
Section 8	0	145	71	Over 18 Month Cable Route Construction Programme
Section 9	0	117	52	Over 18 Month Cable Route Construction Programme
Section 10	84	187	142	Over 18 Month Cable Route Construction Programme
Section 16A	0	129	46	Over 18 Month Cable Route Construction Programme
Section 16B	0	146	70	Over 18 Month Cable Route Construction Programme
Section 17 (including 400V)	0	138	64	Over 18 Month Cable Route Construction Programme
Substation Bore	88	268	171	Over 45 Month Substation Construction Programme
Section 15	0	127	73	Over 18 Month Cable Route Construction Programme
Total	88	1899	666	Over 45 Month Substation Construction Programme
Total	952	1899	1452	Over 18 Month Cable Route Construction Programme

Day	Movements
1	100
2	150
3	120
4	180
5	140
6	160
7	130
8	170
9	110
10	190
11	150
12	170
13	140
14	1900
15	1600
16	1800
17	1400
18	1600
19	1300
20	1500
21	1200
22	1400
23	1100
24	1300
25	1000
26	1200
27	1500
28	1200
29	1400
30	1100
31	1300
32	1000
33	1200
34	900
35	1100
36	800
37	1000
38	700
39	900
40	600
41	800
42	500
43	700
44	400
45	600
46	300
47	500
48	200

Including miscellaneous allowances

Overall	Minimum	Maximum	Average
Section 1	7	81	49
Section 2	5	55	28
Section 3	2	44	23
Section 4	0	51	16
Section 5	3	52	27
Section 6	63	32	32
Section 7	0	48	17
Section 8	0	63	19
Section 9	0	35	12
Section 10	7	66	30
Section 16A	0	69	11
Section 16B	0	64	21
Section 17 (Including 400KV)	0	52	16
Substation Zone	2	100	37
Section 15 (100KV)	0	50	18
Total	2	999	161

Average Total Two-way HGV Movements Per Day

Section	Average
1	7
2	5
3	2
4	0
5	3
6	63
7	0
8	0
9	0
10	7
11	0
12	0
13	600
14	400
15	100
16	800
17	800
18	800
19	800
20	800
21	800
22	800
23	800
24	800
25	800
26	800
27	400
28	800
29	800
30	800
31	800
32	800
33	800
34	800
35	800
36	800
37	800
38	800
39	800
40	800
41	800
42	800
43	800
44	800

Overall	Minimum	Maximum	Average	
Section 1	53	135	105	Over 18 Month Cable Route Construction Programme
Section 2	51	110	79	Over 18 Month Cable Route Construction Programme
Section 3	14	119	65	Over 18 Month Cable Route Construction Programme
Section 4	0	97	47	Over 18 Month Cable Route Construction Programme
Section 5	22	110	72	Over 18 Month Cable Route Construction Programme
Section 6	95	154	122	Over 18 Month Cable Route Construction Programme
Section 7	0	91	52	Over 18 Month Cable Route Construction Programme
Section 8	0	91	52	Over 18 Month Cable Route Construction Programme
Section 9	0	82	41	Over 18 Month Cable Route Construction Programme
Section 10	77	154	113	Over 18 Month Cable Route Construction Programme
Section 16A	0	91	35	Over 18 Month Cable Route Construction Programme
Section 16B	0	93	48	Over 18 Month Cable Route Construction Programme
Section 17(Including 40KV)	0	91	48	Over 18 Month Cable Route Construction Programme
Substation 17A	86	231	135	Over 45 Month Substation Construction Programme
Section 15 (40KV)	0	91	35	Over 18 Month Cable Route Construction Programme
Total	86	1419	504	Over 45 Month Substation Construction Programme
Total	643	5439	1102	Over 18 Month Cable Route Construction Programme

Average Total Employee Two Way Movements per Day

Day	Movements
1	100
2	100
3	100
4	100
5	100
6	100
7	100
8	100
9	100
10	100
11	100
12	100
13	100
14	1300
15	1200
16	100
17	100
18	100
19	100
20	100
21	100
22	100
23	100
24	100
25	100
26	100
27	100
28	1300
29	1200
30	100
31	100
32	100
33	100
34	100
35	100
36	100
37	100
38	100
39	100
40	100
41	100
42	100
43	100
44	100
45	100



Vendor Coversheet

Project Name:	Dogger Bank South (DBS)	Package No:	WP7

Document Title:	Landfall and Onshore Cable Route Construction Metrics - Route 3 to Zone 1 HVAC Electrical Scenario
Classification:	Confidential

Vendor Doc. No:	Landfall and Onshore Cable Route Construction Metrics - Route 3 to Zone 1 HVAC Electrical Scenario	Vendor Revision:	03
Date:	29 November 2022	Pages:	89

Employers Doc. No:	004573200-03	Employer Revision:	3
Document Status:	For Review and Approval		

Registered office:
 Dogger Bank South Offshore Wind Farm
 RWE Renewables UK Ltd
 Windmill Hill Business Park
 Whitehill Way, Swindon, SN5 6PB

Client	RWE
Project	Dogger Bank South Offshore Wind Farm
Document Title	Landfall and Onshore Cable Route Construction Metrics - Route 3 to Zone 1 HVAC Electrical Scenario
RWE Ecodoc Reference	004573200-03
Version	3.0
Date	29/11/2022

Prepared By	Peter Macfarlane Principal Engineering Geologist

Reviewed By	Aidan Harber Technical Director

Approved By	Aidan Harber Technical Director

Three handwritten signatures in blue ink, arranged vertically. The top signature is the longest and most fluid, while the two below it are shorter and more compact.

Contents	
Appendix A	Material Requirements Per Section (Onsite Deliveries / Offsite Removal)
Appendix B	Substation Foundation and Superstructure Material Requirements
Appendix C	Material Stockpile, Import and Export Requirements
Appendix D	Compound Welfare Requirements
Appendix E	Programme and Average Monthly Vehicle Movements
Appendix F	Overall Vehicle Movements
Appendix G	Indicative Construction Plant Noise Assessment
Appendix H	Images Showing Sections of Onshore Cable Route

Notes:

1. Construction Metrics based on Wardell Armstrong Shapefile - 100m Cable Corridor Rev E - Dated 08.11.2022 and substation footprint located within substation zone 1. Any changes in the routeing of the Onshore Cable Corridor may result in updates of these construction metrics.
2. Tabs in red are working and only used to populate other sections of the metrics and not for reference within main construction metrics output
3. No bulking or compaction ratios have been considered within the calculation of waste soils generated and removed from site or import of materials required as conservative bulk density values. Bulking factor of 1.5 has been used to determine volumes of material stockpile onsite.
4. Sections referred to in these construction metrics are presented within Wardell Armstrong Shapefile - Sections of Onshore Cable Route Rev E - Dated 08.11.2022 with screen shots of sections presented in Appendix H.
5. Short HDD of minor obstacles has not been considered separate to trenching within construction metrics as direct trenching considered to be worst case assessment in terms of materials volumes and traffic movements associated with these crossings.
6. Construction metrics are for single project only and based on worst case requirements for HVAC electrical arrangement and worst case for AIS and GIS at the substation zone.
7. Substation foundation assessment is based on assumption that ground conditions are suitable for a shallow foundation solution.
8. Substation foundation assessment is based on worst case HVAC AIS / GIS design information provided by Mott MacDonald.
9. Programme presented is indicative only and final construction programme would not be confirmed until detailed design.
10. Section 1 of onshore cable route includes metrics for Landfall Operations including landfall HDD and construction of Transition Joint Bay.
11. Within construction metrics it has been assumed that there is no reuse of haul road materials within / between sections of the onshore cable route. Some reuse of materials for HDDs has been considered within sections.
12. HDD crossings identified are those presented within Wardell Armstrong Obstacle Crossing Register 004491138-03 with obstacle Name and ID included within construction metrics to allow referencing.

[illegible]

[illegible]

[illegible]

[illegible][illegible]

FOR DBS, HVAC, AIS & GIS Worst Case Hybrid

Building	Height (m)	Length (m)	Width (m)	Area (m²)	Number of
Control Building	11.00	40.00	20.00	800.00	1.00
Station/SVC Building	10.00	24.00	15.00	360.00	4.00
275kV GIS Building	15.00	63.00	24.00	1512.00	2.00
400kV GIS Building	15.00	40.00	24.00	960.00	2.00
Storage Building	4.00	15.00	10.00	150.00	1.00

Other Structures	Height (m)	Length (m)	Width (m)	Area (m²)	Number of	Loading Weight (t)
External Fire Barrier 1 (Reactors)	10.00	20.00	0.50	10.00	8.00	N/A
External Fire Barrier 2 (transformers)	10.00	29.50	0.50	14.75	3.00	N/A
Main Transformer	11.00	22.00	7.40	162.80	4.00	270.00
Main Transformer Noise Enclosure	6.10	13.40	7.60	100.50	4.00	N/A
Auxiliary Transformer	4.00	6.00	6.00	36.00	4.00	5.00
STATCOM equipment	5.00	29.00	29.00	841.00	2.00	100.00
Emergency Diesel Generator	2.60	6.10	2.50	15.25	1.00	6.60
Station Transformer	9.00	13.50	4.50	60.75	4.00	290.00
Noise Enclosure for Station Transformer	4.50	8.00	7.50	60.00	4.00	N/A
275kV Shunt Reactor	9.00	13.50	4.50	60.75	12.00	120.00
Noise Enclosure for 275kV Shunt Reactor	4.50	8.00	6.00	48.00	12.00	N/A
400kV Shunt Reactor	10.50	14.50	7.50	108.75	4.00	200.00
Noise Enclosure for 400kV Shunt Reactor	5.70	9.20	8.00	55.20	4.00	N/A
Water Tank	6.00	6.00	9.00	54.00	1.00	5.00
275kV GIS	5.00	12.00	10.00	120.00	20.00	350.00
400kV GIS	5.00	12.00	10.00	120.00	12.00	210.00
400kV Harmonic Filters	TBC	40.00	30.00	1200.00	4.00	TBC
275kV Harmonic Filters	TBC	40.00	30.00	1200.00	8.00	TBC

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume For Concrete)
Control Building (total for No.)	pad foundations	560mm deep RC concrete on a 200mm grid plus ridge column at both gables		350		2,400	840	Concrete	1.00	350.00
	concrete slab within building	200mm thick concrete slab	480	160	800	2,400	384	Concrete	1.00	160.00
		on 150mm thick type 1 sub base	278	144	800	1,850	266	Stone	1.00	266.40
	extra concrete piling for equipment in building	TBC								
	perimeter ground beam	450mm deep x 600mm wide, 120m long		32		2,400	78	Concrete	1.00	32.40
		80 kg/m2 includes secondary steel purlins and cladding ribs and door frames, and a 10% allowance for connections. Based on max 4.0m span and 8m bay centres - 15m ridge height								
	steel frame		80		800		64	Steel	1.00	64.00
	cladding	composite cladding panels 150mm thick -	10		1,320		13	Cladding	1.00	13.20

Ground bearing slab
20% increase for sub base due to variable ground

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume For Concrete)
Station/SVC Building (total for No.)	RC Pad foundations	4.54x 541mm deep RC concrete on a 1.64m grid plus ridge column at both gables		243		2,400	583	Concrete	4.00	972.00
	Concrete ground bearing slab within building	200mm thick concrete slab	480	77	360	2,400	173	Concrete	4.00	286.50
		on 150mm thick type 1 sub base	278	65	360	1,850	120	Stone	4.00	470.20
	extra concrete piling for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 78m long		21		2,400	51	Concrete	4.00	84.24
		80 kg/m2 includes secondary steel purlins and cladding ribs and door frames, and a 10% allowance for connections. Based on max 4.0m span and 8m bay centres - 15m ridge height								
	Steel frame		80		360		29	Steel	4.00	115.20
	Cladding	composite cladding panels 150mm thick -	10		780		8	Cladding	4.00	31.20

Ground bearing slab
20% increase for sub base

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume For Concrete)
275kV GIS Building	RC Pad foundations	4.54x 541mm deep RC concrete on a 2.44x 6m grid plus ridge column at both gables		800		2,400	1,920	Concrete	2.00	1600.00
	Concrete ground bearing slab within building	200mm thick concrete slab	480	302	1,512	2,400	726	Concrete	2.00	804.80
		on 150mm thick type 1 sub base	278	272	1,512	1,850	503	Stone	2.00	1006.90
	extra concrete piling for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 282m long		47		2,400	113	Concrete	2.00	93.96
		80 kg/m2 includes secondary steel purlins and cladding ribs and door frames, and a 10% allowance for connections. Based on max 4.0m span and 8m bay centres - 15m ridge height								
	Steel frame		80		1,512		121	Steel	2.00	241.92
	Cladding	composite cladding panels 150mm thick -	10		2,610		26	Cladding	2.00	52.20

Ground bearing slab
20% increase for sub base

Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume For Concrete)
400kV GIS Building	RC Pad foundations	560mm deep RC concrete on a 2.40m grid plus ridge column at both gables		500		2,400	1,200	Concrete	2.00	1000.00
	Concrete ground bearing slab within building	200mm thick concrete slab	480	192	960	2,400	461	Concrete	2.00	384.00
		on 150mm thick type 1 sub base	278	173	960	1,850	320	Stone	2.00	639.36
	extra concrete piling for equipment in building	TBC								
	Perimeter ground beam	450mm deep x 600mm wide, 192m long		35		2,400	83	Concrete	2.00	69.12
		80 kg/m2 includes secondary steel purlins and cladding ribs and door frames, and a 10% allowance for connections. Based on max 4.0m span and 8m bay centres - 15m ridge height								
	Steel frame		80		960		77	Steel	2.00	153.60
	Cladding	composite cladding panels 150mm thick -	10		1,920		19	Cladding	2.00	38.40

Ground bearing slab
20% increase for sub base

Parameter (Materials / Electrical Equipment)	Units	Value	Equipment Weight (tonnes)	Total Equipment Weight (tonnes)	Total Vehicle Movements	
Concrete	m³	15,014	-	-	2503	Total concrete requirement for foundations / noise enclosures etc
Steel Reinforcement (assuming C.DBS Unrel Concrete)	Tonnes	976	-	-	49	
Type 1 Stone	Tonnes	9,600	-	-	480	Total Type 1 Requirement for foundations
Volume of Soil to be removed from site (Foundation excavation)	m³	17,881.6740	-	-	-	
Mass of soil to be removed from site (Foundation excavation)	Tonnes	35763.3	-	-	1789	Soil excavated for foundation and sub-base placement. Assumed building slab above ground level.
Steel Frame	Tonnes	587	-	-	47	Total steel work requirement for proposed substation buildings
Cladding	Tonnes	137	-	-	11	Total external cladding requirement for proposed substation buildings
Main Transformer	No	4	400	1600	4	Abnormal Load Delivery Of Single Transformer
Auxiliary Transformer	No	4	5	20	4	Based on worst case of one delivery per auxiliary transformer
Stat Com Equipment	No	2	100	200	16	Assumed vehicle movements (TBC)
Emergency Diesel Generator	No	1	6.6	6.6	1	Based on worst case of one delivery per emergency diesel generator
Statcom Transformer	No	4	250	1000	80	Assumed vehicle movements (TBC)
275kV Shunt Reactor	No	12	80	960	177	Assumed vehicle movements (TBC)
400kV Shunt Reactor	No	4	160	640	52	Assumed vehicle movements (TBC)
Water Tank	No	1	5	5	1	Based on worst case of one delivery per water tank
275kV GIS	No	20	350	7000	560	Assumed vehicle movements (TBC)
400kV GIS	No	12	210	2520	202	Assumed vehicle movements (TBC)
400kV Harmonic Filters	No	4	Unknown	Unknown	40	Assumed vehicle movements (TBC)
275kV Harmonic Filters	No	8	Unknown	Unknown	80	Assumed vehicle movements (TBC)
Miscellaneous Allowance For Other MM Equipment	No	1	-	-	150	Assumed vehicle movements (TBC)
TOTAL Vehicle Movements					6146	

Notes / Assumptions:

- Earthworks, handstanding and road have not been included in this part of the assessment. Considered in materials vehicle movements.
- Vehicle movements for removal of arisings is based on excavation of volume of foundations/ slabs/ sub-base.
- General site traffic and construction equipment considered in substation programme and daily movements
- Vehicle movements for delivery of electrical equipment are shown in substation programme and daily movement
- Foundations have been based on a ground bearing slab - Si to confirm GBP. If suspended slab to be used foundation size and number would increase
- Full design of foundations / bases (based on loadings / SI) to be undertaken to confirm sizes.
- Transformer housing has not been included for (assume part of equipment)
- No internal wall or additional floors have been included in the buildings

Ground bearing slab
20% increase for sub base

Assumed 0.3m thick concrete barriers / noise enclosures.
TBC

Assumed 0.3m thick concrete barriers / noise enclosures.
TBC

Assumed 0.3m thick concrete barriers / noise enclosures.
TBC

Assumed 0.3m thick concrete barriers / noise enclosures.
TBC

[illegible]

Parameter	Units	Value	Source/Comments
Volume of topsoil excavated per transition bay location (includes transition bay link box)	m ³	241	WA Calculation based on drawing ED13554-GE-1013 & 1014 (Ecodoc Reference 004437669-01 & 004437670-01). Extents of excavation multiplied by Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab) multiplied by bulking factor of 1.5.
Volume of sub-soil Excavated per transition bay location (Includes transition bay link box)	m ³	538	WA Calculation based on drawing ED13554-GE-1013 & 1014 (Ecodoc Reference 004437669-01 & 004437670-01) multiplied by bulking factor of 1.5. Total volume excavated is 776m ³ . Volume of sub-soil is total volume - topsoil volume
Volume of topsoil excavated per jointing bay location	m ³	150	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01) multiplied by bulking factor of 1.5. Extents of excavation multiplied by Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab)
Volume of sub-soil Excavated per jointing bay location	m ³	252	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01) multiplied by bulking factor of 1.5. Total volume excavated is 391m ³ . Volume of sub-soil is total volume - topsoil volume
Volume of topsoil excavated per jointing bay link box location	m ³	31	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01). Extents of excavation multiplied by Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab) multiplied by bulking factor of 1.5.
Volume of sub-soil Excavated per jointing bay link box location	m ³	37	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01) multiplied by bulking factor of 1.5. Total volume excavated is 67m ³ . Volume of sub-soil is total volume - topsoil volume
Volume of topsoil excavated per m of haul road	m ³	6.0	Haul road easement width (Drawing ED13554-GE-1021, Ecodoc Reference 004437673-01) x Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab) multiplied by bulking factor of 1.5.
Volume of sub-soil excavated per m of haul road for drainage ditches (accounts for drainage ditches on both sides of road)	m ³	1.13	Maximum volume based on drawing ED13554-GE-1023 (Ecodoc Reference 004437673-01) multiplied by bulking factor of 1.5.
Volume of topsoil excavated per m of trenching (excluding haul road)	m ³	12.6	[Cable route are of topsoil disturbed 31.05m] - haul road (10m) *depth of topsoil (0.4m) multiplied by bulking factor of 1.5. RWE Drawing REN/CIV/007/AP2 (Ecodoc Reference 004390501-01)
Volume of sub-soil excavated per m of trenching	m ³	10.0	Maximum Calculated for HVAC Arrangement from RWE Drawing REN/CIV/007/AP2 (Ecodoc Reference 004390501-01) multiplied by bulking factor of 1.5.
Volume of topsoil excavated per large TCC	m ³	6000	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per satellite TCC	m ³	3375	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per landfall compound	m ³	10350	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per Long / Moderate HDD entry pit compound	m ³	1707.84	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per Long / Moderate HDD exit pit compound	m ³	854	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per minor HDD entry pit compound	m ³	1063.2	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per minor HDD exit pit compound	m ³	637.92	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per access	m ³	64	Area of access x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per m Auxiliary Supply Trench	m ³	0.27	Width of trench x depth of topsoil x bulking factor of 1.5
Volume of subsoil excavated per m of Auxiliary Supply Trench	m ³	0.98	Width of trench x (depth of trench - depth of topsoil) x bulking factor of 1.5
Area of topsoil excavated per substation TCC	m ³	27000	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of Topsoil excavated per m of Substation Drainage Trench	m ³	0.84	Width of trench x depth of topsoil x bulking factor of 1.5
Volume of sub-soil excavated per m of Substation Drainage Trench	m ³	3.36	Width of trench x (depth of trench - depth of topsoil) x bulking factor of 1.5

Total Stockpiled Volumes	Number / Length	Volume (m3)
Transition Bay Locations (topsoil volume)	4	965.7
Transition Bay Locations (sub-soil volume)	4	2152.2
Jointing Bay Locations (topsoil volume)	224	40516.9
Jointing Bay Locations (sub-soil volume)	224	64725.7
Haul road Topsoil Strip	38710	232260.0
Drainage Ditch Sub-soil Excavation	38710	43548.8
Cable route Topsoil Strip	32000	404160
Trench Sub-Soil Excavation	128000	1286208.0
Topsoil excavated from Large TCC	2	12000.0
Topsoil excavated from Satellite TCC	14	47250.0
Topsoil excavated from landfall compound	1	10350
Topsoil excavated from Long / Moderate HDD entry pit compound	8	13662.72
Topsoil excavated from Long / Moderate HDD exit pit compound	8	6831.36
Topsoil excavated from Minor HDD entry pit compound	15	15948
Topsoil excavated from Minor HDD exit pit compound	16	10206.72
Topsoil excavated from accesses	16	1026.24
Topsoil excavated from Auxiliary Supply Trench	860	232.2
Subsoil excavated from Auxiliary Supply Trench	860	841.725
Topsoil excavated from substation TCC	1	27000
Topsoil excavated from Substation Drainage Trench	1775	1491
Subsoil excavated from Substation Drainage Trench	1775	5964

Materials Stockpile Totals	Units	Value
Topsoil	m ³	823900.8
Sub-soil	m ³	1403440.4

Imported Materials / Permanent Equipment	Units	Maximum Value	Value Assuming Shared Stone etc between HDDs in same section of cable corridor
Mot Type 1	Tonnes	363,027	336,369
Asphalt	Tonnes	33,514	33,514
HB2 External Radii Kerbs	No	464	464
HB2 Straight Kerbs	No	1,533	1,533
Concrete	m³	36,548	36,548
Crusher Run Stone	Tonnes	0	0
20/40mm Drainage Stone	Tonnes	41,807	41,807
Length of perforated pipe	m	77,420	77,420
Geogrid	m²	491,872	450,700
Geotextile	m²	491,872	450,700
Stock Proof Fencing (including required posts)	m	78,701	78,701
Heras fencing panels	No	4,945	3,756
Length of Onshore Export Cable	m	438,000	438,000
Length of Onshore Fibre Cable	m	292,860	292,860
Length of Onshore Earth Cable	m	146,000	146,000
Trench Tiles / cable protective covers	No	556,810	556,810
Cement Bound Sand	Tonnes	315,037.2	315,037
Selected Sand	Tonnes	4,257.8	4,258
Length of export cable duct in trench	m	384,000	384,000
Length of 90mm duct / pipe in trench	m	384,860	384,860
Length of ducting for install in onshore HDD bores for export cables	m	56,400	56,400
Length of ducting for install in onshore HDD bores for FO and DTS	m	56,400	56,400
Bentonite	kg	2,925,000	2,925,000
Water	m³	73,000.0	73,000
Steel Reinforcement	Tonnes	2,366.6	2,367
Link box lids	No	456.0	456
Cable Joint Kits	No	684.0	684
Transition bay pre-cast concrete slabs	No	152	152
Length of 120mm duct	m	860	860
Length of 11kV Auxiliary Cable	m	860	860
Number of CG3 cable marker blocks	-	1,460	1,460
Mass of Cement	Tonnes	1.43	1.43
Mass of Lime	Tonnes	0.23	0.23
Mass of Sand	Tonnes	3.64	3.64
Length of surface water drainage pipework	m	1,775	1,775
Drainage Manholes	No	10	10
Drainage Headwalls	No	6	6
Import of subsoil for substation earthworks	Tonnes	69,373	69,373
Steel Work For Substation Structures	Tonnes	587	587
Cladding for Substation Structures	Tonnes	137	137
Main Transformer	No	4	4
Auxiliary Transformer	No	4	4
Stat Com Equipment	No	2	2
Emergency Diesel Generator	No	1	1
Statcom Transformer	No	4	4
275kV Shunt Reactor	No	12	12
400kV Shunt Reactor	No	4	4
Water Tank	No	1	1
270kV GIS	No	20	20
400kV GIS	No	12	12

Exported Materials	Units	Value	Value Assuming Shared Stone etc between HDDs in same section of cable corridor
Mot Type 1	Tonnes	312,420	295,361
Asphalt	Tonnes	18,240	18,240
HB2 External Radii Kerbs	No	464	464
HB2 Straight Kerbs	No	0	0
Concrete	m³	28	28
Crusher Run Stone	Tonnes	0	0
20/40mm Drainage Stone	Tonnes	41,807	41,807
Length of perforated pipe	m	77,420	77,420
Geogrid	m²	491,872	450,700
Geotextile	m²	491,872	450,700
Heras fencing panels	No	4,111	2,922
Native Soil	Tonnes	581,902	581,902
Topsoil	Tonnes	65,272	65,272
Drill Fluid Removal	m³	35,000	35,000
Stock Proof Fencing (including required posts)	m	78,701	78,701
Mass of Cement	Tonnes	0.29	0.29
Mass of Lime	Tonnes	0.05	0.05
Mass of Sand	Tonnes	0.73	0.73

General Data	Value	Source/Comments
Number of Welfare / Container Units Per Delivery	1	Worst Case
Number of plant per delivery	1	Worst Case
Frequency of Skip Emptying (weeks)	2	Assumed

Main TCC Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	4	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Canteen Unit	4	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Tool Storage Unit	6	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Workshop Unit	1	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Mobile Toilet Unit	2	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Washing / Changing Unit	1	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
First Aid Unit		
Drying Room Unit	1	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Freshwater Storage Container (2 per delivery)	2	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Foul Water Storage Container (2 per delivery)	2	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Bunded Fuel Tank (1 per delivery)	1	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Generator (2 per delivery)	2	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
General Waste Skip (1 per delivery)	6	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Wheel Wash (assume 3 deliveries to mobilise)		
Weigh bridge (assume 3 deliveries to mobilise)		
Telehandler	2	Assumed Required
Road Sweeper	1	Assumed Required
Number of HGV Movements	32	

Satellite TCC Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Canteen Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Tool Storage Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Workshop Unit		
Mobile Toilet Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Washing / Changing Unit		
First Aid Unit		
Drying Room Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Freshwater Storage Container (2 per delivery)	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Foul Water Storage Container (2 per delivery)	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Bunded Fuel Tank (1 per delivery)	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Generator (2 per delivery)	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
General Waste Skip (1 per delivery)	3	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Wheel Wash (assume 3 deliveries to mobilise)		
Weigh bridge (assume 3 deliveries to mobilise)		
Telehandler	1	Assumed Required
Road Sweeper	1	Assumed Required
Number of HGV Movements	13	

Landfill HDD Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	1	Assumed - Compound to be designed
Canteen Unit / Lunch Room	1	Assumed - Compound to be designed
Welfare Unit	1	Assumed - Compound to be designed
Tool Storage Unit	2	Assumed - Compound to be designed
Workshop Unit	1	Assumed - Compound to be designed
Generator (2 per delivery)	1	Assumed - Compound to be designed
Freshwater Storage Container (2 per delivery)	2	Assumed - Compound to be designed
Foul Water Storage Container (2 per delivery)	1	Assumed - Compound to be designed
General Waste Skip (1 per delivery)	1	Assumed - Compound to be designed
Bunded Fuel Tank	1	Assumed - Compound to be designed
Bentonite Storage Container	2	Assumed - Compound to be designed
Mixing Tank	2	Assumed - Compound to be designed
Cutting Container	2	Assumed - Compound to be designed
Oil Pipe Rack	3	Assumed - Compound to be designed
Mud Pump	2	Assumed - Compound to be designed
Power Pack	1	Assumed - Compound to be designed
Driller's Cabin	1	Assumed - Compound to be designed
HDD Rig	1	Assumed - Compound to be designed
Telehandler / Excavator	1	Assumed - Compound to be designed
Number of HGV Movements	25	

Long / Moderate Onshore HDD Entry Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Canteen Unit / Lunch Room	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Welfare Unit	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Tool Storage / General Storage	3	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Workshop Unit	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Generator (2 per delivery)	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Freshwater Storage Container (2 per delivery)	1	Assumed Required
Foul Water Storage Container (2 per delivery)	1	Assumed Required
General Waste Skip (1 per delivery)	1	Assumed Required
Bunded Fuel Tank	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Bentonite Storage	2	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Mixing Tank	2	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Cuttings Container	2	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Drill Pipe Rack	3	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Mud Pump	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Power Pack	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Driller's Cabin	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
HDD Rig	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Telehandler / Excavator	1	Assumed Required
Number of HGV Movements	25	

Long / Moderate Onshore HDD Exit Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office / Welfare Unit	1	Assumed Required
General Waste Skip (1 per delivery)	1	Assumed Required
Generator (2 per delivery)	1	Assumed Required
Tool Storage Unit	1	Assumed Required
Drill Pipe Rack	2	Assumed Required
Number of HGV Movements	5	

Minor Onshore HDD Entry Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office / Welfare Unit	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Canteen Unit / Lunch Room	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Welfare Unit	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Tool Storage / General Storage	2	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Workshop Unit	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Generator (2 per delivery)	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Freshwater Storage Container (2 per delivery)	1	Assumed Required
Foul Water Storage Container (2 per delivery)	1	Assumed Required
General Waste Skip (1 per delivery)	1	Assumed Required
Bunded Fuel Tank	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Bentonite Storage Container	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Fluid and Recycling Tanks	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Cuttings Container	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Spare Rods	3	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Mud Pump		
Power Pack		
Driller's Cabin		
Mini HDD Rig	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Telehandler / Excavator	1	Assumed Required
Number of HGV Movements	17	

Minor Onshore HDD Exit Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office / Welfare Unit		
General Waste Skip (1 per delivery)		
Generator (2 per delivery)		
Tool Storage Unit	1	Assumed Required
Drill Pipe Rack	1	Assumed Required
Number of HGV Movements	2	

Substation TCC Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	10	Assumed - Compound to be designed
Canteen Unit	8	Assumed - Compound to be designed
Tool Storage Unit	12	Assumed - Compound to be designed
Workshop Unit	2	Assumed - Compound to be designed
Mobile Toilet Unit	6	Assumed - Compound to be designed
Washing / Changing Unit	3	Assumed - Compound to be designed
First Aid Unit	1	Assumed - Compound to be designed
Drying Room Unit	3	Assumed - Compound to be designed
Freshwater Storage Container (2 per delivery)	6	Assumed - Compound to be designed
Foul Water Storage Container (2 per delivery)	6	Assumed - Compound to be designed
Bunded Fuel Tank (1 per delivery)	2	Assumed - Compound to be designed
Generator (2 per delivery)	6	Assumed - Compound to be designed
General Waste Skip (1 per delivery)	8	Assumed - Compound to be designed
Wheel Wash (assume 3 deliveries to mobilise)	1	Assumed - Compound to be designed
Weigh bridge (assume 3 deliveries to mobilise)	1	Assumed - Compound to be designed
Telehandler	4	Assumed - Compound to be designed
Road Sweeper	1	Assumed - Compound to be designed
Number of HGV Movements	75	

Section	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (Including 400kV)	Substation Zone	Section 15 (400kV)
Compound Welfare and Operation Plant Requirements	457	143	160	236	259	456	156	236	148	613	123	222	266	910	267
Grand total deliveries	457	143	160	236	259	456	156	236	148	613	123	222	266	910	267
Grand total (two way movements)	914	286	320	472	518	912	312	472	296	1,226	246	444	532	1,820	534

Compound Welfare and Operation Plant Requirements	Units	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 17 (Including 400kV)	Substation Zone	Section 15 (400kV)
Number of Main TCC	-	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
Number of Minor TCC	-	2	1	1	1	1	0	1	1	1	1	1	1	1	0	1
Number of Substation TCC	-	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Duration of TCC Site	Weeks	78	78	78	65	78	65	65	61	78	56	61	65	65	190	70
Number of Skip Movements	-	234	117	117	99	117	234	99	99	93	351	84	93	99	760	105
Number of Landfill Compounds	-	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Duration of Landfill Compound Usage	Weeks	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Skip Movements	-	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Long / Moderate HDD Drilling Compounds	-	0	0	0	2	1	1	0	2	0	1	0	1	0	0	0
Combined Duration of Onshore HDD Drilling Compound Usage	Weeks	0	0	0	22	13	9	0	22	0	0	0	13	0	0	0
Number of Skip Movements	-	0	0	0	11	7	5	0	11	0	0	0	7	0	0	0
Number of Long / Moderate HDD Exit Pit Compounds	-	0	0	1	0	1	1	2	0	2	0	0	0	1	0	0
Combined Duration of Onshore HD Exit Compound Usage	Weeks	0	0	13	0	9	13	22	0	18	0	0	0	13	0	0
Number of Skip Movements	-	0	0	7	0	5	7	11	0	9	0	0	0	7	0	0
Number of Minor HDD Drilling Compounds	-	2	0	0	0	1	2	0	0	0	3	0	1	3	0	3
Combined Duration of Onshore HDD Drilling Compound Usage	Weeks	9	0	0	0	5	9	0	0	0	13	0	5	18	0	13
Number of Skip Movements	-	5	0	0	0	3	5	0	0	0	7	0	3	9	0	7
Number of Minor HDD Exit Pit Compounds	-	2	0	0	0	1	2	0	0	0	2	2	1	2	0	4
Combined Duration of Onshore HD Exit Compound Usage	Weeks	9	0	0	0	5	9	0	0	0	9	9	9	9	0	22
Number of Skip Movements	-	5	0	0	0	3	5	0	0	0	5	5	5	5	0	11
Number of HGV movements to Establish Compounds	-	89	13	18	63	62	100	23	63	23	125	17	57	73	75	72
Number of HGV movements to Demobilise Compounds	-	89	13	18	63	62	100	23	63	23	125	17	57	73	75	72
Total Number of Skip Movements	-	279	117	124	110	135	256	110	110	102	363	89	108	120	760	123
Total Number of Compound HGV Movements	-	457	143	160	236	259	456	156	236	148	613	123	222	266	910	267

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HDVs	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCCs and site accesses	44	370	5.4	5.4																										
Mobilisation of Welfare and Operation Plant to TCC	22	26	1.2																											
Site preparation including fencing, temporary drainage, haul road construction and borrow pits.	110	1,358		12.3	12.3	12.3	12.3	12.3																						
Cable Construction Works																														
Trench Excavation and duct installation	198	3,145					15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9															
Trench Backfill with CBS and protective covers	198	2,196					11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1															
Joining Bay Excavation	154	97								0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6													
Joining Bay Base Construction	154	97								0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6													
Pulling and connection of cables	154	224								1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5													
Backfill over Joining Bays	154	54								0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4													
HDD At Landfall																														
Establish Landfall HDD construction compound / Topsoil Strip in Landfall Laydown Area	22	569			25.9																									
Mobilisation of HDD Kit and Welfare to Landfall Compound	22	25			1.1																									
HDD Drilling works & Ducting (assume working 247 7 days a week but 12 delivery days a month)	180	1,791				10.0	10.0	10.0	10.0	10.0	10.0																			
Demobilisation of HDD kit and welfare	22	25									1.1																			
Transition Bays at Landfall	44	67											1.5	1.5																
Excavation of Transition Bays	66	96											0.9	0.9	0.9															
Construction of transition bay and link box base and walls	66	96																												
Connection of Cables in Transition Bays	66	8														5.1	5.1													
Transition bay backfill and roof and backfill over transition bay	66	65														1.0	1.0	1.0												
Landfall Compound Removal and Reinstatement	66	569																												
Minor HDD crossing of #1242 (OB ID S1-RX-1 OR S1-RX-2) - HDD Entry and Exit																														
Establish HDD Entry and Exit PE Compounds	22	95							4.3																					
Mobilisation of HDD Kit and Welfare to compounds	22	19							0.9																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	261								12.8																				
Demobilisation of HDD Kit and welfare to next minor HDD	22	0									0.9																			
Removal of unshore HDD Entry and Exit Compounds - materials reused at next minor HDD	22	0									0.9																			
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S1-UUX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit PE Compounds - materials from previous minor HDD	22	0									0.9																			
Mobilisation of HDD Kit and Welfare to compounds - equipment from previous minor HDD	22	0										0.7																		
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	261										12.8																		
Demobilisation of HDD Kit and welfare	22	19											0.9																	
Remove of unshore HDD Entry and Exit Compounds	22	95																							4.3					
Haul Road Removal (includes removal of fencing) and re-establishment of cable route	66	1,358																							20.6	20.6		20.6		
Demobilisation of Welfare from TCC	22	26																									1.2			
TCC and access road Removal	44	370																									5.4	5.4		
Average Section 346 Movements Per Day	396	279	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7		
			Total HDVs per day																											
			10.3	21.5	40.1	46.0	46.0	23.0	50.0	50.0	42.8	51.6	41.8	45.9	34.0	31.7	31.9	4.9	7.8	29.9	38.3	39.5								
			Total two-way HDV Movements per Day																											
			20.6	42.9	80.1	46.0	99.9	99.9	103.3	103.3	93.7	91.7	66.0	63.4	63.7	5.8	15.6	58.8	75.6	75.6	75.6	75.6								

Section 1 (Including Landfall & Transition Bay Works)

Indicative Construction Plant Requirements

Plant	Month																																			
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30																		
D6 Dozer	1	2	2	1	1	1	1		3	2	2	2	3	3	3	3	3	3																		
30T Excavator	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3																		
30T Grader	3	3	3	3	3	3	3	4	6	5	6	6	6	5	5	4	4	4																		
Smooth Drum vibrac roller	1	2	2	1	1	1	1		1	1	1		1	1	1	2	2	2																		
31T Excavator	1	2	2	1	3	3	3	3	3	3	3	3	3	3	3	3	2	2																		
3T Forward Tipping Dumper	1	2	2	1	3	3	3	3	2	3	3	3	3	2	2	2	2	2																		
Loading shovel	1	2	2	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3																		
Tractor Roller					2	2	2	2	2	2	2	2	2	2	2																					
Tractor & loading kit	1	1	1	1	1	1	1	1	1					1	1	1	1	1																		
Tractor & trailer	1	2	2	1	3	3	3	3	3	3	3	3	2	2	2	2	2	2																		
Tractor & Fuel bower (or self propelled)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																		
Tractor & Water bower (for dust suppression)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																		
Tractor & roller drum trailer																																				
Tractor & soil filler, roller, waterer																																				
Compact roller														1	1	1	1																			
Mobile crane													1	1	1	1																				
Grader	1	2	2	1	1	1	1		1			1	1	1																						
Cable laying tracked crane																																				
Cable winch									1	1	1	1	1	1	1	1	1	1																		
Pre-cast concrete truck																																				
Mobile concrete pump								1	1	2	2	2	1	1																						
10throuder	1	2	2	1	3	3	3	3	3	3	3	3	3	3	1																					
Mobile self contained welfare unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																		
Crawler Crane					1	1	1	1	1	1	1	1	1	1	1	1																				
Mobile generator deliveries (corrected for 2 per delivery)	2	2	2	1	3	3	3	3	6	6	6	6	7	7	6	2	2	2																		
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	3	3	3	5	5	5	5	5	3	3	2	2	2																		
Road surface power & roller	1	1																																		
Pump deliveries (corrected for 4 per delivery)					1	1	2	3	3	4	4	4	4	3	2	2																				
Total Plant Onsite In Section Per Month																			21	31	33	20	41	41	40	30	30	34	54	55	53	53	46	30	30	30
Total Deliveries / Removals																			21	10	4	13	21	0	3	8	14	8	0	3	12	0	7	20	0	30
Average Deliveries / Removals Per Day																			1.0	0.5	0.2	0.6	1.0	0.0	0.1	0.4	0.6	0.4	0.0	0.1	0.5	0.0	0.3	0.9	0.0	1.4
Average Total two-way HGV movements (Deliveries / Removals) Per Day																			2	1	1	2	2	0	1	1	1	1	0	1	2	0	1	2	0	3

Section 1 (Including Landfill & Transition Bay Works)

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCC and site accesses	44	132	3	3																								
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	110	330		3	3	3		3	3																			
Cable Construction Works																												
Trench Excavation and duct installation	198	396						2	2	2	2	2	2	2	2	2												
Trench Backfill with CBS and protective covers	198	396						2	2	2	2	2	2	2	2	2	2											
Jointing Bay Excavation	154	308									2	2	2	2	2	2	2	2										
Jointing Bay Base Construction	154	308									2	2	2	2	2	2	2	2										
Putting and connection of cables	154	462										3	3	3	3	3	3	3	3									
Backfill over Jointing Bays	154	308										2	2	2	2	2	2	2	2									
HDD At Landfill																												
Establish Landfill HDD construction compound	22	66			3																							
HDD Drilling works & Ducting (assume working 24/7 7 days a week) Includes Admin of HDD Compound	180	2,880					16	16	16	16	16	16																
Transition Bays at Landfill																												
Excavation of transition bays	44	88												2	2													
Construction of transition bay base and walls	66	198												3	3	3												
Connection of cables in Transition Bays	66	198														3	3	3										
Transition bay Roof and backfill over transition bay	66	198															3	3	3									
Landfill Compound Removal and Reinstatement	66	198																						3	3	3	3	
Minor HDD crossing of B1342 (OR ID S1-RX-1 OR S1-RX-2) - HDD Entry and Exit																												
Establish HDD Entry and Exit PI Compound	22	44							2																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110									5																	
Remove of onshore HDD Entry and Exit Compounds - materials reused at next minor HDD	22	22										1																
Minor HDD crossing of National Grid High Pressure Gas Main (OR ID S1-UUX-1) - HDD Entry and Exit																												
Establish HDD Entry and Exit PI Compounds - materials from onshore minor HDD	22	22										1																
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110											5															
Remove of onshore HDD Entry and Exit Compound	22	44																						2				
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	198																						3	3	3	3	
TCC and access road Removal	44	132																							3	3		
Plant Operators																												
Overall Plant Operators	468	14,170	17	26	28	16	33	33	31	30	37	36	36	37	36	36	34	25	25	25								
Section 1 Engineering Personnel																												
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Average Total Employees per day			24	36	38	39	60	60	57	63	72	63	68	60	61	67	48	35	38	38								
Maximum Total Employee Two-way Movements Per Day (car/mal van)			48	72	76	78	120	120	114	126	144	126	116	120	122	114	96	70	76	76								

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total two-way HGV Movements Per Day	21	43	80	46	100	100	86	103	84	92	68	63	64	10	16	60	77	79	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab when the percentage increase is presented	23	48	90	52	112	112	96	115	94	103	76	71	71	11	18	67	86	88	
Construction Plant Average Total two-way HGV Movements (Deliveries / Removals) Per Day	2	1	1	2	2	0	1	1	2	1	0	1	2	0	1	2	0	3	
Average total two-way HGV Movements Per Day	25	49	91	54	114	112	97	116	96	104	76	72	73	11	19	69	86	91	
Maximum Total Employee Two-way Movements Per Day (car/smil van)	48	72	76	78	120	120	114	126	144	126	116	120	122	114	96	70	76	76	
Employee Two-way Movements Plus additional 10% for Miscellaneous Movements	63	80	84	86	132	132	126	139	159	139	128	132	135	126	106	77	84	84	
Maximum Total HGV and Car/smil van Two-way Movements Per Day (car/smil van)	78	129	175	140	246	244	223	255	255	243	204	204	206	137	125	146	170	175	

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	88	1,194		13.6	13.6	13.6	13.6													
Cable Construction Works																				
Trench Excavation and duct installation	176	2,963						16.8	16.8	16.8	16.8	16.8	16.8	16.8						
Trench Backfill with CBS and protective covers	176	2,069						11.8	11.8	11.8	11.8	11.8	11.8	11.8						
Jointing Bay Excavation	132	84									0.6	0.6	0.6	0.6	0.6	0.6				
Jointing Bay Base Construction	132	84									0.6	0.6	0.6	0.6	0.6	0.6				
Pulling and connection of cables	132	192										1.5	1.5	1.5	1.5	1.5	1.5			
Backfill over Jointing Bays	132	47										0.4	0.4	0.4	0.4	0.4	0.4			
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	1,194																18.1	18.1	
Demobilisation of Welfare from TCC	22	13																	0.6	
TCC and access road Removal	44	190																4.3	4.3	
Average Section Skip HGV Movements Per Day	396	117	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
Total HGVs per day			5.2	18.2	13.9	13.9	13.9	28.9	28.9	28.9	30.2	32.0	32.0	32.0	32.0	34	2.1	18.4	22.7	
Total two-way HGV movements per day			10.4	36.4	27.7	27.7	27.7	57.8	57.8	57.8	60.3	63.9	63.9	63.9	63.9	6.8	4.2	36.8	45.4	

Section 2

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1	1	1					2	2	2	2	2	2	2	3	3	
30T Excavator	2	3	2	2	2	3	3	3	3	3	3	3	3	3	2	2	3	3	
20T Dumper	3	3	3	3	3	4	4	4	6	6	6	6	6	4	2	2	4	4	
Smooth Drum vibrio road roller	1	2	1	1	1											1	2	2	
21T excavator	1	2	1	1	1	3	3	3	3	3	3	3	3	2	1	1	2	2	
5T Forward Tipping Dumper	1	2	1	1	1	3	3	3	3	2	2	2	2	2	1	1	2	2	
Loading shovel	1	2	1	1	1	3	3	3	3	3	3	3	3	1	1	2	3	3	
Trench Roller						2	2	2	2	2	2	2	2	1	1				
Tractor & fencing kit	1	1	1	1	1											1	1	1	
Tractor & trailer	1	2	1	1	1	2	2	2	3	3	3	3	3	1		1	2	2	
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & cable drum trailer										1	1	1	1	1	1				
Tractor & soil tiller, roller, seeder																1	1	1	
Cement mixer																			
Mobile crane																			
Grader	1	2	1	1	1														
Cable laying tracked crane																			
Cable winch										1	1	1	1	1	1				
Pre-cast concrete truck																			
Mobile concrete pump									1	1	1	1	1	1					
Telehandler	1	2	1	1	1	2	2	2	3	3	3	3	3	1					
Mobile self-contained welfare unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Crawler Crane						1	1	1	1	1	1	1	1						
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	1	2	2	2	3	6	6	6	6	3	2	1	2	2	
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	2	2	2	3	4	4	4	4	2	1	2	2	2	
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)						1	1	1	3	3	3	3	3	2	1				
Total Plant Onsite In Section Per Month	21	31	20	20	20	31	31	31	40	47	47	47	47	30	19	20	30	30	
Total Deliveries / Removals	21	10	11	0	0	19	0	0	9	9	0	0	0	17	11	11	10	30	
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.0	0.9	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.8	0.5	0.5	0.5	1.4	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	0	2	0	0	1	1	0	0	0	2	1	1	1	3	

Section 2

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCC and site accesses	44	132	3	3																
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	88	264		3	3	3	3													
Cable Construction Works																				
Trench Excavation and duct installation	176	352						2	2	2	2	2	2	2	2					
Trench Backfill with CBS and protective covers	176	352						2	2	2	2	2	2	2	2					
Jointing Bay Excavation	132	264									2	2	2	2	2	2				
Jointing Bay Base Construction	132	264									2	2	2	2	2	2				
Pulling and connection of cables	132	396										3	3	3	3	3	3			
Backfill over Jointing Bays	132	264										2	2	2	2	2	2			
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	78	234																3	3	3
TCC and access road Removal	52	156																	3	3
Plant Operators																				
Overall Plant Operators	468	11,180	17	26	16	16	16	25	25	25	30	33	33	33	33	22	14	16	25	25
Section 1 Engineering Personnel																				
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Average Total Employees per day			24	36	23	23	23	33	33	33	42	50	50	50	50	35	23	23	35	35
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	46	46	66	66	66	84	100	100	100	100	70	46	46	70	70

Section 2
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	36	28	28	28	58	58	58	60	64	64	64	64	7	4	37	45	47
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	40	31	31	31	64	64	64	67	70	70	70	70	8	5	41	50	51
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	0	2	0	0	1	1	0	0	0	2	1	1	1	3
Average total two-way HGV Movements Per Day	14	41	32	31	31	66	64	64	68	71	70	70	70	10	6	42	51	54
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	46	66	66	66	84	100	100	100	100	70	46	46	70	70
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	51	73	73	73	93	110	110	110	110	77	51	51	77	77
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	121	83	82	82	139	137	137	161	181	180	180	180	87	57	93	128	131

Section 3

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	66	875		13.3	13.3	13.3														
Cable Construction Works																				
Trench Excavation and duct installation	132	2,267								17.2	17.2	17.2	17.2	17.2	17.2					
Trench Backfill with CBS and protective covers	132	1,584								12.0	12.0	12.0	12.0	12.0	12.0					
Jointing Bay Excavation	110	70										0.6	0.6	0.6	0.6	0.6				
Jointing Bay Base Construction	110	69										0.6	0.6	0.6	0.6	0.6				
Pulling and connection of cables	110	160											1.5	1.5	1.5	1.5	1.5			
Backfill over Jointing Bays	110	40											0.4	0.4	0.4	0.4	0.4			
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Exit Only																				
Establish HDD Exit Pit Compound	22	50					2.3													
Mobilisation of HDD Kit and Welfare to compounds	22	5					0.2													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	94						1.4	1.4	1.4										
Demobilisation of HDD Kit and welfare.	22	5									0.2									
Remove of onshore HDD Exit Compound	22	50															2.3			
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	875																13.3	13.3	13.3
Demobilisation of Welfare from TCC	22	13																		0.6
TCC and access road Removal	44	190																	4.3	4.3
Average Section Skip HGV Movements Per Day	396	124	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total HGVs per day			5.2	17.9	13.6	13.6	2.8	1.7	1.7	30.9	29.7	30.8	32.6	32.6	32.6	3.4	4.4	13.6	17.9	18.5
Total two-way HGV movements per day			10.4	35.8	27.1	27.1	5.6	3.5	3.5	61.8	59.4	61.5	65.1	65.1	65.1	6.8	8.8	27.1	35.8	37.0

Section 3

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer	1	2	1	1	1							2	2	2	2	2	3	3
30T Excavator	2	3	2	2	2			3	3	3	3	3	3	3	3	2	3	3
20T Dumper	3	3	3	3				4	4	4	6	6	6	4	4	2	4	4
Smooth Drum vibrio road roller	1	2	1	1	1										1	1	2	2
21T excavator	1	2	1	1	1			3	3	3	3	3	3	2	2	1	2	2
5T Forward Tipping Dumper	1	2	1	1	1			3	3	3	3	2	2	2	2	1	2	2
Loading shovel	1	2	1	1	1			3	3	3	3	3	3	1	3	2	3	3
Trench Roller								2	2	2	2	2	2	1	1			
Tractor & fencing kit	1	1	1	1	1										1	1	1	1
Tractor & trailer	1	2	1	1	1			2	2	2	3	3	3	1	1	1	2	2
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1
Tractor & Water bowser (for dust suppression)	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1
Tractor & cable drum trailer												1	1	1	1			
Tractor & soil tiller, roller, seeder																1	1	1
Cement mixer																		
Mobile crane																		
Grader	1	2	1	1	1													
Cable laying tracked crane																		
Cable winch												1	1	1	1			
Pre-cast concrete truck																		
Mobile concrete pump											1	1	1	1				
Telehandler	1	2	1	1	1			2	2	2	3	3	3	1				
Mobile self-contained welfare unit	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1
Crawler Crane								1	1	1	1	1	1					
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	1			2	2	2	3	6	6	3	3	1	2	2
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2			2	2	2	3	4	4	2	2	2	2	2
Road surface paver & roller	1	1																
Pump deliveries (corrected for 4 per delivery)								1	1	1	3	3	3	2	1			
Total Plant Onsite In Section Per Month	21	31	20	20	17	0	0	31	31	31	40	47	47	30	31	20	30	30
Total Deliveries / Removals	21	10	11	0	20	0	0	31	0	0	9	9	0	17	7	13	10	30
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.9	0.0	0.0	1.4	0.0	0.0	0.4	0.4	0.0	0.8	0.3	0.6	0.5	1.4
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	2	0	0	3	0	0	1	1	0	2	1	2	1	3

Section 3

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																			
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Establish TCC and site accesses	44	132	3	3																		
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	66	198		3	3	3																
Cable Construction Works																						
Trench Excavation and duct installation	132	264									2	2	2	2	2	2						
Trench Backfill with CBS and protective covers	132	264									2	2	2	2	2	2						
Jointing Bay Excavation	110	220											2	2	2	2	2					
Jointing Bay Base Construction	110	220											2	2	2	2	2					
Pulling and connection of cables	110	330												3	3	3	3	3				
Backfill over Jointing Bays	110	220												2	2	2	2	2				
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Exit Only																						
Establish HDD Exit Pit Compounds	22	44						2														
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	66	132							2	2	2											
Remove of onshore HDD Entry and Exit Compounds	22	44																2				
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	78	234																	3	3	3	
TCC and access road Removal	52	156																		3	3	
Plant Operators																						
Overall Plant Operators	416	9,646	17	26	16	16	13			25	25	25	30	33	33	22	24	16	25	25		
Section 1 Engineering Personnel																						
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Average Total Employees per day			24	36	23	23	19	6	6	35	33	37	47	50	50	35	35	23	35	35		
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	46	38	12	12	70	66	74	94	100	100	70	70	46	70	70		

Section 3
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	36	27	27	6	3	3	62	59	62	65	65	65	7	9	27	36	37
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	40	30	30	7	4	4	68	66	68	72	72	72	8	10	30	40	41
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	2	0	0	3	0	0	1	1	0	2	1	2	1	3
Average total two-way HGV Movements Per Day	14	41	31	30	9	4	4	71	66	68	73	73	72	10	11	32	41	44
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	38	12	12	70	66	74	94	100	100	70	70	46	70	70
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	42	14	14	77	73	82	104	110	110	77	77	51	77	77
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	121	82	81	51	18	18	148	139	150	177	183	182	87	88	83	118	121

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	532		12.1	12.1															
Cable Construction Works																				
Trench Excavation and duct installation	66	878			13.3	13.3	13.3													
Trench Backfill with CBS and protective covers	66	614			9.3	9.3	9.3													
Jointing Bay Excavation	66	43										0.7	0.7	0.7						
Jointing Bay Base Construction	66	43										0.7	0.7	0.7						
Pulling and connection of cables	66	96											1.5	1.5	1.5					
Backfill over Jointing Bays	66	24											0.4	0.4	0.4					
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Entry Only																				
Establish HDD Entry Pit Compound	22	95					4.3													
Mobilisation of HDD Kit and Welfare to compounds	22	25					1.1													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	381						5.8	5.8	5.8										
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0									
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	0									0.0									
Major HDD crossing of Stream Dike (OB ID S4-WX-1) - HDD Entry Only																				
Establish HDD Entry Pit Compound - Reuse from previous HDD in section.	22	0									0.0									
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in section.	22	0									0.0									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	381										8.7	8.7							
Demobilisation of HDD Kit and welfare.	22	25												1.1						
Remove of onshore HDD Entry Compound	22	95														4.3				
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	532														12.1	12.1			
Demobilisation of Welfare from TCC	22	13															0.6			
TCC and access road Removal	44	190														4.3	4.3			
Average Section Skip HGV Movements Per Day	330	110	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
Total HGVs per day			5.2	16.7	35.0	22.9	28.4	6.1	6.1	6.1	0.3	10.3	12.1	4.6	2.2	21.0	17.3	0.0	0.0	0.0
Total two-way HGV movements per day			10.5	33.5	70.1	45.9	56.7	12.2	12.2	12.2	0.7	20.6	24.2	9.2	4.3	42.1	34.7	0.0	0.0	0.0

Section 4 (Including Landfall & Transition Bay Works)

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1		1				2		2	2	2	3	3				
30T Excavator	2	3	3	3	3				2	2	3	3	2	3	3				
20T Dumper	3	3	6	4	4				2	2	4	4	2	4	4				
Smooth Drum vibrio road roller	1	2	1		1				1					2	2				
21T excavator	1	2	3	3	3				1	1	2	2	1	2	2				
5T Forward Tipping Dumper	1	2	3	3	3				1	1	2	2	1	2	2				
Loading shovel	1	2	3	3	3				2		1	1	1	3	3				
Trench Roller			2	2	2						1	1	1						
Tractor & fencing kit	1	1	1		1				1					1	1				
Tractor & trailer	1	2	3	2	3				1	1	1	1		2	2				
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1				1	1	1	1	1	1	1				
Tractor & Water bowser (for dust suppression)	1	1	1	1	1				1	1	1	1	1	1	1				
Tractor & cable drum trailer											1	1	1						
Tractor & soil tiller, roller, seeder														1	1				
Cement mixer																			
Mobile crane																			
Grader	1	2	1		1				1										
Cable laying tracked crane																			
Cable winch											1	1	1						
Pre-cast concrete truck																			
Mobile concrete pump										1	1	1							
Telehandler	1	2	3	2	3				1	1	1	1							
Mobile self-contained welfare unit	1	1	1	1	1				1	1	1	1	1	1	1				
Crawler Crane			1	1	1														
Mobile generator deliveries (corrected for 2 per delivery)	2	2	3	2	3				2	2	3	3	2	2	2				
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	3	2	3				1	1	2	2	1	2	2				
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)			1	1	2					1	2	2	1						
Total Plant Onsite In Section Per Month	21	31	41	31	40	0	0	0	21	16	30	30	19	30	30	0	0	0	
Total Deliveries / Removals	21	10	18	10	49	0	0	0	21	9	14	0	11	19	30	0	0	0	
Average Deliveries / Removals Per Day	1.0	0.5	0.8	0.5	2.2	0.0	0.0	0.0	1.0	0.4	0.6	0.0	0.5	0.9	1.4	0.0	0.0	0.0	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	2	1	5	0	0	0	2	1	2	0	1	2	3	0	0	0	

Section 4 (**Indicative Average Daily Personnel Requirements**

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																			
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Establish TCC and site accesses	44	132	3	3																		
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3																	
Cable Construction Works																						
Trench Excavation and duct installation	66	132			2	2	2															
Trench Backfill with CBS and protective covers	66	132			2	2	2															
Jointing Bay Excavation	66	132										2	2	2								
Jointing Bay Base Construction	66	132										2	2	2								
Pulling and connection of cables	66	198											3	3	3							
Backfill over Jointing Bays	66	132											2	2	2							
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Entry Only																						
Establish HDD Entry Pit Compound	22	44					2															
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	66	198						3	3	3												
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	22									1											
Major HDD crossing of Stream Dike (OB ID S4-WX-1) - HDD Entry Only																						
Establish HDD Entry Pit Compound - Reuse from previous HDD in section.	22	22									1											
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132										3	3									
Remove of onshore HDD Entry and Exit Compounds	22	44														2						
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156														3	3					
TCC and access road Removal	52	156														3	3					
Plant Operators																						
Overall Plant Operators	312	6,968	17	26	33	25	31				17	11	22	22	14	25	25					
Section 1 Engineering Personnel																						
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,560	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4					
Average Total Employees per day			24	36	44	33	41	7	7	7	23	22	38	35	23	37	35	0	0	0		
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	88	66	82	14	14	14	46	44	76	70	46	74	70	0	0	0		

Section 4
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	33	70	46	57	12	12	12	1	21	24	9	4	42	35	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	38	79	52	64	14	14	14	1	24	28	11	5	48	40	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	2	1	5	0	0	0	2	1	2	0	1	2	3	0	0	0
Average total two-way HGV Movements Per Day	14	39	81	53	69	14	14	14	3	25	30	11	6	50	43	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	88	66	82	14	14	14	46	44	76	70	46	74	70	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	97	73	91	16	16	16	51	49	84	77	51	82	77	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	119	178	126	160	30	30	30	54	74	114	88	57	132	120	0	0	0

Section 1
Indicative Average Materials and Methods and Construction Plant Only HGV Movements

Activity	Activity ID	Activity Name	Month											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1. Planning and preparation	1	1.1. Planning and preparation	100	100	100	100	100	100	100	100	100	100	100	
2. Data collection and analysis	2	2.1. Data collection and analysis	100	100	100	100	100	100	100	100	100	100	100	
3. Model development and validation	3	3.1. Model development and validation	100	100	100	100	100	100	100	100	100	100	100	
4. Results and conclusions	4	4.1. Results and conclusions	100	100	100	100	100	100	100	100	100	100	100	
5. Dissemination and impact	5	5.1. Dissemination and impact	100	100	100	100	100	100	100	100	100	100	100	
6. Evaluation and reflection	6	6.1. Evaluation and reflection	100	100	100	100	100	100	100	100	100	100	100	
7. Reporting and documentation	7	7.1. Reporting and documentation	100	100	100	100	100	100	100	100	100	100	100	
8. Archiving and preservation	8	8.1. Archiving and preservation	100	100	100	100	100	100	100	100	100	100	100	
9. Review and feedback	9	9.1. Review and feedback	100	100	100	100	100	100	100	100	100	100	100	
10. Final report and dissemination	10	10.1. Final report and dissemination	100	100	100	100	100	100	100	100	100	100	100	
11. Project closure and evaluation	11	11.1. Project closure and evaluation	100	100	100	100	100	100	100	100	100	100	100	
12. Post-project activities	12	12.1. Post-project activities	100	100	100	100	100	100	100	100	100	100	100	
13. Project impact and legacy	13	13.1. Project impact and legacy	100	100	100	100	100	100	100	100	100	100	100	
14. Project sustainability and future work	14	14.1. Project sustainability and future work	100	100	100	100	100	100	100	100	100	100	100	
15. Project communication and outreach	15	15.1. Project communication and outreach	100	100	100	100	100	100	100	100	100	100	100	
16. Project management and administration	16	16.1. Project management and administration	100	100	100	100	100	100	100	100	100	100	100	
17. Project budget and financial management	17	17.1. Project budget and financial management	100	100	100	100	100	100	100	100	100	100	100	
18. Project risk management	18	18.1. Project risk management	100	100	100	100	100	100	100	100	100	100	100	
19. Project quality management	19	19.1. Project quality management	100	100	100	100	100	100	100	100	100	100	100	
20. Project stakeholder management	20	20.1. Project stakeholder management	100	100	100	100	100	100	100	100	100	100	100	
21. Project procurement management	21	21.1. Project procurement management	100	100	100	100	100	100	100	100	100	100	100	
22. Project communication management	22	22.1. Project communication management	100	100	100	100	100	100	100	100	100	100	100	
23. Project risk management	23	23.1. Project risk management	100	100	100	100	100	100	100	100	100	100	100	
24. Project quality management	24	24.1. Project quality management	100	100	100	100	100	100	100	100	100	100	100	
25. Project stakeholder management	25	25.1. Project stakeholder management	100	100	100	100	100	100	100	100	100	100	100	
26. Project procurement management	26	26.1. Project procurement management	100	100	100	100	100	100	100	100	100	100	100	
27. Project communication management	27	27.1. Project communication management	100	100	100	100	100	100	100	100	100	100	100	
28. Project risk management	28	28.1. Project risk management	100	100	100	100	100	100	100	100	100	100	100	
29. Project quality management	29	29.1. Project quality management	100	100	100	100	100	100	100	100	100	100	100	
30. Project stakeholder management	30	30.1. Project stakeholder management	100	100	100	100	100	100	100	100	100	100	100	
31. Project procurement management	31	31.1. Project procurement management	100	100	100	100	100	100	100	100	100	100	100	
32. Project communication management	32	32.1. Project communication management	100	100	100	100	100	100	100	100	100	100	100	

Indicative Average Daily Personnel Requirements

Activity	Duration (days)	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Project start and kick-off	10												
Phase 1: Planning and analysis	100												
Phase 2: Design and development	100												
Phase 3: Testing and evaluation	100												
Phase 4: Deployment and support	100												
Phase 5: Review and close-out	100												
Phase 6: Post-project evaluation	100												
Phase 7: Archiving and documentation	100												
Phase 8: Final report and presentation	100												
Phase 9: Project closure and handover	100												
Phase 10: Project completion and celebration	100												
Phase 11: Project evaluation and feedback	100												
Phase 12: Project review and lessons learned	100												
Phase 13: Project closure and handover	100												
Phase 14: Project completion and celebration	100												
Phase 15: Project evaluation and feedback	100												
Phase 16: Project review and lessons learned	100												
Phase 17: Project closure and handover	100												
Phase 18: Project completion and celebration	100												
Phase 19: Project evaluation and feedback	100												
Phase 20: Project review and lessons learned	100												
Phase 21: Project closure and handover	100												
Phase 22: Project completion and celebration	100												
Phase 23: Project evaluation and feedback	100												
Phase 24: Project review and lessons learned	100												
Phase 25: Project closure and handover	100												
Phase 26: Project completion and celebration	100												
Phase 27: Project evaluation and feedback	100												
Phase 28: Project review and lessons learned	100												
Phase 29: Project closure and handover	100												
Phase 30: Project completion and celebration	100												
Phase 31: Project evaluation and feedback	100												
Phase 32: Project review and lessons learned	100												
Phase 33: Project closure and handover	100												
Phase 34: Project completion and celebration	100												
Phase 35: Project evaluation and feedback	100												
Phase 36: Project review and lessons learned	100												
Phase 37: Project closure and handover	100												
Phase 38: Project completion and celebration	100												
Phase 39: Project evaluation and feedback	100												
Phase 40: Project review and lessons learned	100												
Phase 41: Project closure and handover	100												
Phase 42: Project completion and celebration	100												
Phase 43: Project evaluation and feedback	100												
Phase 44: Project review and lessons learned	100												
Phase 45: Project closure and handover	100												
Phase 46: Project completion and celebration	100												
Phase 47: Project evaluation and feedback	100												
Phase 48: Project review and lessons learned	100												
Phase 49: Project closure and handover	100												
Phase 50: Project completion and celebration	100												
Phase 51: Project evaluation and feedback	100												
Phase 52: Project review and lessons learned	100												
Phase 53: Project closure and handover	100												
Phase 54: Project completion and celebration	100												
Phase 55: Project evaluation and feedback	100												
Phase 56: Project review and lessons learned	100												
Phase 57: Project closure and handover	100												
Phase 58: Project completion and celebration	100												
Phase 59: Project evaluation and feedback	100												
Phase 60: Project review and lessons learned	100												
Phase 61: Project closure and handover	100												
Phase 62: Project completion and celebration	100												
Phase 63: Project evaluation and feedback	100												
Phase 64: Project review and lessons learned	100												
Phase 65: Project closure and handover	100												
Phase 66: Project completion and celebration	100												
Phase 67: Project evaluation and feedback	100												
Phase 68: Project review and lessons learned	100												
Phase 69: Project closure and handover	100												
Phase 70: Project completion and celebration	100												
Phase 71: Project evaluation and feedback	100												
Phase 72: Project review and lessons learned	100												
Phase 73: Project closure and handover	100												
Phase 74: Project completion and celebration	100												
Phase 75: Project evaluation and feedback	100												
Phase 76: Project review and lessons learned	100												
Phase 77: Project closure and handover	100												
Phase 78: Project completion and celebration	100												
Phase 79: Project evaluation and feedback	100												
Phase 80: Project review and lessons learned	100												
Phase 81: Project closure and handover	100												
Phase 82: Project completion and celebration	100												
Phase 83: Project evaluation and feedback	100												
Phase 84: Project review and lessons learned	100												
Phase 85: Project closure and handover	100												
Phase 86: Project completion and celebration	100												
Phase 87: Project evaluation and feedback	100												
Phase 88: Project review and lessons learned	100												
Phase 89: Project closure and handover	100												
Phase 90: Project completion and celebration	100												
Phase 91: Project evaluation and feedback	100												
Phase 92: Project review and lessons learned	100												
Phase 93: Project closure and handover	100												
Phase 94: Project completion and celebration	100												
Phase 95: Project evaluation and feedback	100												
Phase 96: Project review and lessons learned	100												
Phase 97: Project closure and handover	100												
Phase 98: Project completion and celebration	100												
Phase 99: Project evaluation and feedback	100												
Phase 100: Project review and lessons learned	100												

[illegible]

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCCs and site accesses	44	327	7.4	7.4																										
Mobilisation of Welfare and Operation Plant to TCC	22	32	1.9																											
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	88	1,160		13.1	13.1	13.1	13.1																							
Cable Construction Works																														
Trench Excavation and duct installation	154	2,524								16.4	16.4	16.4	16.4	16.4	16.4	16.4														
Trench Backfill with CBS and protective covers	154	1,763								11.4	11.4	11.4	11.4	11.4	11.4	11.4														
Joining Bay Excavation	132	84										0.6	0.6	0.6	0.6	0.6	0.6													
Joining Bay Base Construction	132	84										0.6	0.6	0.6	0.6	0.6	0.6													
Pulling and connection of cables	132	192												1.5	1.5	1.5	1.5	1.5	1.5											
Backfill over Joining Bays	132	47												0.4	0.4	0.4	0.4	0.4	0.4											
Major HDD crossing of Holderness Drain (OB ID S6-WX-3) - HDD Entry Only																														
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	46										2.1																		
Mobilisation of HDD Kit and Welfare to compounds	22	25										1.1																		
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	260												6.7	6.7															
Demobilisation of HDD Kit and welfare	22	25														1.1														
Remove of onshore HDD Entry Compound	22	96																								4.4				
Major HDD crossing of Monk Dike and Meaux & Routh East Drain (OB Dts S6-WX-1 and S6-WX-2) - HDD Exit Only																														
Establish HDD Exit Pit Compound	22	50						2.3																						
Mobilisation of HDD Kit and Welfare to compounds	22	5						0.2																						
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	83							1.3	1.3	1.3																			
Demobilisation of HDD Kit and welfare	22	5										0.2																		
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0										0.0																		
Minor HDD crossing of A1035 (OB ID S6-RX-01) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	95					4.3																							
Mobilisation of HDD Kit and Welfare to compounds	22	19					0.9																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	281						12.8																						
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0							0.0																					
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	0							0.0																					
Minor HDD crossing of Onshore Export Cables of Dogger Band A & B (OB ID S6-UUK-2) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds - Reuse from previous HDD in Section	22	0							0.0																					
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0							0.0																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	281								12.8																				
Demobilisation of HDD Kit and welfare	22	19									0.9																			
Remove of onshore HDD Entry and Exit Compounds	22	95																								4.3				
																		</												

Section 6

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1	2	2	2			2	2	2	2	2	2	2	2	3	3	
30T Excavator	2	3	2	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3	
20T Dumper	3	3	3	3	3	3	2	4	4	6	6	6	6	6	4	4	2	4	
Smooth Drum vibrio road roller	1	2	1	2	2	1			1						1	1	2		
21T excavator	1	2	1	2	2	1	3	3	3	3	3	3	3	2	2	1	2	2	
ST Forward Tipping Dumper	1	2	1	2	2	1	3	3	3	2	2	2	2	2	2	1	2	2	
Loading shovel	1	2	1	2	2	2	3	3	3	3	3	3	3	3	1	3	2	3	
Trench Rofler							2	2	2	2	2	2	2	1	1				
Tractor & fencing kit	1	1	1	1	1	1			1						1	1	1	1	
Tractor & trailer	1	2	1	2	2	1	2	2	3	3	3	3	3	1	1	1	2	2	
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & cable drum trailer										1	1	1	1	1	1				
Tractor & soil filler, roller, seeder																	1	1	
Cement mixer																			
Mobile crane																			
Grader	1	2	1	2	2	1			1										
Cable laying tracked crane																			
Cable winch											1	1	1	1	1	1			
Pre-cast concrete truck																			
Mobile concrete pump									1	1	1	1	1	1					
Telehandler	1	2	1	2	2	1	2	2	3	3	3	3	3	1					
Mobile self-contained wellfire unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Crawler Crane							1	1	1	1	1	1	1						
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	2	2	2	2	2	4	6	6	6	6	3	3	1	2	2	
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	1	2	2	4	4	4	4	4	2	2	2	2	2	
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)							1	1	3	3	3	3	3	2	2	1			
Total Plant Onsite In Section Per Month	21	31	20	30	30	21	31	31	47	47	47	47	47	30	31	20	30	30	
Total Deliveries / Removals	21	16	11	18	2	9	20	6	16	8	6	6	6	17	7	13	16	38	
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.5	0.0	0.4	0.9	0.0	0.7	0.4	0.0	0.0	0.0	0.8	0.3	0.6	0.5	1.4	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	1	1	0	1	2	0	2	1	0	0	0	2	1	2	1	

[illegible]

Section 6

Indicative Total Vehicle Movement Requirements

Activity	Month																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	19	42	27	38	58	4	85	61	66	74	74	65	63	7	22	36	51	54												
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage Increase is presented	21	47	31	42	64	5	94	68	73	82	82	72	70	9	25	40	56	60												
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	1	0	1	2	0	2	1	0	0	0	2	1	2	1	3												
Average total two-way HGV Movements Per Day	23	48	32	43	64	6	96	68	76	83	82	72	70	11	26	42	57	63												
Maximum Total Employee Two-way Movements Per Day (carismal van)	88	112	86	108	118	92	122	112	138	152	152	140	140	110	110	86	110	110												
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	97	124	95	119	130	102	135	124	152	168	168	154	154	121	121	95	121	121												
Maximum Total HGV and Carismal van Two-way Movements Per Day (carismal van)	120	172	127	162	194	108	231	192	227	251	250	226	224	132	147	137	178	184												

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																			
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Establish TCCs and site accesses	44	190	4.3	4.3																		
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																			
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	608		13.8	13.8																	
Cable Construction Works																						
Trench Excavation and duct installation	88	1,500				17.0	17.0	17.0	17.0													
Trench Backfill with CBS and protective covers	88	1,048				11.9	11.9	11.9	11.9													
Jointing Bay Excavation	66	43										0.7	0.7	0.7								
Jointing Bay Base Construction	66	43										0.7	0.7	0.7								
Pulling and connection of cables	66	96											1.5	1.5	1.5							
Backfill over Jointing Bays	66	24											0.4	0.4	0.4							
Major HDD crossing of Holderness Drain (OB ID S6-WX-3) - HDD EXIT Only																						
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	0									0.0											
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0											
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	47										1.1	1.1									
Demobilisation of HDD Kit and welfare	22	5												0.2								
Remove of onshore HDD Entry Compound	22	48														2.2						
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Exit Only																						
Establish HDD Exit Pit Compound	22	48					2.2															
Mobilisation of HDD Kit and Welfare to compounds	22	5					0.2															
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	47						0.7	0.7	0.7												
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0											
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0									0.0											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	608														13.8	13.8					
Demobilisation of Welfare from TCC	22	13															0.6					
TCC and access road Removal	44	190														4.3	4.3					
Average Section Skip HGV Movements Per Day	330	110	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3					
Total HGVs per day			5.2	18.5	14.2	29.3	31.7	30.0	30.0	1.0	0.3	2.7	4.5	3.7	2.2	20.7	19.1	0.0	0.0	0.0		
Total two-way HGV movements per day			10.5	36.9	28.3	58.6	63.4	60.0	60.0	2.1	0.7	5.4	9.0	7.4	4.3	41.3	38.1	0.0	0.0	0.0		

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer	1	2	1		1				2		2	2	2	3	3			
30T Excavator	2	3	2	3	3	3	3		2	2	3	3	2	3	3			
20T Dumper	3	3	3	4	4	4	4		2	2	4	4	2	4	4			
Smooth Drum vibrio road roller	1	2	1		1				1					2	2			
21T excavator	1	2	1	3	3	3	3		1	1	2	2	1	2	2			
5T Forward Tipping Dumper	1	2	1	3	3	3	3		1	1	2	2	1	2	2			
Loading shovel	1	2	1	3	3	3	3		2		1	1	1	3	3			
Trench Roller				2	2	2	2				1	1	1					
Tractor & fencing kit	1	1	1		1				1					1	1			
Tractor & trailer	1	2	1	2	3	2	2		1	1	1	1		2	2			
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1		1	1	1	1	1	1	1			
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1		1	1	1	1	1	1	1			
Tractor & cable drum trailer											1	1	1					
Tractor & soil tiller, roller, seeder														1	1			
Cement mixer																		
Mobile crane																		
Grader	1	2	1		1				1									
Cable laying tracked crane																		
Cable winch											1	1	1					
Pre-cast concrete truck																		
Mobile concrete pump										1	1	1						
Telehandler	1	2	1	2	3	2	2		1	1	1	1						
Mobile self-contained welfare unit	1	1	1	1	1	1	1		1	1	1	1	1	1	1			
Crawler Crane				1	1	1	1											
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	2	3	2	2		2	2	3	3	2	2	2			
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	2	2		1	1	2	2	1	2	2			
Road surface paver & roller	1	1																
Pump deliveries (corrected for 4 per delivery)				1	2	1	1			1	2	2	1					
Total Plant Onsite In Section Per Month	21	31	20	31	40	31	31	0	21	16	30	30	19	30	30	0	0	0
Total Deliveries / Removals	21	10	11	19	9	9	31	0	21	9	14	0	11	19	30	0	0	0
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.9	0.4	0.4	1.4	0.0	1.0	0.4	0.6	0.0	0.5	0.9	1.4	0.0	0.0	0.0
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	2	1	1	3	0	2	1	2	0	1	2	3	0	0	0

Section 7

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCC and site accesses	44	132	3	3																
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3															
Cable Construction Works																				
Trench Excavation and duct installation	88	176				2	2	2	2											
Trench Backfill with CBS and protective covers	88	176				2	2	2	2											
Jointing Bay Excavation	66	132										2	2	2						
Jointing Bay Base Construction	66	132										2	2	2						
Pulling and connection of cables	66	198											3	3	3					
Backfill over Jointing Bays	66	132											2	2	2					
Major HDD crossing of Holderness Drain (OB ID S6-WX-3) - HDD EXIT Only																				
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22									1									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132										3	3							
Remove of onshore HDD Entry Compound	22	44														2				
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Exit Only																				
Establish HDD Exit Pit Compound	22	44					2													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	66	198						3	3	3										
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22									1									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156														3	3			
TCC and access road Removal	52	156														3	3			
Plant Operators																				
Overall Plant Operators	364	7,826	17	26	16	25	31	25	25		17	11	22	22	14	25	25			
Section 1 Engineering Personnel																				
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,560	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
Average Total Employees per day			24	36	23	33	41	36	36	7	23	22	38	35	23	37	35	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	66	82	72	72	14	46	44	76	70	46	74	70	0	0	0

Section 7
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	37	28	59	63	60	60	2	1	5	9	7	4	41	38	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	41	32	65	70	66	66	3	1	6	10	9	5	46	42	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	2	1	1	3	0	2	1	2	0	1	2	3	0	0	0
Average total two-way HGV Movements Per Day	14	42	33	67	71	67	69	3	3	7	12	9	6	48	45	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	66	82	72	72	14	46	44	76	70	46	74	70	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	73	91	80	80	16	51	49	84	77	51	82	77	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	122	84	140	162	147	149	19	54	56	96	86	57	130	122	0	0	0

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	66	772		11.7	11.7	11.7														
Cable Construction Works																				
Trench Excavation and duct installation	66	1,134					17.2	17.2	17.2											
Trench Backfill with CBS and protective covers	66	792					12.0	12.0	12.0											
Jointing Bay Excavation	66	43										0.7	0.7	0.7						
Jointing Bay Base Construction	66	43										0.7	0.7	0.7						
Pulling and connection of cables	66	96											1.5	1.5	1.5					
Backfill over Jointing Bays	66	24											0.4	0.4	0.4					
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Entry Only																				
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	0									0.0									
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	374										8.5	8.5							
Demobilisation of HDD Kit and welfare	22	25												1.1						
Remove of onshore HDD Entry Compound	22	95														4.3				
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Entry Only																				
Establish HDD Entry Pit Compound	22	95					4.3													
Mobilisation of HDD Kit and Welfare to compounds	22	25					1.1													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	374						5.7	5.7	5.7										
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0									
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0									0.0									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	772														17.5	17.5			
Demobilisation of Welfare from TCC	22	13															0.6			
TCC and access road Removal	44	190														4.3	4.3			
Average Section Skip HGV Movements Per Day	330	110	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
Total HGVs per day			5.2	16.3	12.0	12.0	34.9	35.2	35.2	6.0	0.3	10.1	12.0	4.6	2.2	26.5	22.8	0.0	0.0	
Total two-way HGV movements per day			10.5	32.7	24.1	24.1	69.9	70.4	70.4	12.0	0.7	20.3	23.9	9.2	4.3	53.0	45.6	0.0	0.0	

Section 8

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1	1	1				2		2	2	2	3	3				
30T Excavator	2	3	2	2	3	3	3		2	2	3	3	2	3	3				
20T Dumper	3	3	3	3	4	4	4		2	2	4	4	2	4	4				
Smooth Drum vibrio road roller	1	2	1	1	1				1					2	2				
21T excavator	1	2	1	1	3	3	3		1	1	2	2	1	2	2				
5T Forward Tipping Dumper	1	2	1	1	3	3	3		1	1	2	2	1	2	2				
Loading shovel	1	2	1	1	3	3	3		2		1	1	1	3	3				
Trench Roller					2	2	2				1	1	1						
Tractor & fencing kit	1	1	1	1	1				1					1	1				
Tractor & trailer	1	2	1	1	3	2	2		1	1	1	1		2	2				
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1		1	1	1	1	1	1	1				
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1		1	1	1	1	1	1	1				
Tractor & cable drum trailer											1	1	1						
Tractor & soil tiller, roller, seeder														1	1				
Cement mixer																			
Mobile crane																			
Grader	1	2	1	1	1				1										
Cable laying tracked crane																			
Cable winch											1	1	1						
Pre-cast concrete truck																			
Mobile concrete pump										1	1	1							
Telehandler	1	2	1	1	3	2	2		1	1	1	1							
Mobile self-contained welfare unit	1	1	1	1	1	1	1		1	1	1	1	1	1	1				
Crawler Crane					1	1	1												
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	3	2	2		2	2	3	3	2	2	2				
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	2	2		1	1	2	2	1	2	2				
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)					2	1	1			1	2	2	1						
Total Plant Onsite In Section Per Month	21	31	20	20	40	31	31	0	21	16	30	30	19	30	30	0	0	0	
Total Deliveries / Removals	21	10	11	0	20	9	31	0	21	9	14	0	11	19	30	0	0	0	
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.9	0.4	1.4	0.0	1.0	0.4	0.6	0.0	0.5	0.9	1.4	0.0	0.0	0.0	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	2	1	3	0	2	1	2	0	1	2	3	0	0	0	

Section 8

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																										
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30									
Establish TCC and site accesses	44	132	3	3																									
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	66	198		3	3	3																							
Cable Construction Works																													
Trench Excavation and duct installation	66	132					2	2	2																				
Trench Backfill with CBS and protective covers	66	132					2	2	2																				
Jointing Bay Excavation	66	132										2	2	2															
Jointing Bay Base Construction	66	132										2	2	2															
Pulling and connection of cables	66	198											3	3	3														
Backfill over Jointing Bays	66	132											2	2	2														
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Entry Only																													
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22									1																		
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	264										6	6																
Remove of onshore HDD Entry Compound	22	44															2												
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Entry Only																													
Establish HDD Entry Pit Compound	22	44					2																						
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	66	396						6	6	6																			
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22									1																		
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156															3	3											
TCC and access road Removal	52	156															3	3											
Plant Operators																													
Overall Plant Operators	364	7,592	17	26	16	16	31	25	25		17	11	22	22	14	25	25												
Section 1 Engineering Personnel																													
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,560	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4												
Average Total Employees per day			24	36	23	23	41	39	39	10	23	25	41	35	23	37	35	0	0	0									
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	46	82	78	78	20	46	50	82	70	46	74	70	0	0	0									

Section 8
Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	33	24	24	70	70	70	12	1	20	24	9	4	53	46	0	0	0	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	37	27	27	79	79	79	14	1	23	27	11	5	60	51	0	0	0	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	2	1	3	0	2	1	2	0	1	2	3	0	0	0	
Average total two-way HGV Movements Per Day	14	38	28	27	81	80	82	14	3	24	29	11	6	62	54	0	0	0	
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	82	78	78	20	46	50	82	70	46	74	70	0	0	0	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	91	86	86	22	51	55	91	77	51	82	77	0	0	0	
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	118	79	78	172	166	168	36	54	79	120	88	57	144	131	0	0	0	

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	344		7.8	7.8															
Cable Construction Works																				
Trench Excavation and duct installation	44	842				19.1	19.1													
Trench Backfill with CBS and protective covers	44	589				13.4	13.4													
Jointing Bay Excavation	44	29										0.7	0.7							
Jointing Bay Base Construction	44	29										0.7	0.7							
Pulling and connection of cables	44	64											1.5	1.5						
Backfill over Jointing Bays	44	17											0.4	0.4						
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Exit Only																				
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	0									0.0									
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month	44	32										0.7	0.7							
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	5												0.2						
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	48													2.2					
Major HDD crossing of Catchwater Drain (OB IDs S9-WX-1) - HDD Exit Only																				
Establish HDD Exit Pit Compound	22	48						2.2												
Mobilisation of HDD Kit and Welfare to compounds	22	5						0.2												
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month	44	32							0.7	0.7										
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0									
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0									0.0									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	344													7.8	7.8				
Demobilisation of Welfare from TCC	22	13														0.6				
TCC and access road Removal	44	190													4.3	4.3				
Average Section Skip HGV Movements Per Day	308	102	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3				
Total HGVs per day			5.2	12.5	8.1	32.9	32.9	2.7	1.0	1.0	0.3	2.4	4.2	2.4	14.6	13.1	0.0	0.0	0.0	
Total two-way HGV movements per day			10.5	24.9	16.3	65.7	65.7	5.5	2.1	2.1	0.7	4.7	8.4	4.8	29.3	26.1	0.0	0.0	0.0	

Section 9

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer	1	2	1			1			2		2	2	3	3				
30T Excavator	2	3	2	3	3	2			2	2	3	2	3	3				
20T Dumper	3	3	3	4	4				2	2	4	2	4	4				
Smooth Drum vibrio road roller	1	2	1			1			1				2	2				
21T excavator	1	2	1	3	3	1			1	1	2	1	2	2				
5T Forward Tipping Dumper	1	2	1	3	3	1			1	1	2	1	2	2				
Loading shovel	1	2	1	3	3	1			2		1	1	3	3				
Trench Roller				2	2						1	1						
Tractor & fencing kit	1	1	1			1			1				1	1				
Tractor & trailer	1	2	1	2	2	1			1	1	1		2	2				
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1			1	1	1	1	1	1				
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1			1	1	1	1	1	1				
Tractor & cable drum trailer											1	1						
Tractor & soil tiller, roller, seeder													1	1				
Cement mixer																		
Mobile crane																		
Grader	1	2	1			1			1									
Cable laying tracked crane																		
Cable winch											1	1						
Pre-cast concrete truck																		
Mobile concrete pump										1	1							
Telehandler	1	2	1	2	2	1			1	1	1							
Mobile self-contained welfare unit	1	1	1	1	1	1			1	1	1	1	1	1				
Crawler Crane				1	1													
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	2	2	1			2	2	3	2	2	2				
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	2			1	1	2	1	2	2				
Road surface paver & roller	1	1																
Pump deliveries (corrected for 4 per delivery)				1	1					1	2	1						
Total Plant Onsite In Section Per Month	21	31	20	31	31	17	0	0	21	16	30	19	30	30	0	0	0	0
Total Deliveries / Removals	21	10	11	19	0	39	0	0	21	9	14	11	19	30	0	0	0	0
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.9	0.0	1.8	0.0	0.0	1.0	0.4	0.6	0.5	0.9	1.4	0.0	0.0	0.0	0.0
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	2	0	4	0	0	2	1	2	1	2	3	0	0	0	0

Section 9

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																			
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Establish TCC and site accesses	44	132	3	3																		
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3																	
Cable Construction Works																						
Trench Excavation and duct installation	44	88				2	2															
Trench Backfill with CBS and protective covers	44	88				2	2															
Jointing Bay Excavation	44	88										2	2									
Jointing Bay Base Construction	44	88										2	2									
Pulling and connection of cables	44	132											3	3								
Backfill over Jointing Bays	44	88											2	2								
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Exit Only																						
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22									1											
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132										3	3									
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	44													2							
Major HDD crossing of Catchwater Drain (OB IDs S9-WX-1) - HDD Exit Only																						
Establish HDD Exit Pit Compound	22	44						2														
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132							3	3												
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22									1											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156													3	3						
TCC and access road Removal	52	156													3	3						
Plant Operators																						
Overall Plant Operators	312	6,136	17	26	16	25	25	13			17	11	22	14	25	25						
Section 1 Engineering Personnel																						
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	364	1,456	4	4	4	4	4	4	4	4	4	4	4	4	4	4						
Average Total Employees per day			24	36	23	33	33	19	7	7	23	22	38	23	37	35	0	0	0	0		
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	66	66	38	14	14	46	44	76	46	74	70	0	0	0	0		

Section 9
Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	25	16	66	66	5	2	2	1	5	8	5	29	26	0	0	0	0	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	28	18	73	73	7	3	3	1	6	10	6	33	29	0	0	0	0	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	2	0	4	0	0	2	1	2	1	2	3	0	0	0	0	
Average total two-way HGV Movements Per Day	14	29	19	75	73	11	3	3	3	7	12	7	35	32	0	0	0	0	
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	66	66	38	14	14	46	44	76	46	74	70	0	0	0	0	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	73	73	42	16	16	51	49	84	51	82	77	0	0	0	0	
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	109	70	148	146	53	19	19	54	56	96	58	117	109	0	0	0	0	

Section 10

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCCs and site accesses	44	511	11.6	11.6																								
Mobilisation of Welfare and Operation Plant to TCC	22	45	2.9																									
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	66	917		13.9	13.9	13.9																						
Cable Construction Works																												
Trench Excavation and duct installation	110	1,529									16.6	16.6	16.6	16.6	16.6													
Trench Backfill with CBS and protective covers	110	1,278									11.6	11.6	11.6	11.6	11.6													
Jointing Bay Excavation	110	70										0.6	0.6	0.4	0.6	0.6												
Jointing Bay Base Construction	110	69										0.6	0.6	0.6	0.6	0.6												
Pulling and connection of cables	110	160												1.5	1.5	1.5	1.5	1.5										
Backfill over Jointing Bays	110	40												0.4	0.4	0.4	0.4	0.4										
Major HDD crossing of Catchwater Drain (OB IDs 99-WX-1) - HDD Entry Only																												
Establish HDD Entry Pit Compound	22	96							4.4																			
Mobilisation of HDD Kit and Welfare to compounds	22	25							1.1																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	280							5.7	5.7																		
Demobilisation of HDD Kit and welfare	22	25										1.1																
Remove of onshore HDD Exit Compound	22	96																	4.4									
Minor HDD crossing of Driffield Road (OB ID S10-RX-1) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compounds	22	96							4.3																			
Mobilisation of HDD Kit and Welfare to compounds	22	19							0.9																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	281							12.8																			
Demobilisation of HDD Kit and welfare - Reused at next HDD in section	22	0							0.0																			
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	0							0.0																			
Minor HDD crossing of A1636 (OB ID S10-RX-2) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compound - Reuse from previous HDD in Section	22	0							0.0																			
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0							0.0																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	281									12.8																	
Demobilisation of HDD Kit and welfare - Reused at next HDD in section, exit compound equipment removed from site	22	2									0.1																	
Remove of onshore HDD Entry and Exit Compounds - some materials reused at next HDD in section, exit compound materials removed from site	22	36									1.6																	
Minor HDD crossing of A1174 (OB ID S10-RX-4) - HDD Entry																												
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	0									0.0																	
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	249										11.3																
Demobilisation of HDD Kit and welfare	22	17											0.6															
Remove of onshore HDD Entry Compound	22	59																	2.7									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	917																		13.9	13.9	13.9						
Demobilisation of Welfare from TCC	22	45																								2.0		
TCC and access road Removal	44	511																			11.6	11.6						
Average Section Skip HGV Movements Per Day	396	363	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Total HGVs per day			14.6	26.4	14.8	14.8	6.1	19.2	6.6	19.4	32.0	41.8	33.0	32.2	32.2	4.0	9.8	14.8	26.4	28.5								
Total two-way HGV movements per day			29.2	52.8	29.6	29.6	12.2	38.4	13.2	38.7	64.1	83.6	66.0	64.5	64.5	8.0	19.6	29.6	52.8	56.9								

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1	1	1	1	2		2		2	2	2	2	2	2	3	3	
30T Excavator	2	3	2	2	2	2	2		3	3	3	3	3	3	3	2	3	3	
20T Dumper	3	3	3	3				2	4	6	6	6	6	4	4	2	4	4	
Smooth Drum vibrio road roller	1	2	1	1	1	1	1		1						1	1	2		
21T excavator	1	2	1	1	1	1	1		3	3	3	3	3	2	2	1	2	2	
ST Forward Tipping Dumper	1	2	1	1	1	1	1		3	3	2	2	2	2	2	1	2	2	
Loading shovel	1	2	1	1	1	1	2		3	3	3	3	3	1	3	2	3	3	
Tractor Roller									2	2	2	2	2	1	1				
Tractor & grading bit	1	1	1	1	1	1	1		1						1	1	1	1	
Tractor & trailer	1	2	1	1	1	1	1		2	3	3	3	3	1	1	1	2	2	
Tractor & fuel bowser (or self-propelled)	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	2	1	3	3	1	3	1		1	1	1	1	1	1	1	1	1	1	
Tractor & cable drum trailer												1	1	1	1	1			
Tractor & soil tiller, roller, seeder																	1	1	
Cement mixer																			
Mobile crane																			
Grader	1	2	1	1	1	1	1		1										
Cable laying tracked crane																			
Cable winch												1	1	1	1	1			
Pre-cast concrete truck											1	1	1	1	1				
Mobile concrete pump	1	2	1	1	1	1	1		3	3	3	3	3	1					
Telehandler	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	
Mobile self-contained waste unit									1	1	1	1	1						
Crawler Crane									1	1	1	1							
Mobile generator (deliveries corrected for 2 per delivery)	2	2	1	1	1	1	2		2	3	6	6	6	3	3	1	2	2	
Temporary lighting (deliveries corrected for 8 per delivery)	1	2	2	2	2	2	2		3	3	4	4	4	2	2	2	2	2	
Road surface paver & roller	1	1																	
Pump (deliveries corrected for 4 per delivery)									1	3	3	3	3	2	1				
Total Plant Onsite In Section Per Month	21	31	20	20	17	17	21	0	38	40	47	47	47	30	31	20	30	30	
Total Deliveries / Removals	21	10	11	0	3	0	27	0	38	12	3	0	0	17	7	13	10	38	
Average Deliveries / Removable Per Day	1.0	0.5	0.5	0.0	0.1	0.0	1.2	0.0	1.7	0.5	0.4	0.0	0.0	0.8	0.3	0.6	0.5	1.4	
Average Total Two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	1	0	1	0	3	0	4	2	1	0	2	1	2	1	

Section 10

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, scaffolders etc)	Total Working Days	Total Person Days	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCC and site accesses	44	132	3	3																								
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	66	198		3	3	3																						
Cable Construction Works																												
Trench Excavation and duct installation	110	220									2	2	2	2	2													
Trench Backfill with CBS and protective covers	110	220									2	2	2	2	2													
Joining Bay Excavation	110	220										2	2	2	2	2												
Joining Bay Base Construction	110	220										2	2	2	2	2												
Pulling and connection of cables	110	330												3	3	3	3	3										
Backfill over joining Bays	110	220												2	2	2	2	2										
Major HDD crossing of Catchwater Drain (OB ID S9-WX-1) - HDD Entry Only																												
Establish HDD Entry Pit Compound	22	44						2																				
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	44	264							6	6																		
Remove of onshore HDD Entry Compound	22	22															1											
Minor HDD crossing of Driftfield Road (OB ID S10-RX-1) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compound	22	44					2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110						5																				
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	22								1																		
Minor HDD crossing of A1636 (OB ID S16-RX-2) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compound	22	22							1																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110								6																		
Remove of onshore HDD Entry and Exit Compounds - some materials reused at next HDD in section, exit compound	22	22									1																	
Minor HDD crossing of A1174 (OB ID S16-RX-4) - HDD Entry																												
Establish HDD Entry Pit Compound	22	22									1																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	66										3																
Remove of onshore HDD Entry Compound	22	22															1											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	76	234																		3	3	3						
TCC and access road Removal	62	186																			3	3						
Plant Operators																												
Overall Plant Operators	442	10,140	17	26	16	16	13	13	17		31	30	33	33	33	22	24	16	25	25								
Section 1 Engineering Personnel																												
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4								
Project Engineering Personnel Based at Main TCC																												
Head Engineer, 2 x Admin Staff, OB, Assistant OB, Overall Site Foreman, H&S Supervisor, H&S Assistant, Environmental Clerk, Assistant Environmental Clerk, Lead Surveyor, 2 x catering staff, 2 x client representative, 2 x owners engineers, 3 x additional allowance	468	9,360	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
Average Total Employees per day			44	56	43	43	39	44	49	35	61	65	70	70	70	65	65	43	55	55								
Maximum Total Employee Two-way Movements Per Day (car/mal van)			88	112	86	86	78	88	98	70	122	130	140	140	140	110	110	86	110	110								

Section 10
Indicative Total Vehicle Movement Requirements

[illegible]

Section 16A

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190			4.3	4.3														
Mobilisation of Welfare and Operation Plant to TCC	22	13			0.6															
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	22	332					15.1													
Cable Construction Works																				
Trench Excavation and duct installation	44	805						18.3	18.3											
Trench Backfill with CBS and protective covers	44	563						12.8	12.8											
Jointing Bay Excavation	44	29											0.7	0.7						
Jointing Bay Base Construction	44	29											0.7	0.7						
Pulling and connection of cables	44	64												1.5	1.5					
Backfill over Jointing Bays	44	17												0.4	0.4					
Minor HDD crossing of Mature Woodland at Newbald Road (OB ID S16A-EOX-1) - HDD Exit																				
Establish HDD Exit Pit Compound	22	36							1.6											
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	2							0.1											
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	32								1.4										
Demobilisation of HDD Kit and welfare - Reused at next HDD in section.	22	0									0.0									
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section.	22	0									0.0									
Minor HDD crossing of A1174 (OB ID S10-RX-4) - HDD Exit																				
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	0									0.0									
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	32										1.4								
Demobilisation of HDD Kit and welfare	22	2											0.1							
Remove of onshore HDD Exit Compound	22	36														1.6				
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	22	332														15.1				
Demobilisation of Welfare from TCC	22	13															0.6			
TCC and access road Removal	44	190														4.3	4.3			
Average Section Skip HGV Movements Per Day	286	89			0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
Total HGVs per day			0.0	0.0	5.2	4.6	15.4	31.4	33.1	1.7	0.3	1.7	1.7	3.5	2.2	21.4	5.2	0.0	0.0	0.0
Total two-way HGV movements per day			0.0	0.0	10.4	9.3	30.8	62.8	66.3	3.5	0.6	3.5	3.4	6.9	4.3	42.7	10.4	0.0	0.0	0.0

Section 16A

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer			1	1	1		1		2			2	2	3	2			
30T Excavator			2	2	2	3	3		2		2	3	2	3	2			
20T Dumper			3	3	3	4	4		2		2	4	2	4	2			
Smooth Drum vibrio road roller			1	1	1		1		1					2	1			
21T excavator			1	1	1	3	3		1		1	2	1	2	1			
5T Forward Tipping Dumper			1	1	1	3	3		1		1	2	1	2	1			
Loading shovel			1	1	1	3	3		2			1	1	3	2			
Trench Roller						2	2					1	1					
Tractor & fencing kit			1	1	1		1		1					1	1			
Tractor & trailer			1	1	1	2	3		1		1	1		2	1			
Tractor & Fuel bowser (or self-propelled)			1	1	1	1	1		1		1	1	1	1	1			
Tractor & Water bowser (for dust suppression)			1	1	1	1	1		1		1	1	1	1	1			
Tractor & cable drum trailer												1	1					
Tractor & soil tiller, roller, seeder														1	1			
Cement mixer																		
Mobile crane																		
Grader			1	1	1		1		1									
Cable laying tracked crane																		
Cable winch												1	1					
Pre-cast concrete truck																		
Mobile concrete pump											1	1						
Telehandler			1	1	1	2	3		1		1	1						
Mobile self-contained welfare unit			1	1	1	1	1		1		1	1	1	1	1			
Crawler Crane						1	1											
Mobile generator deliveries (corrected for 2 per delivery)			2	2	1	2	3		2		2	3	2	2	1			
Temporary lighting deliveries (corrected for 8 per delivery)			1	1	2	2	3		1		1	2	1	2	1			
Road surface paver & roller			1	1														
Pump deliveries (corrected for 4 per delivery)						1	2				1	2	1					
Total Plant Onsite In Section Per Month	0	0	21	21	20	31	40	0	21	0	16	30	19	30	19	0	0	0
Total Deliveries / Removals	0	0	21	0	3	19	49	0	42	0	16	14	11	19	30	0	0	0
Average Deliveries / Removals Per Day	0.0	0.0	1.0	0.0	0.1	0.9	2.2	0.0	1.9	0.0	0.7	0.6	0.5	0.9	1.4	0.0	0.0	0.0
Average Total two-way HGV movements (Deliveries / Removals) Per Day	0	0	2	0	1	2	5	0	4	0	2	2	1	2	3	0	0	0

Section 16A
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	0	0	10	9	31	63	66	3	1	3	3	7	4	43	10	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	0	0	12	11	34	69	73	4	1	4	4	8	5	47	12	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	0	0	2	0	1	2	5	0	4	0	2	2	1	2	3	0	0	0
Average total two-way HGV Movements Per Day	0	0	14	11	35	71	78	4	5	4	6	10	6	49	15	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	0	0	48	48	46	66	82	12	46	12	38	70	46	72	46	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	0	0	53	53	51	73	91	14	51	14	42	77	51	80	51	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	0	0	67	64	86	144	169	18	56	18	48	87	57	129	66	0	0	0

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

[illegible]

Section 16B

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer	1	2	1		1		2			2	2	2	2	3	3			
30T Excavator	2	3	2		2		3	3	3	3	3	3	2	3	3			
20T Dumper	3	3	3				4	4	6	4	4	4	2	4	4			
Smooth Drum vibrio road roller	1	2	1		1		1							2	2			
21T excavator	1	2	1		1		3	3	3	2	2	2	1	2	2			
5T Forward Tipping Dumper	1	2	1		1		3	3	3	2	2	2	1	2	2			
Loading shovel	1	2	1		1		3	3	3	1	1	1	1	3	3			
Trench Roller							2	2	1	1	1	1						
Tractor & fencing kit	1	1	1		1		1							1	1			
Tractor & trailer	1	2	1		1		2	2	3	1	1	1		2	2			
Tractor & Fuel bowser (or self-propelled)	1	1	1		1		1	1	1	1	1	1	1	1	1			
Tractor & Water bowser (for dust suppression)	1	1	1		1		1	1	1	1	1	1	1	1	1			
Tractor & cable drum trailer										1	1	1	1					
Tractor & soil tiller, roller, seeder														1	1			
Cement mixer																		
Mobile crane																		
Grader	1	2	1		1		1											
Cable laying tracked crane																		
Cable winch										1	1	1	1					
Pre-cast concrete truck									1	1	1	1						
Mobile concrete pump																		
Telehandler	1	2	1		1		3	2	3	1	1	1						
Mobile self-contained welfare unit	1	1	1		1		1	1	1	1	1	1	1	1	1			
Crawler Crane							1	1	1									
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1		1		2	2	3	3	3	3	2	2	2			
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2		2		3	2	3	2	2	2	1	2	2			
Road surface paver & roller	1	1																
Pump deliveries (corrected for 4 per delivery)							1	1	3	2	2	2	1					
Total Plant Onsite In Section Per Month	21	31	20	0	17	0	38	31	40	30	30	30	19	30	30	0	0	0
Total Deliveries / Removals	21	10	31	0	34	0	38	7	9	18	0	0	11	19	30	0	0	0
Average Deliveries / Removals Per Day	1.0	0.5	1.4	0.0	1.5	0.0	1.7	0.3	0.4	0.8	0.0	0.0	0.5	0.9	1.4	0.0	0.0	0.0
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	3	0	4	0	4	1	1	2	0	0	1	2	3	0	0	0

Section 16B
Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCC and site accesses	44	132	3	3																										
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3																									
Cable Construction Works																														
Trench Excavation and duct installation	66	132							2	2	2																			
Trench Backfill with CBS and protective covers	66	132							2	2	2																			
Jointing Bay Excavation	88	176									2	2	2	2																
Jointing Bay Base Construction	88	176									2	2	2	2																
Pulling and connection of cables	88	264										3	3	3	3															
Backfill over Jointing Bays	88	176										2	2	2	2	2														
Major HDD Exit for HDD crossing of A164 (OB ID S16B-RX-4) - HDD Entry																														
Establish HDD Entry Pit Compound	22	44					2																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	66	396						6	6	6																				
Remove of onshore HDD Exit Compound	22	44																2												
Minor HDD crossing of B1230 (OB ID S16B-RX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	44					2																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110						5																						
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section for entry compound. Exit compound materials removed from site	22	22							1																					
Minor HDD crossing of Mature Woodland at Newbald Road (OB ID S16A-EOX-1) - HDD Entry																														
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	22							1																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	66								3																				
Remove of onshore HDD Entry Compound	22	44									2																			
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156																3	3											
TCC and access road Removal	52	156																3	3											
Plant Operators																														
Overall Plant Operators	338	7,488	17	26	16		13		31	25	30	22	22	22	14	25	25													
Section 1 Engineering Personnel																														
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	364	1,456	4	4	4		4	4	4	4	4	4	4	4	4	4	4													
Average Total Employees per day			24	36	23	0	21	15	47	42	44	35	35	35	23	37	35	0	0	0										
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	0	42	30	94	84	88	70	70	70	46	74	70	0	0	0										

Section 16B
Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	11	41	32	0	22	47	107	107	89	7	7	7	4	55	42	0	0	0	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	46	36	0	24	53	119	119	99	8	8	8	5	62	47	0	0	0	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	3	0	4	0	4	1	1	2	0	0	1	2	3	0	0	0	
Average total two-way HGV Movements Per Day	14	47	39	0	28	53	123	120	100	10	8	8	6	64	50	0	0	0	
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	0	42	30	94	84	88	70	70	70	46	74	70	0	0	0	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	0	47	33	104	93	97	77	77	77	51	82	77	0	0	0	
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	127	90	0	75	86	227	213	197	87	85	85	57	146	127	0	0	0	

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

[illegible]

Section 17

Indicative Construction Plant Requirements

[illegible]

Section 17 Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (General Labourers, Drivers, Drilling Operators, Electricians, Joiners, Welders etc.)	Total Working Days	Total Person Days	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCC and site access	44	132	3	3																								
Site preparation including fencing, temporary drainage, fuel tank connection and layout strip	44	132		3	3																							
Cable Construction Works																												
Trench Excavation and dust installation	44	88										3	2															
Trench Backfill with CBS and protective covers	44	88										5	5															
Joining Bay Excavation	44	88												3	3													
Joining Bay Base Construction	44	88												3	3													
Pulling and connection of cables	44	132													3	3												
Backfill over Joining Bays	44	88													2	2												
Major HDD Exit for HDD crossing of A164 (DB ID S148-R5-1) - HDD Exit																												
Establish HDD Exit Pit Compound	22	44					2																					
HDD drilling works and dusting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes advice of JSD, JSD/RO/RA/...	66	166						2	2	2																		
Removal of surface HDD Exit Compound	22	44																2										
Minor HDD crossing of National Grid High Pressure Gas Main (DB ID S17-UG-1) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compound	22	44					2																					
HDD drilling works and dusting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes advice of JSD, JSD/RO/RA/...	22	110						6																				
Removal of surface HDD Entry and Exit Compound - materials moved at end of HDD in section	22	22							1																			
Minor HDD crossing of National Grid High Pressure Gas Main (DB ID S17-UG-1) - HDD Entry and Exit (for 400KV Busbar)																												
Establish HDD Entry and Exit Pit Compound - Reuse from established HDD 1. Busbar	22	22							1																			
HDD drilling works and dusting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes advice of JSD, JSD/RO/RA/...	22	110								5																		
Removal of surface HDD Entry and Exit Compound - materials moved at end of HDD in section. Removal of materials associated with Exit Pit Compound	22	22									1																	
Minor HDD crossing of A167 (DB ID S17-RK-2) - HDD Entry																												
Establish HDD Entry Pit Compound - Reuse from previous HDD in section	22	22									1																	
HDD drilling works and dusting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes advice of JSD, JSD/RO/RA/...	44	132										2	3															
Removal of surface HDD Entry Pit Compound	22	44																										
Heat Road Removal (includes removal of fencing) and reinstatement of asphalt	22	155																							3	3		
TCC and access road Removal	52	155																								3	3	
Plant Operations																												
Overall Plant Operations	338	7,872	17	26	16	16	27	17			31	36	11	22	14	25	25											
Section 1 Engineering Personnel																												
Lead Engineer, 1 Assistant Engineers, 1 x surveyors, 1 x	360	1,560	4	6	4	4	6	4	4	6	4	4	6	4	4	6	4	4	6									
Average Total Employees per day			24	36	23	20	35	12	28	12	41	36	22	35	23	39	35	0	0	0								
Maximum Total Employees Two-way Movement Per Day (Cumulative)			48	72	46	40	70	24	52	24	82	72	44	70	46	78	70	0	0	0								

Activity	Months																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
Materials and Welfare and Operation Plant Daily HGVs Monitors Total Two-way HGVs Monitors Per Day	11	15	26	1	10	34	3	24	63	63	17	9	4	45	36	0	0	0												
Increase in account for Miscellaneous allowances presented in Page 11 of Materials Welfare Monitors tab where the percentage increase is presented	12	20	29	3	16	37	4	37	30	19	10	12	3	40	42	0	0	0												
Construction Plant Average Total two-way HGVs Monitors Per Day	7	1	0	4	0	4	0	1	0	2	1	2	1	2	5	0	0	0												
Average total two-way HGVs Monitors Per Day	14	38	30	1	20	37	9	37	62	88	21	12	6	51	43	0	0	0												
Maximum Total Employee Two-way Monitors Per Day (contractual max)	45	72	45	40	70	28	52	24	92	72	44	70	45	75	70	0	0	0												
Employee Two-Way Monitors Per Day additional 10% for Miscellaneous Monitors	55	89	51	44	77	27	58	27	91	79	49	77	51	86	77	0	0	0												
Maximum Total HGVs and Contracted van Monitors Per Day (contractual max)	67	119	45	50	84	66	64	105	149	70	59	87	137	120	0	0	0													

Substation Construction (Single Project Substations)
Average Materials and Welfare and Operation Plant Daily HGV Movements

[illegible]

Monthly Construction Plant Requirements

Activity	Months																																																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45						
OS Baser	1	2	3	3	3	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																										
JCB excavator	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
JCB Dumper	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Smooth Down vibrio road roller	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
JCB excavator	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
AT Forward Tipping Dumpster	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Loading shovel	1	2	2	1					1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Trench Roller									1													1																													
Tractor & fencing kit	1	1	1								1	1																																							
Tractor & trailer	1	2	1						1	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Tractor & fuel bowser (for self-propelled)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & cable drum trailer																																																			
Tractor & soil roller, roller, loader											1																																								
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																																			
Cement mixer																																						</													

Substation Construction

Average Daily Personnel Requirements

[illegible]

Total Vehicle Movement Requirements (Substation)

Activity	Week																																													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	54	74	132	86	86	86	86	108	149	64	64	64	64	64	64	64	64	64	64	65	64	64	76	13	13	13	13	13	13	13	13	13	13	13	2	2	2	2	2	2	2	2	49	49	49	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	64	88	156	102	102	102	102	128	176	76	76	76	76	76	76	76	76	76	76	77	76	76	90	16	16	16	16	16	16	16	16	16	16	16	2	2	2	2	2	2	2	2	59	59	59	
Construction Plant Average Total two-way HGV Movements (Deliveries / Removals) Per Week)	2	1	2	1	0	0	0	1	1	3	0	0	2	0	0	2	0	0	0	1	1	0	1	2	0	0	2	3	0	0	0	0	3	0	0	0	0	0	0	0	0	4	0	2		
Average total two-way HGV Movements Per Day	66	89	158	103	102	102	102	129	177	79	76	76	76	76	76	76	76	76	76	78	77	76	91	18	16	16	16	18	19	16	16	16	16	16	5	2	2	2	2	2	2	2	63	59	61	
Maximum Total Employee Two-way Movements Per Day (car/mal van)	88	112	112	94	94	94	94	114	138	122	122	122	156	156	156	170	170	170	170	182	170	202	210	156	156	156	132	106	106	106	106	106	106	78	78	78	78	78	78	78	78	86	86	86		
Employee Two-way Movements Plus additional 10% for Miscellaneous Movements	97	124	124	104	104	104	104	124	156	135	135	135	172	172	172	187	187	187	187	187	187	223	231	172	172	172	146	117	117	117	117	117	117	86	86	86	86	86	86	86	86	95	95	95		
Maximum Total HGV and Car/mal van Two-way Movements Per Day (combined van)	163	213	282	207	206	206	206	255	329	214	211	211	250	248	248	265	263	263	263	263	280	264	299	322	190	188	188	164	136	133	133	133	133	91	88	88	88	88	88	88	88	88	88	158	154	155

Section 15

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCCs and site accesses	44	190	4.3	4.3																								
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																									
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	66	709		18.7	10.7	18.7																						
Cable Construction Works																												
Trench Excavation and duct installation	66	951					14.4	14.4	14.4																			
Trench Backfill with CBS and protective covers	66	865					10.1	10.1	10.1																			
Jointing Bay Excavation	66	43											0.7	0.7	0.7													
Jointing Bay Base Construction	66	43											0.7	0.7	0.7													
Pulling and connection of cables	66	96													1.5	1.5	1.5											
Backfill over Jointing Bays	66	24													0.4	0.4	0.4											
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S15-UUX-1) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compounds	22	95			4.3																							
Mobilisation of HDD Kit and Welfare to compounds	22	19			0.9																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	286				13.0																						
Demobilisation of HDD Kit and welfare - Reused at next HDD in section	22	0					0.0																					
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	0					0.0																					
Minor HDD crossing of SABIC / NEOS High Pressure Ethylene Pipeline (OB ID S15-UUX-2) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compounds - Reuse from previous HDD in Section	22	0					0.0																					
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0					0.0																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	286						13.0																				
Demobilisation of HDD Kit and welfare - Reused at next HDD in section	22	0							0.0																			
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	0							0.0																			
Minor HDD crossing of Proposed Permanent Substation Access for Hormesa Project 4 (OB ID S15-RX-3) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compounds - Reuse from previous HDD in Section	22	0							0.0																			
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0							0.0																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	286								13.0																		
Demobilisation of HDD Kit and welfare - Reused at next HDD in section. Removal of plant associated with Entry Pit Compound	22	17									0.8																	
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section. Removal of Materials associated with Entry Pit Compound	22	59									2.7																	
Minor HDD crossing of A1079 (OB ID S17-RX-2) - HDD Exit																												
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section	22	0									0.0																	
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	37										0.8	0.2															
Demobilisation of HDD Kit and welfare - Reused at next HDD in section	22	2												0.1														
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	36														1.6												
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	709																16.1	16.1									
Demobilisation of Welfare from TCC	22	13																	0.6									
TCC and access road Removal	44	190																4.3	4.3									
Average Section Skip HGV Movements Per Day	352	123	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4									
Total HGVs per day			5.3	15.4	16.3	24.1	24.9	37.9	24.9	13.4	3.8	1.2	2.5	3.6	3.5	3.8	20.8	21.4	0.0	0.0								
Total two-way HGV movements per day			10.6	30.9	32.6	48.2	49.7	75.7	49.7	26.7	7.7	2.4	5.0	7.2	7.0	7.6	41.6	42.8	0.0	0.0								

Section 15

Indicative Construction Plant Requirements

Plant	Month																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
D6 Dozer	1	2	1	2			2																							
30T Excavator	2	3	3	2	3	3	3		2			2	3	3	3	3														
20T Dumper	3	3	4	3	4	4	4		2			2	4	4	4	4														
Smooth Drum vibrio road roller	1	2	2	1	1			1							1	2	2													
21T excavator	1	2	2	1	3	3	3		1			1	2	2	2	2	2													
5T Forward Tipping Dumper	1	2	2	1	3	3	3		1			1	2	2	2	2														
Loading shovel	1	2	3	1	3	3	3		2				1	1	3	3	3													
Trench Roller						2	2	2						1	1															
Tractor & fending kit	1	1	1	1	1			1		1						1	1	1												
Tractor & trailer	1	2	2	1	2	2	2		1			1	1	1	1	2	2													
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1		1			1	1	1	1	1	1													
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1		1			1	1	1	1	1	1													
Tractor & cable drum trailer													1	1	1															
Tractor & soil tiller, roller, seeder																1	1													
Cement mixer																														
Mobile crane																														
Grader	1	2	2	1	1		1			1																				
Cable laying tracked crane																														
Cable winch													1	1	1															
Pre-cast concrete truck																														
Mobile concrete pump												1	1	1																
Telehandler	1	2	2	1	3	2	3		1			1	1																	
Mobile self-contained welfare unit	1	1	1	1	1	1	1	1	1			1	1	1	1	1	1													
Crawler Crane						1	1	1																						
Mobile generator deliveries (corrected for 2 per delivery)	2	2	2	1	2	2	2		2			2	3	3	3	2	2													
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	2	3		1			1	2	2	2	2	2													
Road surface paver & roller	1	1																												
Pump deliveries (corrected for 4 per delivery)						1	1	1				1	2	2	1															
Total Plant Onsite in Section Per Month	21	31	32	20	38	31	38	0	21	0		16	30	30	31	30	30	0	0											
Total Deliveries / Removals	21	10	3	12	56	0	45	0	42	0		16	14	0	7	39	30	0	0											
Average Deliveries / Removals Per Day	1.0	0.5	0.1	0.5	2.5	0.0	2.0	0.0	1.9	0.0		0.7	0.6	0.0	0.3	1.8	1.4	0.0	0.0											
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	2	6	0	5	0	4	0		2	2	0	1	4	3	0	0											

Section 15

Indicative Average Daily Personnel Requirements

[illegible]

Section 15

Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	11	31	33	48	50	76	50	27	8	2	5	7	7	8	42	43	0	0	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	34	36	53	54	82	54	29	9	3	6	8	8	9	45	47	0	0	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	2	6	0	5	0	4	0	2	2	0	1	4	3	0	0	
Average total two-way HGV Movements Per Day	14	35	37	55	60	82	59	29	13	3	8	10	8	10	49	50	0	0	
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	72	56	82	76	82	18	46	12	42	70	70	70	70	70	0	0	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	80	62	91	84	91	20	51	14	47	77	77	77	77	77	0	0	
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	115	117	117	151	166	150	49	64	17	55	87	85	87	126	127	0	0	

Including miscellaneous allowances:

[illegible]

Including miscellaneous allowances:

Overall	Minimum	Maximum	Average
Section 1	11	116	79
Section 2	6	71	48
Section 3	4	75	39
Section 4	0	81	26
Section 5	10	88	47
Section 6	6	96	53
Section 7	0	71	28
Section 8	0	82	31
Section 9	0	75	38
Section 10	11	94	48
Section 11A	0	78	17
Section 11B	0	123	37
Section 17 (Inland 420V)	0	69	26
Substation Zone	2	177	57
Section 15 (H00V)	0	82	29
Total	2	809	265
Total	809	528	500

Average Total Two-way HGV Movements Per Day

Day	Movements
1	100
2	150
3	100
4	100
5	100
6	100
7	100
8	100
9	100
10	100
11	100
12	100
13	100
14	100
15	100
16	100
17	100
18	750
19	700
20	650
21	600
22	550
23	500
24	450
25	400
26	350
27	300
28	250
29	200
30	150
31	100
32	100
33	100
34	100
35	100
36	100
37	100
38	100
39	100
40	100
41	100
42	100
43	100
44	100

Overall	Minimum	Maximum	Average	
Section 1	53	159	111	Over 18 Month Cable Route Construction Programme
Section 2	54	110	76	Over 18 Month Cable Route Construction Programme
Section 3	14	110	68	Over 18 Month Cable Route Construction Programme
Section 4	0	97	51	Over 18 Month Cable Route Construction Programme
Section 5	22	117	77	Over 18 Month Cable Route Construction Programme
Section 6	95	188	128	Over 18 Month Cable Route Construction Programme
Section 7	0	91	39	Over 18 Month Cable Route Construction Programme
Section 8	0	91	56	Over 18 Month Cable Route Construction Programme
Section 9	0	86	44	Over 18 Month Cable Route Construction Programme
Section 10	77	154	117	Over 18 Month Cable Route Construction Programme
Section 16A	0	91	39	Over 18 Month Cable Route Construction Programme
Section 16B	0	104	56	Over 18 Month Cable Route Construction Programme
Section 17(Including 400kV)	0	91	52	Over 18 Month Cable Route Construction Programme
Substation area	86	231	135	Over 45 Month Substation Construction Programme
Section 15 (800kV)	0	91	59	Over 18 Month Cable Route Construction Programme
Total	86	1591	529	Over 45 Month Substation Construction Programme
Total	643	1591	1165	Over 18 Month Cable Route Construction Programme

Average Total Employee Two Way Movements per Day

Day	Movements
1	100
2	100
3	100
4	100
5	100
6	100
7	100
8	100
9	100
10	100
11	100
12	100
13	100
14	100
15	100
16	100
17	100
18	100
19	100
20	100
21	100
22	100
23	1400
24	100
25	100
26	100
27	100
28	100
29	100
30	100
31	100
32	100
33	100
34	100
35	100
36	100
37	100
38	100
39	100
40	100
41	100
42	100
43	100
44	100
45	100



Vendor Coversheet

Project Name:	Dogger Bank South (DBS)	Package No:	WP7

Document Title:	Landfall and Onshore Cable Route Construction Metrics - Route 3 to Zone 4 HVAC Electrical Scenario
Classification:	Confidential

Vendor Doc. No:	Landfall and Onshore Cable Route Construction Metrics - Route 3 to Zone 4 HVAC Electrical Scenario	Vendor Revision:	04
Date:	29 November 2022	Pages:	88

Employers Doc. No:	004518690-04	Employer Revision:	4
Document Status:	For Review and Approval		

Registered office:
 Dogger Bank South Offshore Wind Farm
 RWE Renewables UK Ltd
 Windmill Hill Business Park
 Whitehill Way, Swindon, SN5 6PB

Client	RWE
Project	Dogger Bank South Offshore Wind Farm
Document Title	Landfall and Onshore Cable Route Construction Metrics - Route 3 to Zone 4 HVAC Electrical Scenario
RWE Ecodoc Reference	004518690-04
Version	4.0
Date	29/11/2022

Prepared By	Peter Macfarlane Principal Engineering Geologist

A handwritten signature in blue ink, appearing to read 'Peter Macfarlane'.

Reviewed By	Aidan Harber Technical Director

A handwritten signature in blue ink, appearing to read 'Aidan Harber'.

Approved By	Aidan Harber Technical Director

A handwritten signature in blue ink, appearing to read 'Aidan Harber'.

Contents	
Appendix A	Material Requirements Per Section (Onsite Deliveries / Offsite Removal)
Appendix B	Substation Foundation and Superstructure Material Requirements
Appendix C	Material Stockpile, Import and Export Requirements
Appendix D	Compound Welfare Requirements
Appendix E	Programme and Average Monthly Vehicle Movements
Appendix F	Overall Vehicle Movements
Appendix G	Indicative Construction Plant Noise Assessment
Appendix H	Images Showing Sections of Onshore Cable Route

Notes:

1. Construction Metrics based on Wardell Armstrong Shapefile - 100m Cable Corridor Rev E - Dated 08.11.2022 and substation footprint located within substation zone 4. Any changes in the routing of the Onshore Cable Corridor may result in updates of these construction metrics.
2. Tabs in red are working and only used to populate other sections of the metrics and not for reference within main construction metrics output
3. No bulking or compaction ratios have been considered within the calculation of waste soils generated and removed from site or import of materials required as conservative bulk density values. Bulking factor of 1.5 has been used to determine volumes of material stockpile onsite.
4. Sections referred to in these construction metrics are presented within Wardell Armstrong Shapefile - Sections of Onshore Cable Route Rev E - Dated 07.11.2022 with screen shots of sections presented in Appendix H.
5. Short HDD of minor obstacles has not been considered separate to trenching within construction metrics as direct trenching considered to be worst case assessment in terms of materials volumes and traffic movements associated with these crossings.
6. Construction metrics are for single project only and based on worst case requirements for HVAC electrical arrangement and worst case for AIS and GIS at the substation zone.
7. Substation foundation assessment is based on assumption that ground conditions are suitable for a shallow foundation solution.
8. Substation foundation assessment is based on worst case HVAC AIS / GIS design information provided by Mott MacDonald.
9. Programme presented is indicative only and final construction programme would not be confirmed until detailed design.
10. Section 1 of onshore cable route includes metrics for Landfall Operations including landfall HDD and construction of Transition Joint Bay.
11. Within construction metrics it has been assumed that there is no reuse of haul road materials within / between sections of the onshore cable route. Some reuse of materials for HDDs has been considered within sections.
12. HDD crossings identified are those presented within Wardell Armstrong Obstacle Crossing Register 004491138-03 with obstacle Name and ID included within construction metrics to allow referencing.

[illegible]

[illegible]

[illegible][illegible]

Revelation Counts for Teachers	Unit	Section 1	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 11A	Section 11B	Section 11C	Section 11D	Section 11E	Subtotal Rows	Section 11F
Total number of teachers instructing the course	n	430	495	310	320	450	200	155	115	200	110	155	190	190	190	a	130
Total number of revelation courses	-	7110	6850	5370	5650	5400	5850	3630	1950	4750	1670	3630	3630	3630	3630	b	2750
Number of 1024 assignments	-	97	87	66	56	68	74	44	33	56	64	54	54	54	54	c	38

[illegible]

[illegible]

Section 1000: Revenue, net of miscellaneous deductions:												
	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 11	Section 12
1.000 Medical equipment (SEC) investments	2,000	2,000	1,000	1,750	2,400	2,000	1,000	1,000	250	20,000	750	1,000
2.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
3.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
4.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
5.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
6.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
7.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
8.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
9.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
10.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
11.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
12.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
13.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
14.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
15.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
16.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
17.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
18.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
19.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
20.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
21.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
22.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
23.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
24.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
25.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
26.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
27.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
28.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
29.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
30.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
31.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
32.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
33.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
34.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
35.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
36.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
37.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
38.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
39.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
40.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
41.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
42.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
43.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
44.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
45.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
46.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
47.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
48.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
49.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
50.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
51.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
52.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
53.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
54.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
55.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
56.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
57.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
58.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
59.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
60.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
61.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
62.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
63.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
64.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
65.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
66.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
67.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
68.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
69.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
70.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
71.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
72.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
73.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
74.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
75.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
76.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
77.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
78.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
79.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
80.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
81.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
82.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
83.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
84.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
85.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
86.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
87.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
88.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
89.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
90.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
91.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
92.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
93.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
94.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
95.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
96.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
97.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
98.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
99.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
100.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
101.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
102.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
103.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
104.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
105.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
106.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
107.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
108.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
109.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
110.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
111.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
112.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
113.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
114.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
115.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
116.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
117.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
118.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
119.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
120.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
121.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
122.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
123.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
124.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
125.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
126.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
127.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
128.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
129.000 General medical equipment (SEC) investments	0	0	0	0	0	0	0	0	0	0	0	0
130.000 General medical equipment (SEC) investments	0	0	0	0	0	0						

FOR DBS, HVAC, AIS & GIS Worst Case Hybrid										
Building	Height (m)	Length (m)	Width (m)	Area (m²)	Number of					
Control Building	11.00	40.00	20.00	800.00	1.00					
Station/SVC Building	10.00	24.00	15.00	360.00	4.00					
275kV GIS Building	15.00	63.00	24.00	1512.00	2.00					
400kV GIS Building	15.00	40.00	24.00	960.00	2.00					
Storage Building	4.00	15.00	10.00	150.00	1.00					
Other Structures	Height (m)	Length (m)	Width (m)	Area (m²)	Number of	Loading Weight (t)				
External Fire Barrier 1 (Reactors)	10.00	20.00	0.50	10.00	8.00	N/A				
External Fire Barrier 2 (transformers)	10.00	29.50	0.50	14.75	3.00	N/A				
Main Transformer	11.00	22.00	7.40	162.80	4.00	370.00				
Main Transformer Noise Enclosure	5.70	13.40	7.50	100.55	4.00	N/A				
Auxiliary Transformer	4.00	6.00	6.00	36.00	4.00	5.00				
STATCOM equipment	2.60	29.00	29.00	849.00	2.00	100.00				
Emergency Diesel Generator	2.60	6.10	2.50	15.25	1.00	6.60				
Station Transformer	9.00	13.50	4.50	60.75	4.00	250.00				
Noise Enclosure for Station Transformer	4.50	8.00	7.50	60.00	4.00	N/A				
275kV Shunt Reactor	9.00	13.50	4.50	60.75	12.00	120.00				
Noise Enclosure for 275kV Shunt Reactor	4.50	8.00	6.00	48.00	12.00	N/A				
400kV Shunt Reactor	10.50	14.50	7.50	108.75	4.00	200.00				
Noise Enclosure for 400kV Shunt Reactor	5.70	9.20	6.00	55.20	4.00	N/A				
Water Tank	6.00	6.00	6.00	36.00	1.00	5.00				
270kV GIS	5.00	12.00	10.00	120.00	20.00	350.00				
400kV GIS	5.00	12.00	10.00	120.00	12.00	210.00				
400kV Harmonic Filters	TBC	40.00	30.00	1200.00	8.00	TBC				
275kV Harmonic Filters	TBC	40.00	30.00	1200.00	8.00	TBC				
Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
Control Building (total for 1No.)	pad foundations	64x1m deep RC concrete on a 2048mm grid plus ridge column at both gables		350		2,400	840	Concrete	1.00	350.00
	concrete slab within building	200mm thick concrete slab on 150mm thick type 1 sub base	480	160	800	2,400	384	Concrete	1.00	160.00
	extra concrete plinths for equipment in building	TBC	278	144	800	1,860	266	Stone	1.00	266.40
	perimeter ground beam	450mm deep x 600mm wide, 120m long		32		2,400	78	Concrete	1.00	32.40
		80 kg/m² includes secondary steel framing and cladding rails and door framing, and a 10% allowance for connections. Based on max 2.0m span and 8m bay centres - 11m clear height.								
	steel frame		80		800		64	Steel	1.00	64.00
	cladding	composite cladding panels 150mm thick	10		1,320		13	Cladding	1.00	13.20
Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
Station/SVC Building (total for 1No.)	RC Pad foundations	4.5x4.5m deep RC concrete on a 1568mm grid plus ridge column at both gables		243		2,400	583	Concrete	4.00	972.00
	Concrete ground bearing slab within building	200mm thick concrete slab on 150mm thick type 1 sub base	480	72	360	2,400	173	Concrete	4.00	288.00
	extra concrete plinths for equipment in building	TBC	278	60	360	1,860	100	Stone	4.00	479.52
	Perimeter ground beam	450mm deep x 600mm wide, 78m long		21		2,400	51	Concrete	4.00	84.24
		80 kg/m² includes secondary steel framing and cladding rails and door framing, and a 10% allowance for connections. Based on max 1.5m span and 8m bay centres - 10m clear height.								
	Steel frame		80		360		29	Steel	4.00	115.20
	Cladding	composite cladding panels 150mm thick	10		780		8	Cladding	4.00	31.20
Building	Item	Description	Unit Weight (kg/m³)	Total Volume (m³)	Total Area (m²)	Density (kg/m³)	Total Weight For Single Building / Structure (t)	Material	Number of unit	Total Weight Required For All Structures (t) (Total Volume for Concrete)
275kV GIS Building	RC Pad foundations	64x1m deep RC concrete on a 2048mm grid plus ridge column at both gables		800		2,400	1,020	Concrete	2.00	1600.00
	Concrete ground bearing slab within building	200mm thick concrete slab on 150mm thick type 1 sub base	480	302	1,512	2,400	726	Concrete	2.00	604.80
	extra concrete plinths for equipment in building	TBC	278	272	1,512	1,860	503	Stone	2.00	1006.59
	Perimeter ground beam	450mm deep x 600mm wide, 262m long		47		2,400	113	Concrete	2.00	93.96
		80 kg/m² includes secondary steel framing and cladding rails and door framing, and a 10% allowance for connections. Based on max 2.0m span and 8m bay centres - 15m clear height.								
	Steel frame		80		1,512		121	Steel	2.00	241.92
	Cladding	composite cladding panels 150mm thick	10		2,610		26	Cladding	2.00	52.20

Ground bearing slab
20% increase for sub base due to variable ground

Ground bearing slab
20% increase for sub base

Ground bearing slab
20% increase for sub base

Ground bearing slab
20% increase for sub base

Ground bearing slab
20% increase for sub base

Assumed 0.3m thick concrete barriers / noise enclosures.
TBC

Assumed 0.3m thick concrete barriers / noise enclosures.
TBC

Assumed 0.3m thick concrete barriers / noise enclosures.
TBC

Assumed 0.3m thick concrete barriers / noise enclosures.
TBC

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

20% increase for sub base

Parameter (Materials / Electrical Equipment)	Units	Value	Equipment Weight (tonnes)	Total Equipment Weight (tonnes)	Total Vehicle Movements	
Concrete	m³	15,014	-	-	2503	Total concrete requirement for foundations / noise enclosures etc.
Steel Reinforcement (assuming 0.005 V/m² Concrete)	Tonnes	976	-	-	49	
Type 1 Stone	Tonnes	9,600	-	-	480	Total Type 1 Requirement for foundations.
Volume of Soil to be removed from site (Foundation excavation)	m³	17,881.6740	-	-	-	
Mass of soil to be removed from site (Foundation excavation)	Tonnes	35763.3	-	-	1789	Soil excavated for foundation and sub-base placement. Assumed building slab above ground level.
Steel Frame	Tonnes	587	-	-	47	Total steel work requirement for proposed substation buildings.
Cladding	Tonnes	137	-	-	11	Total external cladding requirement for proposed substation buildings.
Main Transformer	No.	4	400	1600	4	Abnormal Load Delivery Of Single Transformer
Auxiliary Transformer	No	4	5	20	4	Based on worst case of one delivery per auxiliary transformer
Stat Conn Equipment	No	2	100	200	16	Assumed vehicle movements (TBC)
Emergency Diesel Generator	No	1	6.6	6.6	1	Based on worst case of one delivery per emergency diesel generator
Station Transformer	No	4	250	1000	80	Assumed vehicle movements (TBC)
275kV Shunt Reactor	No	12	80	960	72	Assumed vehicle movements (TBC)
400kV Shunt Reactor	No	4	160	640	52	Assumed vehicle movements (TBC)
Water Tank	No	1	5	5	1	Based on worst case of one delivery per water tank.
275kV GIS	No	20	350	7000	560	Assumed vehicle movements (TBC)
400kV GIS	No	12	210	2520	202	Assumed vehicle movements (TBC)
400kV Harmonic Filters	No	4	Unknown	Unknown	40	Assumed vehicle movements (TBC)
275kV Harmonic Filters	No	8	Unknown	Unknown	80	Assumed vehicle movements (TBC)
Miscellaneous Allowance for Other M&E Equipment	No	1	-	-	150	Assumed vehicle movements (TBC)
TOTAL Vehicle Movements					6146	

Notes / Assumptions:

- Earthworks, hardstanding and road have not been included in this part of the assessment. Considered in materials vehicle movements.
- Vehicle movements for removal of arisings is based on excavation of volume of foundations/ slab/ sub-base.
- General site traffic and construction equipment considered in substation programme and daily movements
- Vehicle movements for delivery of electrical equipment are shown in substation programme and daily movement
- Foundations have been based on a ground bearing slab - S1 to confirm GBP. If suspended slab to be used foundation size and number would increase
- Full design of foundations / bases (based on loadings / S1) to be undertaken to confirm sizes.
- Transformer housing has not been included for (assume part of equipment)
- No internal wall or additional floors have been included in the buildings

Parameter	Units	Value	Source/Comments
Volume of topsoil excavated per transition bay location (includes transition bay link box)	m ³	241	WA Calculation based on drawing ED13554-GE-1013 & 1014 (Ecodoc Reference 004437669-01 & 004437670-01). Extents of excavation multiplied by Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab) multiplied by bulking factor of 1.5.
Volume of sub-soil Excavated per transition bay location (Includes transition bay link box)	m ³	538	WA Calculation based on drawing ED13554-GE-1013 & 1014 (Ecodoc Reference 004437669-01 & 004437670-01) multiplied by bulking factor of 1.5. Total volume excavated is 776m ³ . Volume of sub-soil is total volume - topsoil volume
Volume of topsoil excavated per jointing bay location	m ³	150	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01) multiplied by bulking factor of 1.5. Extents of excavation multiplied by Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab)
Volume of sub-soil Excavated per jointing bay location	m ³	252	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01) multiplied by bulking factor of 1.5. Total volume excavated is 391m ³ . Volume of sub-soil is total volume - topsoil volume
Volume of topsoil excavated per jointing bay link box location	m ³	31	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01). Extents of excavation multiplied by Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab) multiplied by bulking factor of 1.5.
Volume of sub-soil Excavated per jointing bay link box location	m ³	37	WA Calculation based on drawing ED13554-GE-1023 (Ecodoc Reference 004437675-01) multiplied by bulking factor of 1.5. Total volume excavated is 67m ³ . Volume of sub-soil is total volume - topsoil volume
Volume of topsoil excavated per m of haul road	m ³	6.0	Haul road easement width (Drawing ED13554-GE-1021, Ecodoc Reference 004437673-01) x Topsoil Depth (ID 1.30 of Material Vehicle Movements Tab) multiplied by bulking factor of 1.5.
Volume of sub-soil excavated per m of haul road for drainage ditches (accounts for drainage ditches on both sides of road)	m ³	1.13	Maximum volume based on drawing ED13554-GE-1023 (Ecodoc Reference 004437673-01) multiplied by bulking factor of 1.5.
Volume of topsoil excavated per m of trenching (excluding haul road)	m ³	12.6	[Cable route are of topsoil disturbed 31.05m] - haul road (10m)] *depth of topsoil (0.4m) multiplied by bulking factor of 1.5. RWE Drawing REN/CIV/007/AP2 (Ecodoc Reference 004390501-01)
Volume of sub-soil excavated per m of trenching	m ³	10.0	Maximum Calculated for HVAC Arrangement from RWE Drawing REN/CIV/007/AP2 (Ecodoc Reference 004390501-01) multiplied by bulking factor of 1.5.
Volume of topsoil excavated per large TCC	m ³	6000	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per satellite TCC	m ³	3375	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per landfall compound	m ³	10350	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per Long / Moderate HDD entry pit compound	m ³	1707.84	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per Long / Moderate HDD exit pit compound	m ³	854	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per minor HDD entry pit compound	m ³	1063.2	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per minor HDD exit pit compound	m ³	637.92	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per access	m ³	64	Area of access x depth of topsoil x bulking factor of 1.5
Volume of topsoil excavated per m Auxiliary Supply Trench	m ³	0.27	Width of trench x depth of topsoil x bulking factor of 1.5
Volume of subsoil excavated per m of Auxiliary Supply Trench	m ³	0.98	Width of trench x (depth of trench - depth of topsoil) x bulking factor of 1.5
Area of topsoil excavated per substation TCC	m ³	27000	Area of compound x depth of topsoil x bulking factor of 1.5
Volume of Topsoil excavated per m of Substation Drainage Trench	m ³	0.84	Width of trench x depth of topsoil x bulking factor of 1.5
Volume of sub-soil excavated per m of Substation Drainage Trench	m ³	3.36	Width of trench x (depth of trench - depth of topsoil) x bulking factor of 1.5

Total Stockpiled Volumes	Number / Length	Volume (m3)
Transition Bay Locations (topsoil volume)	4	965.7
Transition Bay Locations (sub-soil volume)	4	2152.2
Jointing Bay Locations (topsoil volume)	224	40516.9
Jointing Bay Locations (sub-soil volume)	224	64725.7
Haul road Topsoil Strip	38910	233460.0
Drainage Ditch Sub-soil Excavation	38910	43773.8
Cable route Topsoil Strip	32300	407949
Trench Sub-Soil Excavation	129200	1298266.2
Topsoil excavated from Large TCC	2	12000.0
Topsoil excavated from Satellite TCC	14	47250.0
Topsoil excavated from landfall compound	1	10350
Topsoil excavated from Long / Moderate HDD entry pit compound	8	13662.72
Topsoil excavated from Long / Moderate HDD exit pit compound	8	6831.36
Topsoil excavated from Minor HDD entry pit compound	14	14884.8
Topsoil excavated from Minor HDD exit pit compound	15	9568.8
Topsoil excavated from accesses	16	1026.24
Topsoil excavated from Auxiliary Supply Trench	685	184.95
Subsoil excavated from Auxiliary Supply Trench	685	670.44375
Topsoil excavated from substation TCC	1	27000
Topsoil excavated from Substation Drainage Trench	795	667.4304
Subsoil excavated from Substation Drainage Trench	795	2669.7216

Materials Stockpile Totals	Units	Value
Topsoil	m ³	826317.9
Sub-soil	m ³	1412258.0

Imported Materials / Permanent Equipment	Units	Maximum Value	Value Assuming Shared Stone etc between HDDs in same section of cable corridor
Mot Type 1	Tonnes	362,215	337,392
Asphalt	Tonnes	33,750	33,750
HB2 External Radii Kerbs	No	464	464
HB2 Straight Kerbs	No	1,643	1,643
Concrete	m³	36,556	36,556
Crusher Run Stone	Tonnes	0	0
20/40mm Drainage Stone	Tonnes	42,023	42,023
Length of perforated pipe	m	77,820	77,820
Geogrid	m²	490,512	452,175
Geotextile	m²	490,512	452,175
Stock Proof Fencing (including required posts)	m	79,101	79,101
Heras fencing panels	No	4,888	3,785
Length of Onshore Export Cable	m	439,800	439,800
Length of Onshore Fibre Cable	m	293,885	293,885
Length of Onshore Earth Cable	m	146,600	146,600
Trench Tiles / cable protective covers	No	561,734	561,734
Cement Bound Sand	Tonnes	317,970.0	317,970
Selected Sand	Tonnes	4,257.8	4,258
Length of export cable duct in trench	m	387,600	387,600
Length of 90mm duct / pipe in trench	m	388,285	388,285
Length of ducting for install in onshore HDD bores for export cables	m	54,600	54,600
Length of ducting for install in onshore HDD bores for FO and DTS	m	54,600	54,600
Bentonite	kg	2,854,800	2,854,800
Water	m³	71,248.0	71,248
Steel Reinforcement	Tonnes	2,366.6	2,367
Link box lids	No	456.0	456
Cable Joint Kits	No	684.0	684
Transition bay pre-cast concrete slabs	No	152	152
Length of 120mm duct	m	685	685
Length of 11kV Auxiliary Cable	m	685	685
Number of CG3 cable marker blocks	-	1,466	1,466
Mass of Cement	Tonnes	1.51	1.51
Mass of Lime	Tonnes	0.25	0.25
Mass of Sand	Tonnes	3.84	3.84
Length of surface water drainage pipework	m	795	795
Drainage Manholes	No	4	4
Drainage Headwalls	No	3	3
Import of subsoil for substation earthworks	Tonnes	64,542	64,542
Steel Work For Substation Structures	Tonnes	587	587
Cladding for Substation Structures	Tonnes	137	137
Main Transformer	No	4	4
Auxiliary Transformer	No	4	4
Stat Com Equipment	No	2	2
Emergency Diesel Generator	No	1	1
Statcom Transformer	No	4	4
275kV Shunt Reactor	No	12	12
400kV Shunt Reactor	No	4	4
Water Tank	No	1	1
270kV GIS	No	20	20
400kV GIS	No	12	12

Exported Materials	Units	Value	Value Assuming Shared Stone etc between HDDs in same section of cable corridor
Mot Type 1	Tonnes	311,449	296,225
Asphalt	Tonnes	18,240	18,240
HB2 External Radii Kerbs	No	464	464
HB2 Straight Kerbs	No	0	0
Concrete	m³	28	28
Crusher Run Stone	Tonnes	0	0
20/40mm Drainage Stone	Tonnes	42,023	42,023
Length of perforated pipe	m	77,820	77,820
Geogrid	m²	490,512	452,175
Geotextile	m²	490,512	452,175
Heras fencing panels	No	4,025	2,922
Native Soil	Tonnes	582,942	582,942
Topsoil	Tonnes	65,828	65,828
Drill Fluid Removal	m³	34,160	34,160
Stock Proof Fencing (including required posts)	m	79,101	79,101
Mass of Cement	Tonnes	0.29	0.29
Mass of Lime	Tonnes	0.05	0.05
Mass of Sand	Tonnes	0.73	0.73

General Data	Value	Source/Comments
Number of Welfare / Container Units Per Delivery	1	Worst Case
Number of plant per delivery	1	Worst Case
Frequency of Skip Emptying (weeks)	2	Assumed

Main TCC Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	4	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Canteen Unit	4	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Tool Storage Unit	6	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Workshop Unit	1	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Mobile Toilet Unit	2	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Washing / Changing Unit	1	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
First Aid Unit		
Drying Room Unit	1	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Freshwater Storage Container (2 per delivery)	2	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Foul Water Storage Container (2 per delivery)	2	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Bunded Fuel Tank (1 per delivery)	1	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Generator (2 per delivery)	2	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
General Waste Skip (1 per delivery)	6	ED13554-GE-1019 (Ecodoc Ref - 004437671-01)
Wheel Wash (assume 3 deliveries to mobilise)		
Weigh bridge (assume 3 deliveries to mobilise)		
Telehandler	2	Assumed Required
Road Sweeper	1	Assumed Required
Number of HGV Movements	32	

Satellite TCC Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Canteen Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Tool Storage Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Workshop Unit		
Mobile Toilet Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Washing / Changing Unit		
First Aid Unit		
Drying Room Unit	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Freshwater Storage Container (2 per delivery)	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Foul Water Storage Container (2 per delivery)	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Bunded Fuel Tank (1 per delivery)	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Generator (2 per delivery)	1	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
General Waste Skip (1 per delivery)	3	ED13554-GE-1020 (Ecodoc Ref - 004437672-01)
Wheel Wash (assume 3 deliveries to mobilise)		
Weigh bridge (assume 3 deliveries to mobilise)		
Telehandler	1	Assumed Required
Road Sweeper	1	Assumed Required
Number of HGV Movements	13	

Landfill HDD Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	1	Assumed - Compound to be designed
Canteen Unit / Lunch Room	1	Assumed - Compound to be designed
Welfare Unit	1	Assumed - Compound to be designed
Tool Storage Unit	2	Assumed - Compound to be designed
Workshop Unit	1	Assumed - Compound to be designed
Generator (2 per delivery)	1	Assumed - Compound to be designed
Freshwater Storage Container (2 per delivery)	2	Assumed - Compound to be designed
Foul Water Storage Container (2 per delivery)	1	Assumed - Compound to be designed
General Waste Skip (1 per delivery)	1	Assumed - Compound to be designed
Bunded Fuel Tank	1	Assumed - Compound to be designed
Bentonite Storage Container	2	Assumed - Compound to be designed
Mixing Tank	2	Assumed - Compound to be designed
Cuttings Container	2	Assumed - Compound to be designed
Drill Pipe Rack	3	Assumed - Compound to be designed
Mud Pump	2	Assumed - Compound to be designed
Power Pack	1	Assumed - Compound to be designed
Driver's Cabin	1	Assumed - Compound to be designed
HDD Rig	1	Assumed - Compound to be designed
Telehandler / Excavator	1	Assumed - Compound to be designed
Number of HGV Movements	25	

Long / Moderate Onshore HDD Entry Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Canteen Unit / Lunch Room	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Welfare Unit	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Tool Storage / General Storage	3	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Workshop Unit	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Generator (2 per delivery)	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Freshwater Storage Container (2 per delivery)	1	Assumed Required
Foul Water Storage Container (2 per delivery)	1	Assumed Required
General Waste Skip (1 per delivery)	1	Assumed Required
Bunded Fuel Tank	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Bentonite Storage	2	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Mixing Tank	2	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Cuttings Container	2	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Drill Pipe Rack	3	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Mud Pump	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Power Pack	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Driver's Cabin	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
HDD Rig	1	ED13554-GE-1027 (Ecodoc Ref - 004491142-01)
Telehandler / Excavator	1	Assumed Required
Number of HGV Movements	25	

Long / Moderate Onshore HDD Exit Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office / Welfare Unit	1	Assumed Required
General Waste Skip (1 per delivery)	1	Assumed Required
Generator (2 per delivery)	1	Assumed Required
Tool Storage Unit	1	Assumed Required
Drill Pipe Rack	2	Assumed Required
Number of HGV Movements	5	

Minor Onshore HDD Entry Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office / Welfare Unit	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Canteen Unit / Lunch Room	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Welfare Unit		
Tool Storage / General Storage	2	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Workshop Unit	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Generator (2 per delivery)	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Freshwater Storage Container (2 per delivery)	1	Assumed Required
Foul Water Storage Container (2 per delivery)	1	Assumed Required
General Waste Skip (1 per delivery)	1	Assumed Required
Bunded Fuel Tank	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Bentonite Storage Container	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Fluid and Recycling Tanks	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Cullins Container	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Spare Rods	3	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Mud Pump		
Power Pack		
Driller's Cabin		
Mini HDD Rig	1	ED13554-GE-1026 (Ecodoc Ref - 004491141-01)
Telehandler / Excavator	1	Assumed Required
Number of HGV Movements	17	

Minor Onshore HDD Exit Pit Compound Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office / Welfare Unit		
General Waste Skip (1 per delivery)		
Generator (2 per delivery)		
Tool Storage Unit	1	Assumed Required
Drill Pipe Rack	1	Assumed Required
Number of HGV Movements	2	

Substation TCC Requirements (Welfare and Operation Plant)	Value	Source/Comments
Site Office Unit	10	Assumed - Compound to be designed
Canteen Unit	8	Assumed - Compound to be designed
Tool Storage Unit	12	Assumed - Compound to be designed
Workshop Unit	2	Assumed - Compound to be designed
Mobile Toilet Unit	6	Assumed - Compound to be designed
Washing / Changing Unit	3	Assumed - Compound to be designed
First Aid Unit	1	Assumed - Compound to be designed
Dining Room Unit	3	Assumed - Compound to be designed
Freshwater Storage Container (2 per delivery)	6	Assumed - Compound to be designed
Foul Water Storage Container (2 per delivery)	6	Assumed - Compound to be designed
Bunded Fuel Tank (1 per delivery)	2	Assumed - Compound to be designed
Generator (2 per delivery)	6	Assumed - Compound to be designed
General Waste Skip (1 per delivery)	8	Assumed - Compound to be designed
Wheel Wash (assume 3 deliveries to mobilise)	1	Assumed - Compound to be designed
Weigh Bridge (assume 3 deliveries to mobilise)	1	Assumed - Compound to be designed
Telehandler	4	Assumed - Compound to be designed
Road Sweeper	1	Assumed - Compound to be designed
Number of HGV Movements	75	

Section	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 14 (Including 400kV)	Substation Zone	Section 15 (400kV)
Compound Welfare and Operation Plant Requirements	457	143	160	236	259	456	156	236	148	613	123	220	222	910	267
Grand total deliveries	457	143	160	236	259	456	156	236	148	613	123	220	222	910	267
Grand total (two way movements)	914	286	320	472	518	912	312	472	296	1,226	246	440	444	1,820	534

Compound Welfare and Operation Plant Requirements	Units	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 16A	Section 16B	Section 14 (Including 400kV)	Substation Zone	Section 15 (400kV)
Number of Main TCC	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Minor TCC	-	2	1	1	1	1	0	1	1	1	1	1	1	1	0	1
Number of Substation TCC	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Duration of TCC Site	Weeks	78	78	78	65	78	78	65	65	81	78	56	61	65	190	70
Number of Skip Movements	-	234	117	117	99	117	234	99	99	93	351	84	93	99	760	105
Number of Landfill Compounds	-	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Duration of Landfill Compound Usage	Weeks	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Skip Movements	-	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Long / Moderate HDD Drilling Compounds	-	0	0	0	2	1	1	0	2	0	1	0	1	0	0	0
Combined Duration of Onshore HDD Drilling Compound Usage	Weeks	0	0	0	22	13	9	0	22	0	0	0	13	0	0	0
Number of Skip Movements	-	0	0	0	11	7	5	0	11	0	0	0	7	0	0	0
Number of Long / Moderate HDD Exit Pit Compounds	-	0	0	1	0	1	1	2	0	2	0	0	0	1	0	0
Combined Duration of Onshore HD Exit Compound Usage	Weeks	0	0	13	0	9	13	22	0	18	0	0	0	0	0	0
Number of Skip Movements	-	0	0	7	0	5	7	11	0	9	0	0	0	7	0	0
Number of Minor HDD Drilling Compounds	-	2	0	0	0	1	2	0	0	0	3	0	1	2	0	3
Combined Duration of Onshore HDD Drilling Compound Usage	Weeks	9	0	0	0	5	9	0	0	0	13	0	5	9	0	13
Number of Skip Movements	-	5	0	0	0	3	5	0	0	0	7	0	3	5	0	7
Number of Minor HDD Exit Pit Compounds	-	2	0	0	0	1	2	0	0	0	2	2	1	1	0	4
Combined Duration of Onshore HD Exit Compound Usage	Weeks	9	0	0	0	5	9	0	0	9	9	5	5	5	0	22
Number of Skip Movements	-	5	0	0	0	3	5	0	0	0	5	5	3	3	0	11
Number of HGV movements to Establish Compounds	-	89	13	18	63	82	100	23	63	23	125	17	57	54	75	72
Number of HGV movements to Demobilise Compounds	-	89	13	18	63	82	100	23	63	23	125	17	57	54	75	72
Total Number of Skip Movements	-	279	117	124	110	135	256	110	110	102	363	89	106	114	760	123
Total Number of Compound HGV Movements	-	457	143	160	236	259	456	156	236	148	613	123	220	222	910	267

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCCs and site accesses	44	370	8.4	8.4																										
Mobilisation of Welfare and Operation Plant to TCC	22	26	1.2																											
Site preparation including fencing, temporary drainage, haul road construction and tonsoil strip	110	1,358		12.3	12.3	12.3	12.3	12.3																						
Cable Construction Works																														
Trench Excavation and duct installation	198	3,145						15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9															
Trench Backfill with CBS and protective covers	198	2,196						11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1															
Jointing Bay Excavation	154	97										0.6	0.6	0.6	0.6	0.6	0.6	0.6												
Jointing Bay Base Construction	154	97										0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6											
Pulling and connection of cables	154	224											1.5	1.5	1.5	1.5	1.5	1.5	1.5											
Backfill over Jointing Bays	154	54										0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4											
HDD At Landfall																														
Establish Landfall HDD construction compound / Topsoil Strip In Landfall Laydown Area	22	569			25.9																									
Mobilisation of HDD Kit and Welfare to Landfall Compound	22	25		1.1																										
HDD Drilling works & Ducting (assume working 24/7 7 days a week but 22 delivery days a month)	180	1,791				10.0	10.0	10.0	10.0	10.0	10.0																			
Demobilisation of HDD kit and welfare	22	25										1.1																		
Transition Bays at Landfall																														
Excavation of transition bays	44	67												1.5	1.5															
Construction of transition bay and link box base and walls	66	56												0.8	0.8	0.8														
Connection of Cables in Transition Bays	66	8														0.1	0.1	0.1												
Transition bay backfill and roof and backfill over transition bay	66	65															1.0	1.0	1.0											
Landfall Compound Removal and Reinstatement	66	569																							8.6	8.6	8.6			
Minor HDD crossing of B1242 (OB ID S1-RX-1 OR S1-RX-2) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	95								4.3																				
Mobilisation of HDD Kit and Welfare to compounds	22	19								0.9																				
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	281									12.8																			
Demobilisation of HDD Kit and welfare to next minor HDD	22	0										0.0																		
Remove of onshore HDD Entry and Exit Compounds - materials reused at next minor HDD	22	0										0.0																		
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S1-UUX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds - materials from previous minor HDD	22	0										0.0																		
Mobilisation of HDD Kit and Welfare to compounds - equipment from previous minor HDD	22	0										0.0																		
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	281											12.8																	
Demobilisation of HDD Kit and welfare	22	19													0.9															
Remove of onshore HDD Entry and Exit Compounds	22	95																			4.3									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	1,358																								20.6	20.6	20.6		
Demobilisation of Welfare from TCC	22	26																										1.2		
TCC and access road Removal	44	370																									8.4	8.4		
Average Section Skip HGV Movements Per Day	396	279	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
Total HGVs per day			10.3	21.5	40.1	23.0	50.0	50.0	42.8	51.6	41.8	45.9	34.0	31.7	31.9	4.9	7.8	29.9	38.3	39.5										
Total two-way HGV movements per day			20.6	42.9	80.1	46.0	99.9	99.9	85.6	103.3	83.7	91.7	68.0	63.4	63.7	9.8	15.6	59.8	76.6	79.0										

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	2	1	1	1	1		3	2	2	2	2	3	3	3	3	3	
30T Excavator	2	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
20T Dumper	3	3	6	3	6	6	4	6	6	6	6	6	6	6	6	4	4	4	
Smooth Drum vibrio road roller	1	2	2	1	1	1	1		1	1	1		1	1	1	2	2	2	
21T excavator	1	2	2	1	3	3	3	3	3	3	3	3	3	3	3	2	2	2	
5T Forward Tipping Dumper	1	2	2	1	3	3	3	3	2	3	3	3	2	2	2	2	2	2	
Loading shovel	1	2	2	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Trench Roller					2	2	2	2	2	2	2	2	2	2	2				
Tractor & fencing kit	1	1	1	1	1	1	1		1				1	1	1	1	1	1	
Tractor & trailer	1	2	2	1	3	3	3	3	3	3	3	3	2	2	2	2	2	2	
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & cable drum trailer									1	1	1	1	1	1	1				
Tractor & soil tiller, roller, seeder																1	1	1	
Cement mixer													1	1	1				
Mobile crane												1	1	1	1				
Grader	1	2	2	1	1	1	1		1										
Cable laying tracked crane												1	1	1					
Cable winch									1	1	1	1	1	1	1	1			
Pre-cast concrete truck													1	1	1				
Mobile concrete pump								1	1	2	2	2	1	1					
Telehandler	1	2	2	1	3	3	3	3	3	3	3	3	3	3	1				
Mobile self-contained welfare unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Crawler Crane					1	1	1	1	1	1	1	1	1	1	1				
Mobile generator deliveries (corrected for 2 per delivery)	2	2	2	1	3	3	3	3	6	8	8	8	7	7	5	2	2	2	
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	3	3	3	5	5	5	5	3	3	3	2	2	2	
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)					1	1	2	3	3	4	4	4	4	3	3	2			
Total Plant Onsite In Section Per Month	21	31	33	20	41	41	40	40	52	54	54	55	53	53	46	30	30	30	
Total Deliveries / Removals	21	10	4	13	21	0	3	8	14	8	0	3	12	0	7	20	0	30	
Average Deliveries / Removals Per Day	1.0	0.5	0.2	0.6	1.0	0.0	0.1	0.4	0.6	0.4	0.0	0.1	0.5	0.0	0.3	0.9	0.0	1.4	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	2	2	0	1	1	2	1	0	1	2	0	1	2	0	3	

Section 1 (Including Landfall & Transition Bay Works)
Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCC and site accesses	44	132	3	3																										
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	110	330		3	3	3	3	3																						
Cable Construction Works																														
Trench Excavation and duct installation	198	396					2	2	2	2	2	2	2	2	2															
Trench Backfill with CBS and protective covers	198	396					2	2	2	2	2	2	2	2	2															
Jointing Bay Excavation	154	308									2	2	2	2	2	2	2													
Jointing Bay Base Construction	154	308									2	2	2	2	2	2	2													
Pulling and connection of cables	154	462										3	3	3	3	3	3		3											
Backfill over Jointing Bays	154	308										2	2	2	2	2	2	2												
HDD At Landfall																														
Establish Landfall HDD construction compound	22	66			3																									
HDD Drilling works & Ducting (assume working 24/7 7 days a week) Includes Admin of HDD Compound	180	2,880				16	16	16	16	16	16																			
Transition Bays at Landfall																														
Excavation of transition bays	44	88											2	2																
Construction of transition bay base and walls	66	198											3	3	3															
Connection of Cables in Transition Bays	66	198													3															
Transition bay Roof and backfill over transition bay	66	198														3	3	3												
Landfall Compound Removal and Reinstatement	66	198																												
Minor HDD crossing of B1242 (OB ID S1-RX-1 OR S1-RX-2) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compound	22	44							2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110								5																				
Remove of onshore HDD Entry and Exit Compounds - materials reused at next minor HDD	22	22									1																			
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S1-UUX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds - materials from previous minor HDD	22	22									1																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110										5																		
Remove of onshore HDD Entry and Exit Compound	22	44																	2											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	198																												
TCC and access road Removal	44	132																												
Plant Operators																														
Overall Plant Operators	468	14,170	17	26	28	16	33	33	31	30	37	36	36	37	38	38	34	25	25	25										
Section 1 Engineering Personnel																														
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
Average Total Employees per day			24	36	38	39	60	60	57	63	72	63	58	60	61	57	48	35	38	38										
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	76	78	120	120	114	126	144	126	116	120	122	114	96	70	76	76										

Section 1 (Including Landfall & Transition Bay Works)
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	21	43	80	46	100	100	86	103	84	92	68	63	64	10	16	60	77	79
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	23	48	90	52	112	112	96	115	94	103	76	71	71	11	18	67	86	88
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	2	2	0	1	1	2	1	0	1	2	0	1	2	0	3
Average total two-way HGV Movements Per Day	25	49	91	54	114	112	97	116	96	104	76	72	73	11	19	69	86	91
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	76	78	120	120	114	126	144	126	116	120	122	114	96	70	76	76
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	84	86	132	132	126	139	159	139	128	132	135	126	106	77	84	84
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	78	129	175	140	246	244	223	255	255	243	204	204	208	137	125	146	170	175

Section 2

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																													
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
Establish TCCs and site accesses	44	190	4.3	4.3																												
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																													
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	88	1,194		13.6	13.6	13.6	13.6																									
Cable Construction Works																																
Trench Excavation and duct installation	176	2,963						16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8																	
Trench Backfill with CBS and protective covers	176	2,069						11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8																	
Jointing Bay Excavation	132	84										0.6	0.6	0.6	0.6	0.6	0.6															
Jointing Bay Base Construction	132	84										0.6	0.6	0.6	0.6	0.6	0.6	0.6														
Pulling and connection of cables	132	192											1.5	1.5	1.5	1.5	1.5	1.5	1.5													
Backfill over Jointing Bays	132	47											0.4	0.4	0.4	0.4	0.4	0.4														
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	1,194																									18.1	18.1		18.1		
Demobilisation of Welfare from TCC	22	13																											0.6			
TCC and access road Removal	44	190																										4.3	4.3			
Average Section Skip HGV Movements Per Day	396	117	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
Total HGVs per day			5.2	18.2	13.9	13.9	13.9	28.9	28.9	28.9	30.2	32.0	32.0	32.0	32.0	3.4	2.1	18.4	22.7	23.3												
Total two-way HGV movements per day			10.4	36.4	27.7	27.7	27.7	57.8	57.8	57.8	60.3	63.9	63.9	63.9	63.9	6.8	4.2	36.8	45.4	46.6												

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1	1	1					2	2	2	2	2	2	2	3	3	
30T Excavator	2	3	2	2	2	3	3	3	3	3	3	3	3	3	2	2	3	3	
20T Dumper	3	3	3	3	3	4	4	4	6	6	6	6	6	4	2	2	4	4	
Smooth Drum vibrio road roller	1	2	1	1	1											1	2	2	
23T excavator	1	2	1	1	1	3	3	3	3	3	3	3	3	2	1	1	2	2	
5T Forward Tipping Dumper	1	2	1	1	1	3	3	3	3	2	2	2	2	2	1	1	2	2	
Loading shovel	1	2	1	1	1	3	3	3	3	3	3	3	3	1	1	2	3	3	
Trench Roller						2	2	2	2	2	2	2	2	1	1				
Tractor & fencing kit	1	1	1	1	1											1	1	1	
Tractor & trailer	1	2	1	1	1	2	2	2	3	3	3	3	3	1		1	2	2	
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tractor & cable drum trailer										1	1	1	1	1	1				
Tractor & soil tiller, roller, seeder																1	1	1	
Cement mixer																			
Mobile crane																			
Grader	1	2	1	1	1														
Cable laying tracked crane																			
Cable winch										1	1	1	1	1	1				
Pre-cast concrete truck																			
Mobile concrete pump									1	1	1	1	1	1					
Telehandler	1	2	1	1	1	2	2	2	3	3	3	3	3	1					
Mobile self-contained welfare unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Crawler Crane						1	1	1	1	1	1	1	1						
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	1	2	2	2	3	6	6	6	6	3	2	1	2	2	
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	2	2	2	3	4	4	4	4	2	1	2	2	2	
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)						1	1	1	3	3	3	3	3	2	1				
Total Plant Onsite In Section Per Month	21	31	20	20	20	31	31	31	40	47	47	47	47	30	19	20	30	30	
Total Deliveries / Removals	21	10	11	0	0	19	0	0	9	9	0	0	0	17	11	11	10	30	
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.0	0.9	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.8	0.5	0.5	0.5	1.4	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	0	2	0	0	1	1	0	0	0	2	1	1	1	3	

Section 2

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCC and site accesses	44	132	3	3																								
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	88	264		3	3	3	3																					
Cable Construction Works																												
Trench Excavation and duct installation	176	352						2	2	2	2	2	2	2	2													
Trench Backfill with CBS and protective covers	176	352						2	2	2	2	2	2	2	2	2												
Jointing Bay Excavation	132	264										2	2	2	2	2	2											
Jointing Bay Base Construction	132	264										2	2	2	2	2	2	2										
Pulling and connection of cables	132	396											3	3	3	3	3	3										
Backfill over Jointing Bays	132	264											2	2	2	2	2	2	2									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	78	234																							3	3	3	
TCC and access road Removal	52	156																								3	3	
Plant Operators																												
Overall Plant Operators	468	11,180	17	26	16	16	16	25	25	25	30	33	33	33	33	22	14	16	25	25								
Section 1 Engineering Personnel																												
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4								
Average Total Employees per day			24	36	23	23	23	33	33	33	42	50	50	50	50	35	23	23	35	35								
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	46	46	66	66	66	84	100	100	100	100	70	46	46	70	70								

Section 2
Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	36	28	28	28	58	58	58	60	64	64	64	64	7	4	37	45	47	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	40	31	31	31	64	64	64	67	70	70	70	70	8	5	41	50	51	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	0	2	0	0	1	1	0	0	0	2	1	1	1	3	
Average total two-way HGV Movements Per Day	14	41	32	31	31	66	64	64	68	71	70	70	70	10	6	42	51	54	
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	46	66	66	66	84	100	100	100	100	70	46	46	70	70	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	51	73	73	73	93	110	110	110	110	77	51	51	77	77	
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	121	83	82	82	139	137	137	161	181	180	180	180	87	57	93	128	131	

Section 3

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	66	875		13.3	13.3	13.3														
Cable Construction Works																				
Trench Excavation and duct installation	132	2,267								17.2	17.2	17.2	17.2	17.2	17.2					
Trench Backfill with CBS and protective covers	132	1,584								12.0	12.0	12.0	12.0	12.0	12.0					
Jointing Bay Excavation	110	70										0.6	0.6	0.6	0.6	0.6				
Jointing Bay Base Construction	110	69										0.6	0.6	0.6	0.6	0.6				
Pulling and connection of cables	110	160											1.5	1.5	1.5	1.5	1.5			
Backfill over Jointing Bays	110	40											0.4	0.4	0.4	0.4	0.4			
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Exit Only																				
Establish HDD Exit Pit Compound	22	50					2.3													
Mobilisation of HDD Kit and Welfare to compounds	22	5					0.2													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	94						1.4	1.4	1.4										
Demobilisation of HDD Kit and welfare.	22	5									0.2									
Remove of onshore HDD Exit Compound	22	50															2.3			
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	66	875																13.3	13.3	13.3
Demobilisation of Welfare from TCC	22	13																		0.6
TCC and access road Removal	44	190																	4.3	4.3
Average Section Skip HGV Movements Per Day	396	124	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total HGVs per day			5.2	17.9	13.6	13.6	2.8	1.7	1.7	30.9	29.7	30.8	32.6	32.6	32.6	3.4	4.4	13.6	17.9	18.5
Total two-way HGV movements per day			10.4	35.8	27.1	27.1	5.6	3.5	3.5	61.8	59.4	61.5	65.1	65.1	65.1	6.8	8.8	27.1	35.8	37.0

Section 3

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer	1	2	1	1	1							2	2	2	2	2	3	3
30T Excavator	2	3	2	2	2			3	3	3	3	3	3	3	3	2	3	3
20T Dumper	3	3	3	3				4	4	4	6	6	6	4	4	2	4	4
Smooth Drum vibrio road roller	1	2	1	1	1										1	1	2	2
21T excavator	1	2	1	1	1			3	3	3	3	3	3	2	2	1	2	2
5T Forward Tipping Dumper	1	2	1	1	1			3	3	3	3	2	2	2	2	1	2	2
Loading shovel	1	2	1	1	1			3	3	3	3	3	3	1	3	2	3	3
Trench Roller								2	2	2	2	2	2	1	1			
Tractor & fencing kit	1	1	1	1	1										1	1	1	1
Tractor & trailer	1	2	1	1	1			2	2	2	3	3	3	1	1	1	2	2
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1
Tractor & Water bowser (for dust suppression)	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1
Tractor & cable drum trailer												1	1	1	1			
Tractor & soil tiller, roller, seeder																1	1	1
Cement mixer																		
Mobile crane																		
Grader	1	2	1	1	1													
Cable laying tracked crane																		
Cable winch												1	1	1	1			
Pre-cast concrete truck																		
Mobile concrete pump											1	1	1	1				
Telehandler	1	2	1	1	1			2	2	2	3	3	3	1				
Mobile self-contained welfare unit	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1
Crawler Crane								1	1	1	1	1	1					
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	1			2	2	2	3	6	6	3	3	1	2	2
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2			2	2	2	3	4	4	2	2	2	2	2
Road surface paver & roller	1	1																
Pump deliveries (corrected for 4 per delivery)								1	1	1	3	3	3	2	1			
Total Plant Onsite In Section Per Month	21	31	20	20	17	0	0	31	31	31	40	47	47	30	31	20	30	30
Total Deliveries / Removals	21	10	11	0	20	0	0	31	0	0	9	9	0	17	7	13	10	30
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.9	0.0	0.0	1.4	0.0	0.0	0.4	0.4	0.0	0.8	0.3	0.6	0.5	1.4
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	2	0	0	3	0	0	1	1	0	2	1	2	1	3

Section 3

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCC and site accesses	44	132	3	3																								
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	66	198		3	3	3																						
Cable Construction Works																												
Trench Excavation and duct installation	132	264									2	2	2	2	2	2												
Trench Backfill with CBS and protective covers	132	264									2	2	2	2	2	2												
Jointing Bay Excavation	110	220											2	2	2	2	2	2										
Jointing Bay Base Construction	110	220											2	2	2	2	2	2										
Pulling and connection of cables	110	330												3	3	3	3	3	3									
Backfill over Jointing Bays	110	220												2	2	2	2	2	2									
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Exit Only																												
Establish HDD Exit Pit Compounds	22	44					2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	66	132						2	2	2																		
Remove of onshore HDD Entry and Exit Compounds	22	44																2										
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	78	234																		3		3				3	3	
TCC and access road Removal	52	156																				3				3	3	
Plant Operators																												
Overall Plant Operators	416	9,646	17	26	16	16	13				25	25	25	30	33	33	22	24		16		25				25	25	
Section 1 Engineering Personnel																												
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4				4	4	
Average Total Employees per day			24	36	23	23	19	6	6		35	33	37	47	50	50	35	35		23		35				35	35	
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	46	38	12	12		70	66	74	94	100	100	70	70		46		70				70	70	

Section 3
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	36	27	27	6	3	3	62	59	62	65	65	65	7	9	27	36	37
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	40	30	30	7	4	4	68	66	68	72	72	72	8	10	30	40	41
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	2	0	0	3	0	0	1	1	0	2	1	2	1	3
Average total two-way HGV Movements Per Day	14	41	31	30	9	4	4	71	66	68	73	73	72	10	11	32	41	44
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	38	12	12	70	66	74	94	100	100	70	70	46	70	70
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	42	14	14	77	73	82	104	110	110	77	77	51	77	77
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	121	82	81	51	18	18	148	139	150	177	183	182	87	88	83	118	121

Section 4

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	532		12.1	12.1															
Cable Construction Works																				
Trench Excavation and duct installation	66	878			13.3	13.3	13.3													
Trench Backfill with CBS and protective covers	66	614			9.3	9.3	9.3													
Jointing Bay Excavation	66	43										0.7	0.7	0.7						
Jointing Bay Base Construction	66	43										0.7	0.7	0.7						
Pulling and connection of cables	66	96											1.5	1.5	1.5					
Backfill over Jointing Bays	66	24											0.4	0.4	0.4					
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Entry Only																				
Establish HDD Entry Pit Compound	22	95					4.3													
Mobilisation of HDD Kit and Welfare to compounds	22	25					1.1													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	381						5.8	5.8	5.8										
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0									
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	0									0.0									
Major HDD crossing of Stream Dike (OB ID S4-WX-1) - HDD Entry Only																				
Establish HDD Entry Pit Compound - Reuse from previous HDD in section.	22	0									0.0									
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in section.	22	0									0.0									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	381										8.7	8.7							
Demobilisation of HDD Kit and welfare.	22	25												1.1						
Remove of onshore HDD Entry Compound	22	95														4.3				
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	532														12.1	12.1			
Demobilisation of Welfare from TCC	22	13															0.6			
TCC and access road Removal	44	190														4.3	4.3			
Average Section Skip HGV Movements Per Day	330	110	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
Total HGVs per day			5.2	16.7	35.0	22.9	28.4	6.1	6.1	6.1	0.3	10.3	12.1	4.6	2.2	21.0	17.3	0.0	0.0	0.0
Total two-way HGV movements per day			10.5	33.5	70.1	45.9	56.7	12.2	12.2	12.2	0.7	20.6	24.2	9.2	4.3	42.1	34.7	0.0	0.0	0.0

Section 4 (Including Landfall & Transition Bay Works)

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1		1				2		2	2	2	3	3				
30T Excavator	2	3	3	3	3				2	2	3	3	2	3	3				
20T Dumper	3	3	6	4	4				2	2	4	4	2	4	4				
Smooth Drum vibrio road roller	1	2	1		1				1					2	2				
21T excavator	1	2	3	3	3				1	1	2	2	1	2	2				
5T Forward Tipping Dumper	1	2	3	3	3				1	1	2	2	1	2	2				
Loading shovel	1	2	3	3	3				2		1	1	1	3	3				
Trench Roller			2	2	2						1	1	1						
Tractor & fencing kit	1	1	1		1				1					1	1				
Tractor & trailer	1	2	3	2	3				1	1	1	1		2	2				
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1				1	1	1	1	1	1	1				
Tractor & Water bowser (for dust suppression)	1	1	1	1	1				1	1	1	1	1	1	1				
Tractor & cable drum trailer											1	1	1						
Tractor & soil tiller, roller, seeder														1	1				
Cement mixer																			
Mobile crane																			
Grader	1	2	1		1				1										
Cable laying tracked crane																			
Cable winch											1	1	1						
Pre-cast concrete truck																			
Mobile concrete pump										1	1	1							
Telehandler	1	2	3	2	3				1	1	1	1							
Mobile self-contained welfare unit	1	1	1	1	1				1	1	1	1	1	1	1				
Crawler Crane			1	1	1														
Mobile generator deliveries (corrected for 2 per delivery)	2	2	3	2	3				2	2	3	3	2	2	2				
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	3	2	3				1	1	2	2	1	2	2				
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)			1	1	2					1	2	2	1						
Total Plant Onsite In Section Per Month	21	31	41	31	40	0	0	0	21	16	30	30	19	30	30	0	0	0	
Total Deliveries / Removals	21	10	18	10	49	0	0	0	21	9	14	0	11	19	30	0	0	0	
Average Deliveries / Removals Per Day	1.0	0.5	0.8	0.5	2.2	0.0	0.0	0.0	1.0	0.4	0.6	0.0	0.5	0.9	1.4	0.0	0.0	0.0	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	2	1	5	0	0	0	2	1	2	0	1	2	3	0	0	0	

Section 4 /

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCC and site accesses	44	132	3	3																								
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3																							
Cable Construction Works																												
Trench Excavation and duct installation	66	132			2	2	2																					
Trench Backfill with CBS and protective covers	66	132			2	2	2																					
Jointing Bay Excavation	66	132										2	2	2														
Jointing Bay Base Construction	66	132										2	2	2														
Pulling and connection of cables	66	198											3	3	3													
Backfill over Jointing Bays	66	132											2	2	2													
Major HDD crossing of A1035 (OB ID S3-RX-1) - HDD Entry Only																												
Establish HDD Entry Pit Compound	22	44					2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	66	198						3	3	3																		
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	22									1																	
Major HDD crossing of Stream Dike (OB ID S4-WX-1) - HDD Entry Only																												
Establish HDD Entry Pit Compound - Reuse from previous HDD in section.	22	22									1																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	44	132										3	3															
Remove of onshore HDD Entry and Exit Compounds	22	44														2												
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156														3	3											
TCC and access road Removal	52	156														3	3											
Plant Operators																												
Overall Plant Operators	312	6,968	17	26	33	25	31				17	11	22	22	14	25	25											
Section 1 Engineering Personnel																												
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,560	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4											
Average Total Employees per day			24	36	44	33	41	7	7	7	23	22	38	35	23	37	35	0	0	0								
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	88	66	82	14	14	14	46	44	76	70	46	74	70	0	0	0								

Section 4**Indicative Total Vehicle Movement Requirements**

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	33	70	46	57	12	12	12	1	21	24	9	4	42	35	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	38	79	52	64	14	14	14	1	24	28	11	5	48	40	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	2	1	5	0	0	0	2	1	2	0	1	2	3	0	0	0
Average total two-way HGV Movements Per Day	14	39	81	53	69	14	14	14	3	25	30	11	6	50	43	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	88	66	82	14	14	14	46	44	76	70	46	74	70	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	97	73	91	16	16	16	51	49	84	77	51	82	77	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	119	178	126	160	30	30	30	54	74	114	88	57	132	120	0	0	0

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

[illegible]

Indicative Construction Plant Requirements

Plant	Month																			
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
D6 Dozer	1	2	2	1	2				2			2	2	2	2	3	2	3	3	
30T Excavator	2	3	3	3	2	3			3	3	3	3	3	3	3	2	2	3	3	
20T Dumper	3	3	3	3	3	4			4	4	6	6	6	6	4	4	2	4	4	
Smooth Drum vibrio road roller	1	2	2	1	2				1							1	1	2	3	
21T excavator	1	2	2	1	2				3	3	3	3	3	3	2	2	1	1	2	2
ST Forward Tipping Dumper	1	2	2	1	2				3	3	3	2	2	2	2	2	1	2	2	
Loading shovel	1	2	2	1	3				3	3	3	3	3	3	1	3	2	3	3	
Trench Roller									2	2	2	2	2	2	1	1				
Tractor & fencing kit	1	1	1	1	1	1				1						1	1	1	1	
Tractor & trailer	1	2	2	1	1	2			2	2	3	3	3	3	1	1	1	1	2	2
Tractor & Fuel bowser (or self propelled)	1	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	
Tractor & cable drum trailer												1	1	1	1	1				
Tractor & soil filler, roller, seeder																	1	1	3	1
Cement mixer																				
Mobile crane																				
Grader	1	2	2	1	2				1											
Cable laying tracked crane																				
Cable winch												1	1	1	1	1				
Pre-cast concrete truck													1	1	1	1				
Mobile concrete pump											1	1	1	1	1					
Telehandler	1	2	2	1	2				2	3	3	3	3	3	1					
Mobile self-contained wellpans unit	1	1	1	1	1				1	1	1	1	1	1	1	1	1	1	1	
Crawler Crane									1	1	1	1	1	1						
Mobile generator deliveries (corrected for 2 per delivery)	2	2	2	1	2				2	2	3	6	6	6	3	3	1	2	2	
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	2			2	3	3	4	4	4	4	2	2	2	2	
Road surface power & roller	1	1																		
Pump deliveries (corrected for 4 per delivery)									1	1	3	3	3	3	2	1				
Total Plant Onsite In Section Per Month	21	31	30	20	32	0	0	31	38	40	47	47	47	30	33	20	30	30		
Total Deliveries / Removals	21	19	1	10	44	0	0	31	7	12	9	0	0	17	9	13	10	30		
Average Deliveries / Removals Per Day	1.0	0.5	0.0	0.5	2.0	0.0	0.0	1.4	0.3	0.5	0.4	0.0	0.0	0.8	0.4	0.6	0.5	1.4		
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	1	4	0	0	3	1	2	1	0	0	2	1	2	1	1		

Section 5

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																										
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30									
Establish TCC and site accesses	44	132	3	3																									
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	88	264		3	3	3	3																						
Cable Construction Works																													
Trench Excavation and duct installation	132	264								2	2	2	2	2	2														
Trench Backfill with CBS and protective covers	132	264								2	2	2	2	2	2														
Jointing Bay Excavation	110	220										2	2	2	2	2	2												
Jointing Bay Base Construction	110	220										2	2	2	2	2													
Pulling and connection of cables	110	330											3	3	3	3	3	3											
Backfill over Jointing Bays	110	220											2	2	2	2	2	2											
Major HDD crossing of Stream Dike (OB ID S64-WX-1) - HDD Exit Only																													
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section	22	22									1																		
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	44	132										3	3																
Remove of onshore HDD Entry and Exit Compound	22	44																2											
Major HDD crossing of Monk Dike and Meaux & Routh East Drain (OB IDs S66-WX-1 and S6-WX-2) - HDD Entry Only																													
Establish HDD Entry Pit Compound - Reuse from previous HDD in section with additional material delivered to site	22	22					1																						
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	66	396						6	6	6																			
Remove of onshore HDD Entry Compound - reuse of some material at next HDD in section with some material removed from site	22	22									1																		
Minor HDD crossing of A165 (OB ID S5-RX-1) - HDD Entry and Exit																													
Establish HDD Entry and Exit Pit Compounds	22	44			2																								
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110					5																						
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	22						1																					
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	104	312																3	3	3	3								
TCC and access road Removal	82	156																											
Plant Operators																													
Overall Plant Operators	416	10,660	17	26	26	16	27			25	31	30	33	33	33	33	22	26	16	25	25								
Section 1 Engineering Personnel																													
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Average Total Employees per day			24	36	34	28	36	10	10	39	41	45	53	50	50	35	40	23	35	35									
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	68	56	72	20	20	78	82	90	106	100	100	70	80	46	70	70									

Section 5
Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	11	34	37	51	30	16	16	76	68	65	69	68	67	7	9	34	43	44	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	38	41	57	33	18	18	85	75	72	76	75	75	8	10	38	48	49	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	1	4	0	0	3	1	2	1	0	0	2	1	2	1	3	
Average total two-way HGV Movements Per Day	14	39	42	58	37	18	18	88	76	74	77	75	76	10	11	40	49	52	
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	68	56	72	20	20	78	82	90	106	100	100	70	80	46	70	70	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	75	62	80	22	22	86	91	99	117	110	110	77	88	51	77	77	
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	119	117	120	117	40	40	174	167	173	194	185	185	87	99	91	126	129	

Section 6
Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																												
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30											
Establish TCCs and site accesses	44	327	7.4	7.4																											
Mobilisation of Welfare and Operation Plant to TCC	22	32	1.5																												
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	88	1,150		13.1	13.1	13.1	13.1																								
Cable Construction Works																															
Trench Excavation and duct installation	154	2,624								16.4	16.4	16.4	16.4	16.4	16.4	16.4															
Trench Backfill with CBS and protective covers	154	1,763								11.4	11.4	11.4	11.4	11.4	11.4	11.4															
Joining Bay Excavation	132	84															0.6	0.6	0.6	0.6	0.6	0.6									
Joining Bay Base Construction	132	84															0.6	0.6	0.6	0.6	0.6	0.6									
Putting and connection of cables	132	192															1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5							
Backfill over Joining Bays	132	47															0.4	0.4	0.4	0.4	0.4	0.4	0.4								
Major HDD crossing of Holderness Drain (OB ID S6-WX-3) - HDD Entry Only																															
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	46															2.1														
Mobilisation of HDD Kit and Welfare to compounds	22	25															1.1														
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	250																6.7	6.7												
Demobilisation of HDD Kit and welfare	22	25																			1.1										
Remove of onshore HDD Entry Compound	22	96																											4.4		
Major HDD crossing of Monk Dike and Meaux & Routh East Drain (OB IDs S6-WX-1 and S6-WX-2) - HDD Exit Only																															
Establish HDD Exit Pit Compound	22	50								2.3																					
Mobilisation of HDD Kit and Welfare to compounds	22	5								0.2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	83								1.3	1.3	1.3																			
Demobilisation of HDD Kit and welfare	22	5																0.2													
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0																0.9													
Minor HDD crossing of A1036 (OB ID S6-RX-61) - HDD Entry and Exit																															
Establish HDD Entry and Exit Pit Compounds	22	95								4.3																					
Mobilisation of HDD Kit and Welfare to compounds	22	19								0.9																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	281								12.8																					
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.9																				
Remove of onshore HDD Entry and Exit Compounds - materials moved at next HDD in section	22	0									0.9																				
Minor HDD crossing of Ormside Export Cables of Orger Band A & B (OB ID S6-UX-2) - HDD Entry and Exit																															
Establish HDD Entry and Exit Pit Compounds - Reuse from previous HDD in Section	22	0									0.9																				
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.9																				
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	281									12.8																				
Demobilisation of HDD Kit and welfare	22	19										0.9																			
Remove of onshore HDD Entry and Exit Compounds	22	95																													
Haul Road Removal (includes removal of fencing) and adjustment of cable route	66	1,150																											17.4	17.4	17.4
Demobilisation of Welfare from TCC	22	32																													1.6
TCC and access road Removal	44	327																											7.4	7.4	7.4
Average Section Skip HGV movements Per Day	396	256	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
		Total HGVs per day	9.5	21.1	13.7	18.9	28.0	1.9	42.5	38.6	33.2	37.2	37.2	37.2	37.2	37.2	31.6	3.7	11.1	18.1	26.9	27.4									
		Total towaway HGV movements per day	19.1	42.3	27.4	37.8	57.9	3.8	85.0	61.2	66.4	74.5	74.5	65.4	65.4	65.4	63.1	7.5	22.3	36.1	51.0										

Section 6

Indicative Construction Plant Requirements

Plant	Month																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
D6 Dozer	1	2	1	2	2	2			2	2	2	2	2	2	2	2	3	3												
30T Excavator	2	3	2	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3												
20T Dumper	3	3	3	3	3	2	4	4	6	6	6	6	6	6	4	2	4	4												
Smooth Drum vibrle road roller	1	2	1	2	2	1			1						1	1	2													
21T excavator	1	2	1	2	2	1	3	3	3	3	3	3	3	2	2	1	2	2												
3T Forward Tipping Dumper	1	2	1	2	2	1	3	3	3	2	2	2	2	2	2	1	2	2												
Loading shovel	1	2	1	2	2	2	3	3	3	3	3	3	3	1	3	2	3	3												
Tractor Boller								2	2	2	2	2	2	2	1	1														
Tractor & Banging kit	1	1	1	1	1	1			1						1	1	1	1												
Tractor & trailer	1	2	1	2	2	1	2	2	3	3	3	3	3	1	1	1	2	2												
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1												
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1															
Tractor & cable drum trailer										1	1	1	1	1	1															
Tractor & soil tiller, roller, seeder																1	1	1												
Cement mixer																														
Mobile crane									1																					
Grader						2	1																							
Cable laying tracked crane																														
Cable winch										1	1	1	1	1	1	1														
Pne-pact concrete track																														
Mobile concrete pump									1	1	1	1	1	1	1															
Yellhammer	1	2	1	2	2	1	2	2	3	3	3	3	3	1																
Mobile self-contained welfare unit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
Crawler Crane								1	1	1	1	1	1																	
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	2	2	2	2	2	4	6	6	6	6	3	3	1	2	2												
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	1	2	2	4	4	4	4	4	2	2	2	2	2												
Road surface paver & roller	1	1																												
Pump deliveries (corrected for 4 per delivery)								1	1	3	3	3	3	3	2	1														
Total Plant Onsite In Section Per Month	21	31	20	30	30	21	31	31	47	47	47	47	47	30	31	20	30	30												
Total Deliveries / Removals	21	10	11	9	9	9	20	9	16	9	9	9	9	17	7	13	10	30												
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.5	0.0	0.4	0.9	0.0	0.7	0.4	0.0	0.0	0.0	0.0	0.3	0.6	0.5	1.4												
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	1	0	1	2	0	2	1	0	0	0	0	2	1	2	1												

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCC and site accesses	44	132	3	3																										
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	88	264		3	3	3	3																							
Cable Construction Works																														
Trench Excavation and duct installation	154	308							2	2	2	2	2	2	2															
Trench Backfill with CBS and protective covers	154	308							2	2	2	2	2	2	2															
Joining Bay Excavation	132	264									2	2	2	2	2	2														
Joining Bay Base Construction	132	264									2	2	2	2	2	2														
Pulling and connection of cables	132	396										3	3	3	3	3	3	3												
Backfill over Joining Bays	132	264										2	2	2	2	2	2	2												
Major HDD crossing of Holderness Drain (OB ID S6-WX-6) - HDD Entry Only																														
Establish HDD Entry PE Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22									1																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month). Includes admin of HDD compound	44	264										6	6																	
Removal of onshore HDD Entry Compound	22	22																1												
Major HDD crossing of Monk Dale and Meaux & Routh East Drain (OB IDs S6-WX-1 and S6-WX-2) - HDD Exit Only																														
Establish HDD Exit PE Compound	22	44					2																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month). Includes admin of HDD compound	66	198							3	3	3																			
Removal of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22										1																		
Mixor HDD crossing of A1035 (OB ID S6-RX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit PE Compound	22	44				5																								
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month). Includes admin of HDD compound	22	110						6																						
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	22							1																					
Mixor HDD crossing of Onshore Export Cables of Dogger Bank & B (OB ID S6-AUX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit PE Compounds - Reuse from previous HDD in Section.	22	22							1																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month). Includes admin of HDD compound	22	110							5																					
Remove of onshore HDD Entry and Exit Compounds	22	22																1												
Haul Road Removal (includes removal of fencing) and establishment of public route.	78	234																	3											
TCC and access road Removal	62	156																	3											
Plant Operators																														
Overall Plant Operators	468	11,830	17	26	18	25	25	17	25	25	35	33	33	33	33	22	24	16	25											
Section 1 Engineering Personnel																														
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4											
Project Engineering Personnel Based at Main TCC																														
Head Engineer, 2 x Admin Staff, QS, Assistant QS, Overall Site Foreman, H&S Supervisor/ H&S Assistant, Environmental Clerk, Assistant Environmental Clerk, Lead Surveyor, 3 x catering staff, 2 x client representatives, 2 x owners engineers, 3 x additional allowance	468	9,360	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20											
Average Total Employees per day			44	56	43	54	69	46	61	66	69	76	76	76	70	70	55	43	55											
Maximum Total Employee Two-way Movements Per Day (car/mal van)			88	112	86	108	118	92	122	112	138	152	152	140	140	110	86	110	110											

Section 6
Indicative Total Vehicle Movement Requirements

Activity	Month															
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	19	42	27	38	58	4	85	61	66	74	74	65	63	7	22	36
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	21	47	31	42	64	5	94	68	73	82	82	72	70	9	25	40
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	1	0	1	2	0	2	1	0	0	0	2	1	2
Average total two-way HGV Movements Per Day	23	48	32	43	64	6	96	68	75	83	82	72	70	11	26	42
Maximum Total Employee Two-way Movements Per Day (car/small van)	88	112	86	108	118	92	122	112	138	152	152	140	140	110	110	86
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	97	124	95	119	130	102	135	124	152	168	168	154	154	121	121	95
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	120	172	127	162	194	108	231	192	227	251	250	226	224	132	147	137

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	608		13.8	13.8															
Cable Construction Works																				
Trench Excavation and duct installation	88	1,500				17.0	17.0	17.0	17.0											
Trench Backfill with CBS and protective covers	88	1,048				11.9	11.9	11.9	11.9											
Jointing Bay Excavation	66	43										0.7	0.7	0.7						
Jointing Bay Base Construction	66	43										0.7	0.7	0.7						
Pulling and connection of cables	66	96											1.5	1.5	1.5					
Backfill over Jointing Bays	66	24											0.4	0.4	0.4					
Major HDD crossing of Holderness Drain (OB ID S6-WX-3) - HDD EXIT Only																				
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	0									0.0									
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	47										1.1	1.1							
Demobilisation of HDD Kit and welfare	22	5												0.2						
Remove of onshore HDD Entry Compound	22	48														2.2				
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Exit Only																				
Establish HDD Exit Pit Compound	22	48					2.2													
Mobilisation of HDD Kit and Welfare to compounds	22	5					0.2													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	47						0.7	0.7	0.7										
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0									
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0									0.0									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	608														13.8	13.8			
Demobilisation of Welfare from TCC	22	13															0.6			
TCC and access road Removal	44	190														4.3	4.3			
Average Section Skip HGV Movements Per Day	330	110	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
Total HGVs per day			5.2	18.5	14.2	29.3	31.7	30.0	30.0	1.0	0.3	2.7	4.5	3.7	2.2	20.7	19.1	0.0	0.0	
Total two-way HGV movements per day			10.5	36.9	28.3	58.6	63.4	60.0	60.0	2.1	0.7	5.4	9.0	7.4	4.3	41.3	38.1	0.0	0.0	

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer	1	2	1		1				2		2	2	2	3	3			
30T Excavator	2	3	2	3	3	3	3		2	2	3	3	2	3	3			
20T Dumper	3	3	3	4	4	4	4		2	2	4	4	2	4	4			
Smooth Drum vibrio road roller	1	2	1		1				1					2	2			
21T excavator	1	2	1	3	3	3	3		1	1	2	2	1	2	2			
5T Forward Tipping Dumper	1	2	1	3	3	3	3		1	1	2	2	1	2	2			
Loading shovel	1	2	1	3	3	3	3		2		1	1	1	3	3			
Trench Roller				2	2	2	2				1	1	1					
Tractor & fencing kit	1	1	1		1				1					1	1			
Tractor & trailer	1	2	1	2	3	2	2		1	1	1	1		2	2			
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1		1	1	1	1	1	1	1			
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1		1	1	1	1	1	1	1			
Tractor & cable drum trailer											1	1	1					
Tractor & soil tiller, roller, seeder														1	1			
Cement mixer																		
Mobile crane																		
Grader	1	2	1		1				1									
Cable laying tracked crane																		
Cable winch											1	1	1					
Pre-cast concrete truck																		
Mobile concrete pump										1	1	1						
Telehandler	1	2	1	2	3	2	2		1	1	1	1						
Mobile self-contained welfare unit	1	1	1	1	1	1	1		1	1	1	1	1	1	1			
Crawler Crane				1	1	1	1											
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	2	3	2	2		2	2	3	3	2	2	2			
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	2	2		1	1	2	2	1	2	2			
Road surface paver & roller	1	1																
Pump deliveries (corrected for 4 per delivery)				1	2	1	1			1	2	2	1					
Total Plant Onsite In Section Per Month	21	31	20	31	40	31	31	0	21	16	30	30	19	30	30	0	0	0
Total Deliveries / Removals	21	10	11	19	9	9	31	0	21	9	14	0	11	19	30	0	0	0
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.9	0.4	0.4	1.4	0.0	1.0	0.4	0.6	0.0	0.5	0.9	1.4	0.0	0.0	0.0
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	2	1	1	3	0	2	1	2	0	1	2	3	0	0	0

Section 7

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCC and site accesses	44	132	3	3																
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3															
Cable Construction Works																				
Trench Excavation and duct installation	88	176				2	2	2	2											
Trench Backfill with CBS and protective covers	88	176				2	2	2	2											
Jointing Bay Excavation	66	132										2	2	2						
Jointing Bay Base Construction	66	132										2	2	2						
Pulling and connection of cables	66	198											3	3	3					
Backfill over Jointing Bays	66	132											2	2	2					
Major HDD crossing of Holderness Drain (OB ID S6-WX-3) - HDD EXIT Only																				
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22									1									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132										3	3							
Remove of onshore HDD Entry Compound	22	44														2				
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Exit Only																				
Establish HDD Exit Pit Compound	22	44					2													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	66	198						3	3	3										
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22									1									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156														3	3			
TCC and access road Removal	52	156														3	3			
Plant Operators																				
Overall Plant Operators	364	7,826	17	26	16	25	31	25	25		17	11	22	22	14	25	25			
Section 1 Engineering Personnel																				
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,560	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
Average Total Employees per day			24	36	23	33	41	36	36	7	23	22	38	35	23	37	35	0	0	
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	66	82	72	72	14	46	44	76	70	46	74	70	0	0	

Section 7
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	37	28	59	63	60	60	2	1	5	9	7	4	41	38	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	41	32	65	70	66	66	3	1	6	10	9	5	46	42	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	2	1	1	3	0	2	1	2	0	1	2	3	0	0	0
Average total two-way HGV Movements Per Day	14	42	33	67	71	67	69	3	3	7	12	9	6	48	45	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	66	82	72	72	14	46	44	76	70	46	74	70	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	73	91	80	80	16	51	49	84	77	51	82	77	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	122	84	140	162	147	149	19	54	56	96	86	57	130	122	0	0	0

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	66	772		11.7	11.7	11.7														
Cable Construction Works																				
Trench Excavation and duct installation	66	1,134					17.2	17.2	17.2											
Trench Backfill with CBS and protective covers	66	792					12.0	12.0	12.0											
Jointing Bay Excavation	66	43										0.7	0.7	0.7						
Jointing Bay Base Construction	66	43										0.7	0.7	0.7						
Pulling and connection of cables	66	96											1.5	1.5	1.5					
Backfill over Jointing Bays	66	24											0.4	0.4	0.4					
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Entry Only																				
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	0									0.0									
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	374										8.5	8.5							
Demobilisation of HDD Kit and welfare	22	25												1.1						
Remove of onshore HDD Entry Compound	22	95														4.3				
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Entry Only																				
Establish HDD Entry Pit Compound	22	95					4.3													
Mobilisation of HDD Kit and Welfare to compounds	22	25					1.1													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	66	374						5.7	5.7	5.7										
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0									
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0									0.0									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	772														17.5	17.5			
Demobilisation of Welfare from TCC	22	13															0.6			
TCC and access road Removal	44	190														4.3	4.3			
Average Section Skip HGV Movements Per Day	330	110	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
Total HGVs per day			5.2	16.3	12.0	12.0	34.9	35.2	35.2	6.0	0.3	10.1	12.0	4.6	2.2	26.5	22.8	0.0	0.0	
Total two-way HGV movements per day			10.5	32.7	24.1	24.1	69.9	70.4	70.4	12.0	0.7	20.3	23.9	9.2	4.3	53.0	45.6	0.0	0.0	

Section 8

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1	1	1				2		2	2	2	3	3				
30T Excavator	2	3	2	2	3	3	3		2	2	3	3	2	3	3				
20T Dumper	3	3	3	3	4	4	4		2	2	4	4	2	4	4				
Smooth Drum vibrio road roller	1	2	1	1	1				1					2	2				
21T excavator	1	2	1	1	3	3	3		1	1	2	2	1	2	2				
5T Forward Tipping Dumper	1	2	1	1	3	3	3		1	1	2	2	1	2	2				
Loading shovel	1	2	1	1	3	3	3		2		1	1	1	3	3				
Trench Roller					2	2	2				1	1	1						
Tractor & fencing kit	1	1	1	1	1				1					1	1				
Tractor & trailer	1	2	1	1	3	2	2		1	1	1	1		2	2				
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1	1		1	1	1	1	1	1	1				
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1		1	1	1	1	1	1	1				
Tractor & cable drum trailer											1	1	1						
Tractor & soil tiller, roller, seeder														1	1				
Cement mixer																			
Mobile crane																			
Grader	1	2	1	1	1				1										
Cable laying tracked crane																			
Cable winch											1	1	1						
Pre-cast concrete truck																			
Mobile concrete pump										1	1	1							
Telehandler	1	2	1	1	3	2	2		1	1	1	1							
Mobile self-contained welfare unit	1	1	1	1	1	1	1		1	1	1	1	1	1	1				
Crawler Crane					1	1	1												
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	3	2	2		2	2	3	3	2	2	2				
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	2	2		1	1	2	2	1	2	2				
Road surface paver & roller	1	1																	
Pump deliveries (corrected for 4 per delivery)					2	1	1			1	2	2	1						
Total Plant Onsite In Section Per Month	21	31	20	20	40	31	31	0	21	16	30	30	19	30	30	0	0	0	
Total Deliveries / Removals	21	10	11	0	20	9	31	0	21	9	14	0	11	19	30	0	0	0	
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.9	0.4	1.4	0.0	1.0	0.4	0.6	0.0	0.5	0.9	1.4	0.0	0.0	0.0	
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	2	1	3	0	2	1	2	0	1	2	3	0	0	0	

Section 8

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCC and site accesses	44	132	3	3																
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	66	198		3	3	3														
Cable Construction Works																				
Trench Excavation and duct installation	66	132					2	2	2											
Trench Backfill with CBS and protective covers	66	132					2	2	2											
Jointing Bay Excavation	66	132										2	2	2						
Jointing Bay Base Construction	66	132										2	2	2						
Pulling and connection of cables	66	198											3	3	3					
Backfill over Jointing Bays	66	132											2	2	2					
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Entry Only																				
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22								1										
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	264										6	6							
Remove of onshore HDD Entry Compound	22	44														2				
Major HDD crossing of River Hull and Beverley and Barmston Drain (OB IDs S8-WX-1 and S8-WX-2) - HDD Entry Only																				
Establish HDD Entry Pit Compound	22	44					2													
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	66	396						6	6	6										
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22									1									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156														3	3			
TCC and access road Removal	52	156														3	3			
Plant Operators																				
Overall Plant Operators	364	7,592	17	26	16	16	31	25	25		17	11	22	22	14	25	25			
Section 1 Engineering Personnel																				
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,560	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
Average Total Employees per day			24	36	23	23	41	39	39	10	23	25	41	35	23	37	35	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	46	82	78	78	20	46	50	82	70	46	74	70	0	0	0

Section 8
Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	33	24	24	70	70	70	12	1	20	24	9	4	53	46	0	0	0	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	37	27	27	79	79	79	14	1	23	27	11	5	60	51	0	0	0	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	2	1	3	0	2	1	2	0	1	2	3	0	0	0	
Average total two-way HGV Movements Per Day	14	38	28	27	81	80	82	14	3	24	29	11	6	62	54	0	0	0	
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	82	78	78	20	46	50	82	70	46	74	70	0	0	0	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	91	86	86	22	51	55	91	77	51	82	77	0	0	0	
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	118	79	78	172	166	168	36	54	79	120	88	57	144	131	0	0	0	

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190	4.3	4.3																
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																	
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	44	344		7.8	7.8															
Cable Construction Works																				
Trench Excavation and duct installation	44	842				19.1	19.1													
Trench Backfill with CBS and protective covers	44	589				13.4	13.4													
Jointing Bay Excavation	44	29										0.7	0.7							
Jointing Bay Base Construction	44	29										0.7	0.7							
Pulling and connection of cables	44	64												1.5	1.5					
Backfill over Jointing Bays	44	17												0.4	0.4					
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Exit Only																				
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	0									0.0									
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	32										0.7	0.7							
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	5												0.2						
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	48													2.2					
Major HDD crossing of Catchwater Drain (OB IDs S9-WX-1) - HDD Exit Only																				
Establish HDD Exit Pit Compound	22	48						2.2												
Mobilisation of HDD Kit and Welfare to compounds	22	5						0.2												
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	32							0.7	0.7										
Demobilisation of HDD Kit and welfare - Reuse at next HDD in Section	22	0									0.0									
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	0									0.0									
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	344													7.8	7.8				
Demobilisation of Welfare from TCC	22	13														0.6				
TCC and access road Removal	44	190													4.3	4.3				
Average Section Skip HGV Movements Per Day	308	102	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3				
Total HGVs per day			5.2	12.5	8.1	32.9	32.9	2.7	1.0	1.0	0.3	2.4	4.2	2.4	14.6	13.1	0.0	0.0	0.0	0.0
Total two-way HGV movements per day			10.5	24.9	16.3	65.7	65.7	5.5	2.1	2.1	0.7	4.7	8.4	4.8	29.3	26.1	0.0	0.0	0.0	0.0

Section 9

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer	1	2	1			1			2		2	2	3	3				
30T Excavator	2	3	2	3	3	2			2	2	3	2	3	3				
20T Dumper	3	3	3	4	4				2	2	4	2	4	4				
Smooth Drum vibrio road roller	1	2	1			1			1				2	2				
21T excavator	1	2	1	3	3	1			1	1	2	1	2	2				
5T Forward Tipping Dumper	1	2	1	3	3	1			1	1	2	1	2	2				
Loading shovel	1	2	1	3	3	1			2		1	1	3	3				
Trench Roller				2	2						1	1						
Tractor & fencing kit	1	1	1			1			1				1	1				
Tractor & trailer	1	2	1	2	2	1			1	1	1		2	2				
Tractor & Fuel bowser (or self-propelled)	1	1	1	1	1	1			1	1	1	1	1	1				
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1			1	1	1	1	1	1				
Tractor & cable drum trailer											1	1						
Tractor & soil tiller, roller, seeder													1	1				
Cement mixer																		
Mobile crane																		
Grader	1	2	1			1			1									
Cable laying tracked crane																		
Cable winch											1	1						
Pre-cast concrete truck																		
Mobile concrete pump										1	1							
Telehandler	1	2	1	2	2	1			1	1	1							
Mobile self-contained welfare unit	1	1	1	1	1	1			1	1	1	1	1	1				
Crawler Crane				1	1													
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	2	2	1			2	2	3	2	2	2				
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2	2			1	1	2	1	2	2				
Road surface paver & roller	1	1																
Pump deliveries (corrected for 4 per delivery)				1	1					1	2	1						
Total Plant Onsite In Section Per Month	21	31	20	31	31	17	0	0	21	16	30	19	30	30	0	0	0	0
Total Deliveries / Removals	21	10	11	19	0	39	0	0	21	9	14	11	19	30	0	0	0	0
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.9	0.0	1.8	0.0	0.0	1.0	0.4	0.6	0.5	0.9	1.4	0.0	0.0	0.0	0.0
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	2	0	4	0	0	2	1	2	1	2	3	0	0	0	0

Section 9

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																			
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Establish TCC and site accesses	44	132	3	3																		
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	44	132		3	3																	
Cable Construction Works																						
Trench Excavation and duct installation	44	88				2	2															
Trench Backfill with CBS and protective covers	44	88				2	2															
Jointing Bay Excavation	44	88										2	2									
Jointing Bay Base Construction	44	88										2	2									
Pulling and connection of cables	44	132											3	3								
Backfill over Jointing Bays	44	88											2	2								
Major HDD crossing of Railway Line (OB ID S8-UTX-1) - HDD Exit Only																						
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section and surplus imported to site.	22	22									1											
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132										3	3									
Remove of onshore HDD Entry Compound - reuse at next HDD in section	22	44													2							
Major HDD crossing of Catchwater Drain (OB IDs S9-WX-1) - HDD Exit Only																						
Establish HDD Exit Pit Compound	22	44						2														
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	44	132							3	3												
Remove of onshore HDD Exit Compound - Reuse at next HDD in Section	22	22									1											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156													3	3						
TCC and access road Removal	52	156													3	3						
Plant Operators																						
Overall Plant Operators	312	6,136	17	26	16	25	25	13			17	11	22	14	25	25						
Section 1 Engineering Personnel																						
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	364	1,456	4	4	4	4	4	4	4	4	4	4	4	4	4	4						
Average Total Employees per day			24	36	23	33	33	19	7	7	23	22	38	23	37	35	0	0	0	0		
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	46	66	66	38	14	14	46	44	76	46	74	70	0	0	0	0		

Section 9
Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	10	25	16	66	66	5	2	2	1	5	8	5	29	26	0	0	0	0	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	28	18	73	73	7	3	3	1	6	10	6	33	29	0	0	0	0	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	2	0	4	0	0	2	1	2	1	2	3	0	0	0	0	
Average total two-way HGV Movements Per Day	14	29	19	75	73	11	3	3	3	7	12	7	35	32	0	0	0	0	
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	66	66	38	14	14	46	44	76	46	74	70	0	0	0	0	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	73	73	42	16	16	51	49	84	51	82	77	0	0	0	0	
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	109	70	148	146	53	19	19	54	56	96	58	117	109	0	0	0	0	

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

[illegible]

Indicative Construction Plant Requirements

Plant	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
D6 Dozer	1	2	1	1	1	1	2		2		2	2	2	2	2	2	3	3	
30T Excavator	2	3	2	2	2	2	2		3	3	3	3	3	3	3	2	3	3	
20T Dumper	3	3	3	3				2	4	6	6	6	6	4	4	2	4	4	
Smooth Drum vibrio road roller	1	2	1	1	1	1	1		1						1	1	2		
21T excavator	1	2	1	1	1	1	1		3	3	3	3	3	2	2	1	2	2	
ST Forward Tipping Dumper	1	2	1	1	1	1	1		3	3	2	2	2	2	2	1	2	2	
Loading shovel	1	2	1	1	1	1	2		3	3	3	3	3	1	3	2	3	3	
Tractor Roller									2	2	2	2	2	1	1				
Tractor & grading bit	1	1	1	1	1	1	1		1						1	1	1	1	
Tractor & trailer	1	2	1	1	1	1	1		2	3	3	3	3	1	1	1	2	2	
Tractor & fuel bowser (or self-propelled)	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	
Tractor & Water bowser (for dust suppression)	2	1	3	3	1	3	1		1	1	1	1	1	1	1	1	1	1	
Tractor & cable drum trailer												1	1	1	1	1			
Tractor & soil tiller, roller, seeder																	1	1	
Cement mixer																			
Mobile crane																			
Grader	1	2	1	1	1	1	1		1										
Cable laying tracked crane																			
Cable winch												1	1	1	1	1			
Pre-cast concrete truck											1	1	1	1	1				
Mobile concrete pump	1	2	1	1	1	1	1		3	3	3	3	3	1					
Telehandler	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	
Mobile self-contained waste unit									1	1	1	1	1						
Crawler Crane									1	1	1	1							
Mobile generator (deliveries corrected for 2 per delivery)	2	2	1	1	1	1	2		2	3	6	6	6	3	3	1	2	2	
Temporary lighting (deliveries corrected for 8 per delivery)	1	2	2	2	2	2	2		3	3	4	4	4	2	2	2	2	2	
Road surface paver & roller	1	1																	
Pump (deliveries corrected for 4 per delivery)									1	3	3	3	3	2	1				
Total Plant Onsite In Section Per Month	21	31	20	20	17	17	21	0	38	40	47	47	47	30	31	20	30	30	
Total Deliveries / Removals	21	10	11	0	3	0	27	0	38	12	3	0	0	17	7	13	10	38	
Average Deliveries / Removable Per Day	1.0	0.5	0.5	0.0	0.1	0.0	1.2	0.0	1.7	0.5	0.4	0.0	0.0	0.8	0.3	0.6	0.5	1.4	
Average Total Two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	1	0	1	0	3	0	4	2	1	0	2	1	2	1	

Section 10

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, scaffolders etc)	Total Working Days	Total Person Days	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCC and site accesses	44	132	3	3																								
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	66	198		3	3	3																						
Cable Construction Works																												
Trench Excavation and duct installation	110	220									2	2	2	2	2													
Trench Backfill with CBS and protective covers	110	220									2	2	2	2	2													
Joining Bay Excavation	110	220										2	2	2	2	2												
Joining Bay Base Construction	110	220										2	2	2	2	2												
Pulling and connection of cables	110	330												3	3	3	3	3										
Backfill over joining Bays	110	220												2	2	2	2	2										
Major HDD crossing of Catchwater Drain (OB ID S9-WX-1) - HDD Entry Only																												
Establish HDD Entry Pit Compound	22	44						2																				
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	44	264							6	6																		
Remove of onshore HDD Entry Compound	22	22															1											
Minor HDD crossing of Driffield Road (OB ID S10-RX-1) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compound	22	44					2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110						5																				
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	22								1																		
Minor HDD crossing of A1636 (OB ID S16-RX-2) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compound	22	22							1																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110								6																		
Remove of onshore HDD Entry and Exit Compounds - some materials reused at next HDD in section, exit compound	22	22									1																	
Minor HDD crossing of A1174 (OB ID S16-RX-4) - HDD Entry																												
Establish HDD Entry Pit Compound	22	22									1																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	66										3																
Remove of onshore HDD Entry Compound	22	22															1											
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	76	234																		3	3	3						
TCC and access road Removal	62	186																			3	3						
Plant Operators																												
Overall Plant Operators	442	10,140	17	26	16	16	13	13	17		31	30	33	33	33	22	24	16	25	25								
Section 1 Engineering Personnel																												
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	468	1,872	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4								
Project Engineering Personnel Based at Main TCC																												
Head Engineer, 2 x Admin Staff, OB, Assistant OB, Overall Site Foreman, H&S Supervisor, H&S Assistant, Environmental Clerk, Assistant Environmental Clerk, Lead Surveyor, 2 x catering staff, 2 x client representative, 2 x owners engineers, 3 x additional allowance	468	9,360	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
Average Total Employees per day			44	56	43	43	39	44	49	35	61	65	70	70	70	65	65	43	55	55								
Maximum Total Employee Two-way Movements Per Day (car/mal van)			88	112	86	86	78	88	98	70	122	130	140	140	140	110	110	86	110	110								

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	29	53	30	30	12	38	13	39	64	84	66	64	64	8	20	30	53	57	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	32	58	33	33	14	42	15	43	71	92	73	71	71	9	22	33	58	63	
Construction Plant Average Total two-way HGV Movements (delivers / Removals) Per Day	2	1	1	0	1	0	3	0	4	2	1	0	0	2	1	2	1	3	
Average total two-way HGV Movements Per Day	34	59	34	33	15	42	18	43	75	94	74	71	71	11	23	35	59	66	
Maximum Total Employee Two-way Movements Per Day (car/mal van)	88	112	86	86	78	88	98	70	122	130	140	140	140	110	110	86	110	110	
Employee Two-way Movements Plus additional 10% for Miscellaneous Movements	97	124	95	95	86	97	108	77	135	143	154	154	154	121	121	95	121	121	
Maximum Total HGV and Car/mal van Two-way Movements Per Day (car/mal van)	131	183	129	128	101	139	126	120	210	237	228	225	225	132	144	130	180	187	

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																	
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Establish TCCs and site accesses	44	190			4.3	4.3														
Mobilisation of Welfare and Operation Plant to TCC	22	13			0.6															
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	22	332					15.1													
Cable Construction Works																				
Trench Excavation and duct installation	44	805						18.3	18.3											
Trench Backfill with CBS and protective covers	44	563						12.8	12.8											
Jointing Bay Excavation	44	29											0.7	0.7						
Jointing Bay Base Construction	44	29											0.7	0.7						
Pulling and connection of cables	44	64													1.5	1.5				
Backfill over Jointing Bays	44	17													0.4	0.4				
Minor HDD crossing of Mature Woodland at Newbald Road (OB ID S16A-EOX-1) - HDD Exit																				
Establish HDD Exit Pit Compound	22	36							1.6											
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	2							0.1											
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	32								1.4										
Demobilisation of HDD Kit and welfare - Reused at next HDD in section.	22	0									0.0									
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section.	22	0									0.0									
Minor HDD crossing of A1174 (OB ID S10-RX-4) - HDD Exit																				
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	0									0.0									
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	32										1.4								
Demobilisation of HDD Kit and welfare	22	2											0.1							
Remove of onshore HDD Exit Compound	22	36														1.6				
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	22	332														15.1				
Demobilisation of Welfare from TCC	22	13															0.6			
TCC and access road Removal	44	190															4.3	4.3		
Average Section Skip HGV Movements Per Day	286	89			0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
Total HGVs per day			0.0	0.0	5.2	4.6	15.4	31.4	33.1	1.7	0.3	1.7	1.7	3.5	2.2	21.4	5.2	0.0	0.0	
Total two-way HGV movements per day			0.0	0.0	10.4	9.3	30.8	62.8	66.3	3.5	0.6	3.5	3.4	6.9	4.3	42.7	10.4	0.0	0.0	

Section 16A

Indicative Construction Plant Requirements

Plant	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
D6 Dozer			1	1	1		1		2			2	2	3	2			
30T Excavator			2	2	2	3	3		2		2	3	2	3	2			
20T Dumper			3	3	3	4	4		2		2	4	2	4	2			
Smooth Drum vibrio road roller			1	1	1		1		1					2	1			
21T excavator			1	1	1	3	3		1		1	2	1	2	1			
5T Forward Tipping Dumper			1	1	1	3	3		1		1	2	1	2	1			
Loading shovel			1	1	1	3	3		2			1	1	3	2			
Trench Roller						2	2					1	1					
Tractor & fencing kit			1	1	1		1		1					1	1			
Tractor & trailer			1	1	1	2	3		1		1	1		2	1			
Tractor & Fuel bowser (or self-propelled)			1	1	1	1	1		1		1	1	1	1	1			
Tractor & Water bowser (for dust suppression)			1	1	1	1	1		1		1	1	1	1	1			
Tractor & cable drum trailer												1	1					
Tractor & soil tiller, roller, seeder														1	1			
Cement mixer																		
Mobile crane																		
Grader			1	1	1		1		1									
Cable laying tracked crane																		
Cable winch												1	1					
Pre-cast concrete truck																		
Mobile concrete pump											1	1						
Telehandler			1	1	1	2	3		1		1	1						
Mobile self-contained welfare unit			1	1	1	1	1		1		1	1	1	1	1			
Crawler Crane						1	1											
Mobile generator deliveries (corrected for 2 per delivery)			2	2	1	2	3		2		2	3	2	2	1			
Temporary lighting deliveries (corrected for 8 per delivery)			1	1	2	2	3		1		1	2	1	2	1			
Road surface paver & roller			1	1														
Pump deliveries (corrected for 4 per delivery)						1	2				1	2	1					
Total Plant Onsite In Section Per Month	0	0	21	21	20	31	40	0	21	0	16	30	19	30	19	0	0	0
Total Deliveries / Removals	0	0	21	0	3	19	49	0	42	0	16	14	11	19	30	0	0	0
Average Deliveries / Removals Per Day	0.0	0.0	1.0	0.0	0.1	0.9	2.2	0.0	1.9	0.0	0.7	0.6	0.5	0.9	1.4	0.0	0.0	0.0
Average Total two-way HGV movements (Deliveries / Removals) Per Day	0	0	2	0	1	2	5	0	4	0	2	2	1	2	3	0	0	0

Section 16A

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCC and site accesses	44	132			3	3																								
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	22	66					3																							
Cable Construction Works																														
Trench Excavation and duct installation	44	88							2	2																				
Trench Backfill with CBS and protective covers	44	88							2	2																				
Jointing Bay Excavation	44	88												2	2															
Jointing Bay Base Construction	44	88												2	2															
Pulling and connection of cables	44	132														3	3													
Backfill over Jointing Bays	44	88														2	2													
Minor HDD crossing of Mature Woodland at Newbald Road (OB ID S16A-E0X-1) - HDD Exit																														
Establish HDD Exit Pit Compound	22	44							2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	22	44								2																				
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section.	22	22									1																			
Minor HDD crossing of A1174 (OB ID S10-RX-4) - HDD Exit																														
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	22									1																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound	22	44										2																		
Remove of onshore HDD Exit Compound	22	22																1												
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	26	78															3													
TCC and access road Removal	52	156															3	3												
Plant Operators																														
Overall Plant Operators	286	5,486			17	17	16	25	31		17		11	22	14	25	16													
Section 1 Engineering Personnel																														
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	338	1,352			4	4	4	4	4	4	4	4	4	4	4	4	4													
Average Total Employees per day			0	0	24	24	23	33	41	6	23	6	19	35	23	36	23	0	0	0										
Maximum Total Employee Two-way Movements Per Day (car/small van)			0	0	48	48	46	66	82	12	46	12	38	70	46	72	46	0	0	0										

Section 16A
Indicative Total Vehicle Movement Requirements

Activity	Month																	
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	0	0	10	9	31	63	66	3	1	3	3	7	4	43	10	0	0	0
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	0	0	12	11	34	69	73	4	1	4	4	8	5	47	12	0	0	0
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	0	0	2	0	1	2	5	0	4	0	2	2	1	2	3	0	0	0
Average total two-way HGV Movements Per Day	0	0	14	11	35	71	78	4	5	4	6	10	6	49	15	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/small van)	0	0	48	48	46	66	82	12	46	12	38	70	46	72	46	0	0	0
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	0	0	53	53	51	73	91	14	51	14	42	77	51	80	51	0	0	0
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	0	0	67	64	86	144	169	18	56	18	48	87	57	129	66	0	0	0

Section 16B
Indicative Construction Plant Requirements

Plant	Month																											
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
D6 Dozer	1	2	1		1		2				2	2	2	2	3	3												
30T Excavator	2	3	2		2		3	3	3	2	3	3	2	3	3													
20T Dumper	3	3	3				4	4	4	2	4	4	2	4	4													
Smooth Drum vibrio road roller	1	2	1		1		1								2	2												
21T excavator	1	2	1		1		3	3	3	1	2	2	1	2	2													
2T Forward Tipping Dumper	1	2	1		1		3	3	3	1	2	2	1	2	2													
Loading shovel	1	2	1		1		3	3	3		1	1	1	1	3	3												
Trench Roller							2	2	2		1	1	1															
Tractor & fencing kit	1	1	1		1		1								1	1												
Tractor & trailer	1	2	1		1		2	2	2	1	1	1			2	2												
Tractor & Fuel bowser (or self generated)	1	1	1		1		1	1	1	1	1	1	1	1	1	1												
Tractor & Water bowser (for dust suppression)	1	1	1		1		1	1	1	1	1	1	1	1	1	1												
Tractor & cable drum trailer											1	1	1															
Tractor & soil filler, roller, seeder															1	1												
Cement mixer																												
Mobile crane																												
Grazer	1	2	1		1		1																					
Cable laying tracked crane																												
Cable winch											1	1	1															
Pre-cast concrete truck																												
Mobile concrete pump										1	1	1																
Telehandler	1	2	1		1		3	2	2	1	1	1																
Mobile self-contained welfare unit	1	1	1		1		1	1	1	1	1	1	1	1	1	1												
Crawler Crane							1	1	1																			
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1		1		2	2	2	2	3	3	2	2	2													
Temporary lighting deliveries (corrected for 8 per delivery)	2	1	2		2		3	2	2	1	2	2	1	2	2													
Road surface paver & roller	1	1																										
Pump deliveries (corrected for 4 per delivery)							1	1	1	1	2	2	1															
Total Plant Onsite In Section Per Month	21	31	20	0	17	0	38	31	31	16	30	30	19	30	30	0	0	0										
Total Deliveries / Removals	21	10	31	0	34	0	38	7	0	17	14	0	11	19	30	0	0	0										
Average Deliveries / Removals Per Day	1.0	0.5	1.4	0.0	1.5	0.0	1.7	0.3	0.0	0.8	0.6	0.0	0.5	0.9	1.4	0.0	0.0	0.0										
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	3	0	4	0	4	1	0	2	2	0	1	2	3	0	0	0										

Section 16B
Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foreman, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																												
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30											
Establish TCC and site accesses	44	132	3	3																											
Site preparation including fencing, temporary drainages, haul road construction and topsoil strip	44	132		3	3																										
Cable Construction Works																															
Trench Excavation and duct installation	66	132								2	2	2																			
Trench Backfill with CBS and protective covers	66	132								2	2	2																			
Jointing Bay Excavation	66	132												2	2	2															
Jointing Bay Base Construction	66	132												2	2	2															
Pulling and connection of cables	66	198															3	3	3												
Backfill over Jointing Bays	66	132															2	2	2												
Major HDD Exit for HDD crossing of A1079 (OB IDs S16B-RX-1 or S16B-RX-3) - HDD Entry																															
Establish HDD Entry Pit Compound	22	44						2																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	66	396								6	6	6																			
Remove of onshore HDD Exit Compound	22	44																								2					
Minor HDD crossing of B1230 (OB ID S16B-RX-1) - HDD Entry and Exit																															
Establish HDD Entry and Exit Pit Compounds	22	44						2																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110							5																						
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section for entry compound. Exit compound materials removed from site	22	22									1																				
Minor HDD crossing of Mature Woodland at Newbold Road (OB ID S16A-EOX-1) - HDD Entry																															
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	22									1																				
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	66										3																			
Remove of onshore HDD Entry Compound	22	44												2																	
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	52	156																									3	3			
TCC and access road Removal	52	156																										3	3		
Plant Operators																															
Overall Plant Operators	338	7,072	17	36	16			13			31	25	29	11	22	22	14	28	25												
Section 1 Engineering Personnel																															
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	364	1,456	4	4	4			4	4	4	4	4	4	4	4	4	4	4	4												
Average Total Employees per day			24	36	23		0	21	15	47	42	35	19	35	35	23	37	35									0	0	0	0	0
Maximum Total Employee Two-way Movements Per Day (car/mal van)			48	72	46	0	42	30	94	84	70	38	70	38	70	46	74	70	0	0	0	0	0	0	0	0	0	0	0	0	0

Section 16B
Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	11	38	29	0	22	47	83	83	62	3	7	7	4	52	39	0	0	0	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	42	33	0	25	53	92	93	69	4	8	8	5	58	43	0	0	0	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	3	0	4	0	4	1	0	2	2	0	1	2	3	0	0	0	
Average total two-way HGV Movements Per Day	14	43	36	0	29	53	96	94	69	6	10	8	6	60	46	0	0	0	
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	0	42	30	94	84	70	38	70	70	46	74	70	0	0	0	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	0	47	33	104	93	77	42	77	77	51	82	77	0	0	0	
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	123	87	0	76	86	200	187	146	48	87	85	57	142	123	0	0	0	

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

[illegible]

Section 14

Indicative Construction Plant Requirements

Plant	Month																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
D6 Dozer	1	2	1	1	1		1		2		2	2	2	2	3	3														
38T Excavator	2	3	2	2	2		3	3	3	3	3	3	2	1	3															
28T Dumper	3	3	3	3	3		4	4	4	4	4	4	2	4	4															
Smooth Drum vibrio road roller	1	2	1	1	1		1		1						2	2														
21T Excavator	1	2	1	1	1		3	3	3	3	2	2	1	2	2															
1T Forward Tipping Dumper	1	2	1	1	1		3	3	3	3	2	2	1	2	2															
Loading shovel	1	2	1	1	1		3	3	3	3	1	1	1	1	3	3														
Trench Bailer							2	2	2	2	1	1	1	1																
Tractor & bending kit	1	1	1	1	1		1		1						1	1														
Tractor & trailer	1	2	1	1	1		3	2	2	3	1	1			2	2														
Tractor & Fuel bowser (or self propelled)	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1														
Tractor & Water bowser (for dust suppression)	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1														
Tractor & cable drum trailer											1	1	1																	
Tractor & soil tiller, roller, tender															1	1														
Cement mixer																														
Mobile crane																														
Grader	1	2	1	1	1		1		1																					
Cable laying tracked crane																														
Cable winch												1	1	1																
Pre-cast concrete track											1	1	1																	
Mobile concrete pump																														
Telehandler	1	2	1	1	1		3	2	3	3	1	1																		
Mobile self contained wellfire unit	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1														
Crawler Crane								1	1	1																				
Mobile generator deliveries (corrected for 2 per delivery)	2	2	1	1	1		3	2	3	3	3	3	2	3	2															
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	2		3	2	3	3	2	3	1	2	2															
Roof surface paver & roller	1	1																												
Pump deliveries (corrected for 4 per delivery)							2	1	1	3	2	2	1																	
Total Plant Onsite In Section Per Month	21	31	20	20	20	0	40	31	38	40	30	30	19	30	30	0	0	0												
Total Deliveries / Removals	21	30	11	0	20	0	40	9	7	12	18	0	11	19	30	0	0	0												
Average Deliveries / Removals Per Day	1.0	0.5	0.5	0.0	0.9	0.0	1.8	0.4	0.3	0.5	0.8	0.0	0.5	0.9	1.4	0.0	0.0	0.0												
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	0	2	0	4	1	1	2	2	0	1	2	3	0	0	0												

Section 14

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCC and site accesses	44	132	3	3																								
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	66	198		3	3	3																						
Cable Construction Works																												
Trench Excavation and duct installation	88	176							2	2	2	2																
Trench Backfill with CBS and protective covers	88	176							2	2	2	2																
Jointing Bay Excavation	66	132										2	2	2														
Jointing Bay Base Construction	66	132										2	2	2														
Pulling and connection of cables	66	198											3	3	3													
Backfill over Jointing Bays	66	132											2	2	2													
Major HDD Exit for HDD crossing of A1079 (DB IDs S16B-RX-2 or S16B-RX-3) - HDD Exit																												
Establish HDD Exit Pit Compound	22	44					2																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	66	198						3	3	3																		
Remove of onshore HDD Exit Compound	22	44															2											
Minor HDD crossing of Ancient Woodland Block (if Required) (DB ID S14-EOX-1) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compounds	22	44							2																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110								5																		
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section. Removal of Materials associated with Exit Pit Compound	22	22									1																	
Minor HDD crossing of A164 (DB ID S14-RX-1) - HDD Entry																												
Establish HDD Entry Pit Compound - Reuse from previous HDD in Section	22	22									1																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	44	132										3	3															
Remove of onshore HDD Entry Pit Compounds	22	44															2											
Haul Road Removal (includes removal of fencing) and re-formation of cable route	52	156															3	3										
TCC and access road Removal	52	156															3	3										
Plant Operators																												
Overall Plant Operators	364	8,216	17	26	16	16	16		31	29	31	30	22	22	14	26	26											
Section 1 Engineering Personnel																												
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	390	1,560	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4											
Average Total Employees per day			34	36	23	23	22	7	44	41	41	46	39	36	23	39	36	0	0	0								
Maximum Total Employee Two-way Movements Per Day (car/mail van)			48	72	46	46	44	14	88	82	82	90	76	70	46	76	70	0	0	0								

Section 14
Indicative Total Vehicle Movement Requirements

Activity	Month																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	11	29	20	20	6	3	65	87	56	69	22	8	4	49	40	0	0	0	
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	32	23	23	7	4	71	95	61	76	24	10	5	54	44	0	0	0	
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	0	2	0	4	1	1	2	2	0	1	2	3	0	0	0	
Average total two-way HGV Movements Per Day	14	33	24	23	9	4	75	96	62	78	26	10	6	56	47	0	0	0	
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	46	46	44	14	88	82	82	90	76	70	46	78	70	0	0	0	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	51	51	49	16	97	91	91	99	84	77	51	86	77	0	0	0	
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	113	75	74	58	20	172	187	153	177	110	87	57	142	124	0	0	0	

Substation Construction (Single Project Substations)
Average Materials and Welfare and Operation Plant Daily HGV Movements

[illegible]

Monthly Construction Plant Requirements

[illegible]

Substation Construction

Average Daily Personnel Requirements

[illegible]

Total Vehicle Movement Requirements (Substation)

Activity	Week																																													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	54	79	129	83	83	83	83	107	144	64	64	64	64	64	64	64	64	64	64	64	65	64	64	76	13	13	13	13	13	13	13	13	13	13	2	2	2	2	2	2	2	2	2	49	49	49
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	64	93	153	99	99	99	99	126	170	76	76	76	76	76	76	76	76	76	76	76	77	76	76	90	16	16	16	16	16	16	16	16	16	16	2	2	2	2	2	2	2	2	2	59	59	59
Construction Plant Average Total two-way HGV Movements (deliveries/Removals) Per Week	2	1	2	1	0	0	0	1	1	3	0	0	2	0	0	2	0	0	0	0	1	1	0	1	2	0	0	2	3	0	0	0	0	3	0	0	0	0	0	0	0	0	4	0	2	
Average total two-way HGV Movements Per Day	66	94	155	100	99	99	99	127	171	79	76	76	78	76	76	78	76	76	76	78	77	76	76	91	18	16	16	16	18	19	16	16	16	16	5	2	2	2	2	2	2	2	63	59	61	
Maximum Total Employee Two-way Movements Per Day (car/small van)	88	112	112	94	94	94	94	114	138	122	122	122	156	156	156	170	170	170	170	170	192	170	202	210	156	156	156	132	106	106	106	106	106	78	78	78	78	78	78	78	78	78	86	86	86	
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	97	124	124	104	104	104	104	126	162	135	135	135	172	172	172	187	187	187	187	187	212	187	223	231	172	172	172	146	117	117	117	117	117	86	86	86	86	86	86	86	86	86	86	86	86	86
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	163	216	279	204	203	203	203	263	323	214	211	211	290	248	248	266	263	263	263	263	290	264	299	322	190	188	188	164	136	133	133	133	133	91	88	88	88	88	88	88	88	88	88	158	154	156

Section 15

Indicative Average Materials and Welfare and Operation Plant Daily HGV Movements

Activity	Total Working Days	Total HGVs	Month																											
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
Establish TCCs and site accesses	44	190	4.3	4.3																										
Mobilisation of Welfare and Operation Plant to TCC	22	13	0.6																											
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip.	66	709		10.7	10.7	10.7																								
Cable Construction Works																														
Trench Excavation and duct installation	66	951					14.4	14.4	14.4																					
Trench Backfill with CBS and protective covers	66	665					10.1	10.1	10.1																					
Jointing Bay Excavation	66	43											0.7	0.7	0.7															
Jointing Bay Base Construction	66	43											0.7	0.7	0.7															
Pulling and connection of cables	66	96												1.5	1.5	1.5														
Backfill over Jointing Bays	66	24												0.4	0.4	0.4														
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S15-UUX-1) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds	22	95			4.3																									
Mobilisation of HDD Kit and Welfare to compounds	22	19			0.9																									
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	286				13.0																								
Demobilisation of HDD Kit and welfare - Reused at next HDD in section	22	0					0.0																							
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	0					0.0																							
Minor HDD crossing of SABIC / INEOS High Pressure Ethylene Pipeline (OB ID S15-UUX-2) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds - Reuse from previous HDD in Section	22	0					0.0																							
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0					0.0																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	286						13.0																						
Demobilisation of HDD Kit and welfare - Reused at next HDD in section	22	0							0.0																					
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	0							0.0																					
Minor HDD crossing of Proposed Permanent Substation Access for Hornsea Project 4 (OB ID S15-RX-3) - HDD Entry and Exit																														
Establish HDD Entry and Exit Pit Compounds - Reuse from previous HDD in Section	22	0						0.0																						
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0						0.0																						
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	22	286								13.0																				
Demobilisation of HDD Kit and welfare - Reused at next HDD in section. Removal of plant associated with Entry Pit Compound	22	17									0.8																			
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section. Removal of Materials associated with Entry Pit Compound	22	89									2.7																			
Minor HDD crossing of A164 (OB ID S14-RX-1) - HDD Exit																														
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section	22	0									0.0																			
Mobilisation of HDD Kit and Welfare to compounds - Reuse from previous HDD in Section	22	0									0.0																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month)	44	37										0.8	0.8																	
Demobilisation of HDD Kit and welfare - Reused at next HDD in section	22	2												0.1																
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	36														1.6														
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	44	709																												
Demobilisation of Welfare from TCC	22	13																												
TCC and access road Removal	44	190																												
Average Section Skip HGV Movements Per Day	352	123	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total HGVs per day			5.3	15.4	16.3	24.1	24.9	37.9	24.9	13.4	3.8	1.2	2.5	3.6	3.5	3.8	20.8	21.4	0.0	0.0										
Total two-way HGV movements per day			10.6	30.8	32.6	48.2	49.7	75.7	49.7	26.7	7.7	2.4	5.0	7.2	7.0	7.6	41.6	42.8	0.0	0.0										

Indicative Construction Plant Requirements

Plant	Month																													
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
D6 Dozer	1	2	2	1	2		2					2	2	2	3	3														
30T Excavator	2	3	3	2	3	3	3		2		2	3	3	3	3	3														
20T Dumper	3	3	3	3	4	4	4		2		2	4	4	4	4	4														
Smooth Drum vibrio road roller	1	2	2	1	1		1		1					1	2	2														
21T excavator	1	2	2	1	3	3	3		1		1	2	2	2	2	2														
5T Forward Tipping Dumper	1	2	2	1	3	3	3		1		1	2	2	2	2	2														
Loading shovel	1	2	2	1	3	3	3		2			1	1	3	3	3														
Trench Roller					2	2	2					1	1	1																
Tractor & fencing kit	1	1	1	1	1		1		1					1	1	1														
Tractor & trailer	1	2	2	1	2	2	2		1		1	1	1	1	2	2														
Tractor & Fuel bowser (or self propelled)	1	1	1	1	1	1	1		1		1	1	1	1	1	1														
Tractor & Water bowser (for dust suppression)	1	1	1	1	1	1	1		1		1	1	1	1	1	1														
Tractor & cable drum trailer												1	1	1																
Tractor & soil filler, roller, seeder																1	1													
Cement mixer																														
Mobile crane																														
Grader	1	2	2	1	1		1		1																					
Cable laying tracked crane																														
Cable winch												1	1	1																
Pre-cast concrete truck												1	1	1																
Mobile concrete pump												1	1	1																
Telehandler	1	2	2	1	3	2	3		1		1	1	1																	
Mobile self-contained wellfare unit	1	1	1	1	1	1	1		1		1	1	1	1	1	1														
Crawler Crane					1	1	1																							
Mobile generator deliveries (corrected for 2 per delivery)	2	2	2	1	2	2	2		2		2	3	3	3	2	2														
Temporary lighting deliveries (corrected for 8 per delivery)	1	2	2	2	3	2	3		1		1	2	2	2	2	2														
Road surface paver & roller	1	1																												
Pump deliveries (corrected for 4 per delivery)					1	1	1				1	2	2	1																
Total Plant Oresite In Section Per Month	21	31	30	20	38	31	38	0	21	0	16	30	30	31	30	30	0	0												
Total Deliveries / Removals	21	10	1	10	66	0	45	0	42	0	16	14	0	7	39	30	0	0												
Average Deliveries / Removals Per Day	1.0	0.5	0.0	0.5	2.5	0.0	2.0	0.0	1.9	0.0	0.7	0.6	0.0	0.3	1.6	1.4	0.0	0.0												
Average Total two-way HGV movements (Deliveries / Removals) Per Day	2	1	1	1	6	0	5	0	4	0	2	2	0	1	4	3	0	0												

Section 15

Indicative Average Daily Personnel Requirements

Number of Additional Site Personnel Per Activity (general labourers, drillers, drilling foremen, electricians, joiners, bricklayers etc)	Total Working Days	Total Person Days	Month																									
			13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
Establish TCC and site accesses	44	132	3	3																								
Site preparation including fencing, temporary drainage, haul road construction and topsoil strip	66	198		3	3	3																						
Cable Construction Works																												
Trench Excavation and duct installation	66	132					2	2	2																			
Trench Backfill with CBS and protective covers	66	132					2	2	2																			
Jointing Bay Excavation	66	132											2	2	2													
Jointing Bay Base Construction	66	132											2	2	2													
Pulling and connection of cables	66	198													3	3	3											
Backfill over Jointing Bays	66	132												2	2	2												
Minor HDD crossing of National Grid High Pressure Gas Main (OB ID S15-14RX-3) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compounds	22	44			2																							
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110				5																						
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	22					1																					
Minor HDD crossing of SABIC / INEOS High Pressure Ethylene Pipeline (OB ID S15-14RX-2) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compounds	22	22					1																					
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110						5																				
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	22							1																			
Minor HDD crossing of Proposed Permanent Substation Access for Hornsea Project 4 (OB ID S15-RX-3) - HDD Entry and Exit																												
Establish HDD Entry and Exit Pit Compounds - Reuse from previous HDD in Section	22	22							1																			
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	22	110								5																		
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section. Removal of Materials associated with Entry Pit Compound	22	22									1																	
Minor HDD crossing of A164 (OB ID S14-RX-3) - HDD Exit																												
Establish HDD Exit Pit Compound - Reuse from previous HDD in Section	22	22									1																	
HDD drilling works and ducting (assume working 12 hrs, 6 days a week, average 22 days a month. Includes admin of HDD compound)	44	88										2	2															
Remove of onshore HDD Entry and Exit Compounds - materials reused at next HDD in section	22	44														2												
Haul Road Removal (includes removal of fencing) and reinstatement of cable route	62	196																3	3									
TCC and access road Removal	62	196																	3	3								
Plant Operators																												
Overall Plant Operators	364	8,242	17	26	25	16	31	25	31		17		11	22	22	24	25	25										
Section 1 Engineering Personnel																												
Lead Engineer, 1 x Assistant Engineers, 1 x surveyors, 1 x Foreman	416	1,664	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4										
Average Total Employees per day			24	36	34	28	41	38	41	9	23	6	21	35	35	35	35	35	0	0								
Maximum Total Employee Two-way Movements Per Day (car/small van)			48	72	68	56	82	76	82	18	46	12	42	70	70	70	70	70	0	0								

Section 15
Indicative Total Vehicle Movement Requirements

Activity	Month																			
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Materials and Welfare and Operation Plant Daily HGV Movements Total Two-way HGV Movements Per Day	11	31	33	48	50	76	50	27	8	2	5	7	7	8	42	43	0	0		
Increase to account for Miscellaneous allowances presented in Page 11 of Materials Vehicle Movements Tab where the percentage increase is presented	12	34	36	53	54	82	54	29	9	3	6	8	8	9	45	47	0	0		
Construction Plant Average Total two-way HGV Movements (deliveries / Removals) Per Day	2	1	1	1	6	0	5	0	4	0	2	2	0	1	4	3	0	0		
Average total two-way HGV Movements Per Day	14	35	37	54	60	82	59	29	13	3	8	10	8	10	49	50	0	0		
Maximum Total Employee Two-way Movements Per Day (car/small van)	48	72	68	56	82	76	82	18	46	12	42	70	70	70	70	70	0	0		
Employee Two-Way Movements Plus additional 10% for Miscellaneous Movements	53	80	75	62	91	84	91	20	51	14	47	77	77	77	77	77	0	0		
Maximum Total HGV and Car/small van Two-way Movements Per Day (car/small van)	67	115	112	116	151	166	150	49	64	17	55	87	85	87	126	127	0	0		

Average Total Employee Two Way Movements per Day

Day	Average Total Employee Two Way Movements per Day
1	5
2	5
3	5
4	5
5	5
6	5
7	5
8	5
9	5
10	5
11	5
12	5
13	5
14	5
15	5
16	5
17	5
18	5
19	5
20	5
21	5
22	5
23	5
24	5
25	5
26	5
27	5
28	5
29	5
30	5
31	5
32	5
33	5
34	5
35	5
36	5
37	5
38	5
39	5
40	5
41	5
42	5
43	5
44	5
45	5

	Onshore Export Cable Corridor and Landfall (Daily HGV Trips)																									
																									Months	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Section 1 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25	49	91	54	114	112	97	116	96	104	76	72	73	11
Section 2 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	41	32	31	31	66	64	64	68	71	70	70	70	10
Section 3 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	41	31	30	9	4	4	71	66	68	73	73	72	10
Section 4 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	39	81	53	69	14	14	14	3	25	30	11	6	50
Section 5 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	39	42	58	37	18	18	88	76	74	77	75	75	10
Section 6 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23	48	32	43	64	6	96	68	75	83	82	72	70	11
Section 7 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	42	33	67	71	67	69	3	3	7	12	9	6	48
Section 8 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	38	28	27	81	80	82	14	3	24	29	11	6	62
Section 9 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	29	19	75	73	11	3	3	3	7	12	7	35	32
Section 10 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34	59	34	33	15	42	18	43	75	94	74	71	71	11
Section 16A (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	14	11	35	71	78	4	5	4	6	10	6	49
Section 15 (400kV) (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	35	37	55	60	82	59	29	13	3	8	10	8	10
Total Onshore Export Cable Corridor and Landfall HGV Trips (A)	0	0	0	0	0	0	0	0	0	0	0	0	194	460	474	537	659	573	602	517	486	564	549	491	498	314

Onshore Substation Zone 1 (Daily HGV trips)																										
	Months																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Section 16B (HVAC) to Zone 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	47	39	0	28	53	123	120	100	10	8	8	6	64
Section 17 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	39	30	1	22	37	8	37	62	69	21	12	6	51
Substation Zone 1 (HVAC)			66	89	158	103	102	102	102	129	177	79	76	76	78	76	76	76	76	76	76	78	77	76	91	
Total Onshore Substation Zone 1 HGV trips (B)	0	0	66	89	158	103	102	102	102	129	177	79	104	162	147	77	126	168	207	233	238	155	107	97	88	206

Onshore Substation Zone 4 (Daily HGV trips)																										
	Months																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Section 14 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	33	24	23	9	4	75	96	62	78	26	10	6	56
Section 16B (HVAC) to Zone 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	43	36	0	29	53	96	94	69	6	10	8	6	60
Substation Zone 4 (HVAC)	66	94	155	100	99	99	99	127	171	79	76	76	78	76	76	78	76	76	76	76	78	77	76	91	18	16
Total Onshore Substation Zone 4 HGV trips (C)	66	94	155	100	99	99	99	127	171	79	76	76	92	119	112	78	105	129	172	170	147	83	86	99	24	76

Onshore Substation Zone 1 and 4 (Daily HGV trips)																										
	Months																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Peak Onshore Substation HGV trips (B or C) per month (D)	66	94	155	100	158	103	102	127	171	129	177	79	104	162	147	78	126	168	207	233	238	155	107	99	88	206

Total HGV Trips Projects in-isolation																										
	Months																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Total HGV Trips (A + D)	66	94	155	100	158	103	102	127	171	129	177	79	298	622	621	615	785	741	809	750	724	719	656	590	586	520

Peak HGV trips per month

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Section 1 (HVAC)	19	69	86	91	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 2 (HVAC)	6	42	51	54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 3 (HVAC)	11	32	41	44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 4 (HVAC)	43	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 5 (HVAC)	11	40	49	52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 6 (HVAC)	26	42	57	63	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 7 (HVAC)	45	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 8 (HVAC)	54	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 9 (HVAC)	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 10 (HVAC)	23	35	59	66	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 16A (HVAC)	15	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 15 (400kV) (HVAC)	49	50	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Onshore Export Cable Corridor and Landfall HGV Trips (A)	302	310	343	370	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Onshore Substation Zone 1 (Daily HGV trips)

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Section 16B (HVAC) to Zone 1	50	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 17 (HVAC)	43	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Substation Zone 1 (HVAC)	18	16	16	18	19	16	16	16	16	5	2	2	2	2	2	2	2	2	63
Total Onshore Substation Zone 1 HGV trips (B)	111	16	16	18	19	16	16	16	16	5	2	2	2	2	2	2	2	2	63

Onshore Substation Zone 4 (Daily HGV trips)

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Section 14 (HVAC)	47	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 16B (HVAC) to Zone 4	46	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Substation Zone 4 (HVAC)	16	18	19	16	16	16	16	5	2	2	2	2	2	2	2	2	63	59	61
Total Onshore Substation Zone 4 HGV trips (C)	62	18	19	16	16	16	16	5	2	2	2	2	2	2	2	2	63	59	61

Onshore Substation Zone 1 and 4 (Daily HGV trips)

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Peak Onshore Substation HGV trips (B or C) per month (D)	111	18	19	18	19	16	16	16	16	5	2	2	2	2	2	2	63	59	63

Total HGV Trips Projects in-isolation

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Total HGV Trips (A + D)	413	328	362	388	19	16	16	16	16	5	2	2	2	2	2	2	63	59	63

Peak HGV trips per month

Annex 7

	Onshore Export Cable Corridor and Landfall (Daily LV Trips)																									
	Months																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Section 1 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	84	86	132	132	126	139	159	139	128	132	135	126
Section 2 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	51	51	73	73	73	93	110	110	110	110	77
Section 3 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	51	42	14	14	77	73	82	104	110	110	77
Section 4 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	97	73	91	16	16	16	51	49	84	77	51	82
Section 5 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	75	62	80	22	22	86	91	99	117	110	110	77
Section 6 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	97	124	95	119	130	102	135	124	152	168	168	154	154	121
Section 7 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	73	91	80	80	16	51	49	84	77	51	82
Section 8 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	51	91	86	86	22	51	55	91	77	51	82
Section 9 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	73	73	42	16	16	51	49	84	51	82	77
Section 10 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	97	124	95	95	86	97	108	77	135	143	154	154	154	121
Section 16A (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	53	53	51	73	91	14	51	14	42	77	51	80
Section 15 (400kv) (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	75	62	91	84	91	20	51	14	47	77	77	77
Total Onshore Export Cable Corridor and Landfall LV Trips (A)	0	0	0	0	0	0	0	0	0	0	0	0	671	968	829	849	1009	821	858	680	1009	971	1213	1206	1136	1079

Onshore Substation Zone 1 (Daily LV trips)

	Months																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Section 16B (HVAC to Zone 1)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	0	47	33	104	93	97	77	77	77	51	82
Section 17 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	44	77	27	58	27	91	80	49	77	51	86
Substation Zone 1 (HVAC)	97	124	124	104	104	104	104	126	152	135	135	135	172	172	172	187	187	187	187	187	212	187	223	231	172	172
Total Onshore Substation Zone 1 LV trips (B)	97	124	124	104	104	104	104	126	152	135	135	135	278	332	274	231	311	247	349	307	400	344	349	385	274	340

Onshore Substation Zone 4 (Daily LV trips)

	Months																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Section 14 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	51	49	16	97	91	91	99	84	77	51	86	
Section 16B (HVAC to Zone 4)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	0	47	33	104	93	77	42	77	77	51	82	
Substation Zone 4 (HVAC)	97	124	124	104	104	104	104	126	152	135	135	135	172	172	172	187	187	187	187	187	212	187	223	231	172	172	
Total Onshore Substation Zone 4 LV trips (C)	97	124	124	104	104	104	104	104	126	152	135	135	135	225	252	223	187	234	220	291	280	289	229	300	308	223	254

Onshore Substation Zone 1 and 4 (Daily LV trips)

	Months																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Peak Onshore Substation LV trips (B or C) per month (D)	97	124	124	104	104	104	104	126	152	135	135	135	278	332	274	231	311	247	349	307	400	344	349	385	274	340

Total LV Trips Projects in-isolation

	Months																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Total LV Trips (A + D)	97	124	124	104	104	104	104	126	152	135	135	135	949	1300	1103	1080	1320	1068	1207	987	1409	1315	1562	1591	1410	1419

Peak LV trips per month

Annex 7

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Section 1 (HVAC)	106	77	84	84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 2 (HVAC)	51	51	77	77	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 3 (HVAC)	77	51	77	77	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 4 (HVAC)	77	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 5 (HVAC)	88	51	77	77	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 6 (HVAC)	121	95	121	121	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 7 (HVAC)	77	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 8 (HVAC)	77	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 9 (HVAC)	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 10 (HVAC)	121	95	121	121	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 16A (HVAC)	51	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 15 (400kV) (HVAC)	77	77	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Onshore Export Cable Corridor and Landfall LV Trips (A)	923	497	557	557	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Onshore Substation Zone 1 (Daily LV trips)

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Section 16B (HVAC to Zone 1)	77	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 17 (HVAC)	77	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Substation Zone 1 (HVAC)	172	146	117	117	117	117	117	86	86	86	86	86	86	86	86	86	95	95	95
Total Onshore Substation Zone 1 LV trips (B)	326	146	117	117	117	117	117	86	86	86	86	86	86	86	86	86	95	95	95

Onshore Substation Zone 4 (Daily LV trips)

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Section 14 (HVAC)	77	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 16B (HVAC to Zone 4)	77	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Substation Zone 4 (HVAC)	172	146	117	117	117	117	117	86	86	86	86	86	86	86	86	86	95	95	95
Total Onshore Substation Zone 4 LV trips (C)	249	146	117	117	117	117	117	86	86	86	86	86	86	86	86	86	95	95	95

Onshore Substation Zone 1 and 4 (Daily LV trips)

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Peak Onshore Substation LV trips (B or C) per month (D)	326	146	117	117	117	117	117	86	86	86	86	86	86	86	86	86	95	95	95

Total LV Trips Projects in-isolation

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Total LV Trips (A + D)	1249	643	674	674	117	117	117	86	86	86	86	86	86	86	86	86	95	95	95

Peak LV trips per month

Annex 7

Total HGV Trips Projects in-isolation																								
	Months																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Total HGV Trips	66	94	155	100	158	103	102	127	171	129	177	79	298	622	621	615	785	741	809	750	724	719	656	590

Total LV Trips Projects in-isolation																								
	Months																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Total LV Trips	97	124	124	104	104	104	104	126	152	135	135	135	949	1300	1103	1080	1320	1068	1207	987	1409	1315	1562	1591

	Months																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Total Trips	163	218	279	204	262	207	206	253	323	264	312	214	1247	1922	1724	1695	2105	1809	2016	1737	2133	2034	2218	2181

Annex 7

Total HGV Trips Projects in-isolation																					
	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Total HGV Trips	586	520	413	328	362	388	19	16	16	16	16	5	2	2	2	2	2	2	63	59	63

Total LV Trips Projects in-isolation																					
	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Total LV Trips	1410	1419	1249	643	674	674	117	117	117	86	86	86	86	86	86	86	86	86	95	95	95

	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Total Trips	1996	1939	1662	971	1036	1062	136	133	133	102	102	91	88	88	88	88	88	88	158	154	158

Annex 8

	Onshore Export Cable Corridor and Landfall (Daily HGV Trips)																									
	Months																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Section 1 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25	49	91	54	114	112	97	116	96	104	76	72	73	11
Section 1 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25	49	61	42	61	59	45	36	35	29	29	28	29	7
Section 2 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	41	32	31	31	66	64	64	68	71	70	70	70	10
Section 2 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	41	32	31	31	24	22	22	22	22	25	27	8	
Section 3 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	41	31	30	9	4	4	71	66	68	73	73	72	10
Section 3 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	41	31	30	9	2	2	26	23	22	22	25	27	7
Section 4 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	39	81	53	69	14	14	14	3	25	30	11	6	50
Section 4 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	39	47	19	36	2	2	2	5	3	6	9	4	51
Section 5 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	39	42	58	37	18	18	88	76	74	77	75	75	10
Section 5 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	39	42	34	38	3	3	27	32	24	23	26	28	7
Section 6 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23	48	32	43	64	6	96	68	75	83	82	72	70	11
Section 6 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23	48	32	43	40	3	28	24	31	24	23	28	28	9
Section 7 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	42	33	67	71	67	69	3	3	7	12	9	6	48
Section 7 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	42	33	24	29	23	25	1	5	2	5	7	4	48
Section 8 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	38	28	27	81	80	82	14	3	24	29	11	6	62
Section 8 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	38	28	27	38	25	27	3	5	3	7	9	4	63
Section 9 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	29	19	75	73	11	3	3	3	7	12	7	35	32
Section 9 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	29	19	27	25	11	2	2	5	2	6	5	35	32
Section 10 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34	59	34	33	15	42	18	43	75	94	74	71	71	11
Section 10 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34	60	34	33	15	19	7	7	33	27	25	26	28	8
Section 16A (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	14	11	35	71	78	4	5	4	6	10	6	49
Section 16A (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	14	11	35	26	32	2	5	2	1	5	5	49
Section 16B (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	47	39	0	28	53	123	120	100	10	8	8	6	64
Section 16B (HVDC to Zone 4)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	43	35	0	29	8	33	27	29	1	4	7	4	61
Section 15 (400kV) (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	35	37	55	60	82	59	29	13	3	8	10	8	10
Section 15 (400kV) (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	35	37	29	25	22	24	5	13	2	2	5	7	8
Total Onshore Export Cable Corridor and Landfall HGV Trips (A)	0	0	0	0	0	0	0	0	0	0	0	0	416	1011	958	887	1098	853	977	821	829	737	732	704	734	736

Onshore Substation Zone 1 and 4 (Daily HGV trips)

	Months																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Section 14 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	33	24	23	9	4	75	96	62	78	26	10	6	56
Section 17 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	39	30	1	22	37	8	37	62	69	21	12	6	51
Substation Zone 4 (HVDC)	48	76	82	45	44	44	44	79	122	54	51	51	53	51	51	54	52	52	52	52	54	53	52	57	9	7
Substation Zone 1 (HVAC)	66	89	158	103	102	102	102	129	177	79	76	76	78	76	76	78	76	76	76	76	78	77	76	91	18	16
Total Onshore Substation Zone 1 HGV trips (B)	114	165	240	148	146	146	146	208	299	133	127	127	159	199	181	156	159	169	211	261	256	277	175	170	39	130

Onshore Substations Zone 4 only (Daily HGV trips)

	Months																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Section 14 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	33	24	23	9	4	75	96	62	78	26	10	6	56
Section 14 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	33	24	23	9	4	75	96	62	78	26	10	6	56
Substation Zone 4 (HVDC) for DBS East	48	76	82	45	44	44	44	79	122	54	51	51	53	51	51	54	52	52	52	52	54	53	52	57	9	7
Substation Zone 4 (HVDC) for DBS West	48	76	82	45	44	44	44	79	122	54	51	51	53	51	51	54	52	52	52	52	54	53	52	57	9	7
Total Onshore Substation Zone 4 HGV trips (C)	96	152	164	90	88	88	88	158	244	108	102	102	134	168	150	154	122	112	254	296	232	262	156	134	30	126

Onshore Substation Zone 1 and 4 (Daily HGV trips)

	Months																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Peak Onshore Substation HGV trips (B and C, or D) per month (D)	114	165	240	148	146	146	146	208	299	133	127	127	159	199	181	156	159	169	254	296	256	277	175	170	39	130

Total HGV Trips Projects concurrent

	Months																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Total HGV Trips (A + D)	114	165	240	148	146	146	146	208	299	133	127	127	575	1210	1139	1043	1257	1022	1231	1117	1085	1014	907	874	773	866

Peak HGV trips per month

Annex 8

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Section 1 (HVAC)	19	69	86	91	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 1 (HVDC)	16	59	76	81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 2 (HVAC)	6	42	51	54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 2 (HVDC)	5	42	51	55	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 3 (HVAC)	11	32	41	44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 3 (HVDC)	10	32	41	44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 4 (HVAC)	43	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 4 (HVDC)	42	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 5 (HVAC)	11	40	49	52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 5 (HVDC)	10	40	49	52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 6 (HVAC)	26	42	57	63	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 6 (HVDC)	26	42	58	63	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 7 (HVAC)	45	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 7 (HVDC)	45	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 8 (HVAC)	54	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 8 (HVDC)	54	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 9 (HVAC)	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 9 (HVDC)	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 10 (HVAC)	23	35	59	66	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 10 (HVDC)	22	35	60	66	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 16A (HVAC)	15	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 16A (HVDC)	15	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 16B (HVAC)	50	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 16B (HVDC to Zone 4)	46	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 15 (400kV) (HVAC)	49	50	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 15 (400kV) (HVDC)	50	50	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Onshore Export Cable Corridor and Landfall HGV Trips (A)	693	610	678	731	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Onshore Substation Zone 1 and 4 (Daily HGV trips)

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Section 14 (HVDC)	47	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 17 (HVAC)	43	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Substation Zone 4 (HVDC)	7	9	10	7	7	7	7	5	2	2	2	2	2	2	2	2	45	41	43
Substation Zone 1 (HVAC)	16	18	19	16	16	16	16	5	2	2	2	2	2	2	2	2	63	59	61
Total Onshore Substation Zone 1 HGV trips (B)	113	27	29	23	23	23	23	10	4	4	4	4	4	4	4	4	108	100	104

Onshore Substations Zone 4 only (Daily HGV trips)

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Section 14 (HVDC)	47	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 14 (HVDC)	47	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Substation Zone 4 (HVDC) for DBS East	7	9	10	7	7	7	7	5	2	2	2	2	2	2	2	2	45	41	43
Substation Zone 4 (HVDC) for DBS West	7	9	10	7	7	7	7	5	2	2	2	2	2	2	2	2	45	41	43
Total Onshore Substation Zone 4 HGV trips (C)	108	18	20	14	14	14	14	10	4	4	4	4	4	4	4	4	90	82	86

Onshore Substation Zone 1 and 4 (Daily HGV trips)

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Peak Onshore Substation HGV trips (B and C, or D) per month (D)	113	27	29	23	23	23	23	10	4	4	4	4	4	4	4	4	108	100	104

Total HGV Trips Projects concurrent

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Total HGV Trips (A + D)	806	637	707	754	23	23	23	10	4	4	4	4	4	4	4	4	108	100	104

Peak HGV trips per month

Annex 8

Onshore Export Cable Corridor and Landfall (Daily LV Trips)																											
	Months																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Section 1 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	84	86	132	132	126	119	126	108	108	132	135	126	106
Section 1 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	84	86	132	132	126	139	159	139	128	132	135	126	106
Section 2 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	51	51	73	73	73	73	73	93	93	110	77	51
Section 2 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	51	51	73	73	73	93	110	110	110	110	77	51
Section 3 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	51	42	14	14	77	73	73	73	93	110	77	77
Section 3 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	51	42	14	14	77	73	82	104	110	110	77	77
Section 4 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	97	73	91	16	16	16	51	16	49	77	51	82	77
Section 4 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	97	73	91	16	16	16	51	49	84	77	51	82	77
Section 5 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	75	62	80	22	22	86	91	80	80	93	110	77	88
Section 5 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	75	62	80	22	22	86	91	99	117	110	110	77	88
Section 6 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	97	124	95	119	130	102	135	124	135	130	130	137	154	121	121
Section 6 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	97	124	95	119	130	102	135	124	152	168	168	154	154	121	121
Section 7 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	73	91	80	80	16	51	16	49	77	51	82	77
Section 7 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	73	91	80	80	16	51	49	84	77	51	82	77
Section 8 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	51	91	86	86	22	51	22	55	77	51	82	77
Section 8 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	51	91	86	86	22	51	55	91	77	51	82	77
Section 9 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	73	73	42	16	16	51	16	49	51	82	77	0
Section 9 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	73	73	42	16	16	51	49	84	51	82	77	0
Section 10 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	97	124	95	95	86	97	108	77	135	124	117	137	154	121	121
Section 10 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	97	124	95	95	86	97	108	77	135	143	154	154	121	121	
Section 16A (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	53	53	51	73	91	14	51	14	9	42	51	80	51
Section 16A (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	53	53	51	73	91	14	51	14	42	77	51	80	51
Section 16B (HVAC to Zone 1)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	0	47	33	104	93	77	0	42	77	51	82	77
Section 16B (HVDC to Zone 4)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	0	47	33	104	93	97	77	77	77	51	82	77
Section 15 (400kV) (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	80	62	91	84	91	20	51	14	14	42	77	77	77
Section 15 (400kV) (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	75	62	91	84	91	20	51	14	47	77	77	77	77
Total Onshore Export Cable Corridor and Landfall LV Trips (A)	0	0	0	0	0	0	0	0	0	0	0	0	1448	2096	1765	1698	2112	1708	1924	1526	2122	1734	2138	2411	2374	2322	2000

Onshore Substation Zone 1 and 4 (Daily LV trips)

	Months																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Section 14 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	51	49	16	97	91	91	99	84	77	51	86	77
Section 17 (HVAC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	80	51	44	77	27	58	27	91	80	49	77	51	86	77
Substation Zone 4 (HVDC)	97	124	124	104	104	104	104	126	152	135	135	135	172	172	172	187	187	187	187	212	187	223	231	172	172	172	172
Substation Zone 1 (HVAC)	97	124	124	104	104	104	104	126	152	135	135	135	172	172	172	187	187	187	187	212	187	223	231	172	172	172	172
Total Onshore Substation Zone 1 LV trips (B)	194	248	248	208	208	208	208	252	304	270	270	270	450	504	446	469	500	417	529	492	606	553	579	616	446	516	498

Onshore Substations Zone 4 only (Daily LV trips)

	Months																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Section 14 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	33	24	23	9	4	75	96	62	78	26	10	6	56	47
Section 14 (HVDC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	33	24	23	9	4	75	96	62	78	26	10	6	56	47
Substation Zone 4 (HVDC) for DBS East	97	124	124	104	104	104	104	126	152	135	135	135	172	172	172	187	187	187	187	212	187	223	231	172	172	172	172
Substation Zone 4 (HVDC) for DBS West	97	124	124	104	104	104	104	126	152	135	135	135	172	172	172	187	187	187	187	212	187	223	231	172	172	172	172
Total Onshore Substation Zone 4 LV trips (C)	194	248	248	208	208	208	208	252	304	270	270	270	372	410	392	420	392	382	524	566	548	530	498	482	356	456	438

Onshore Substation Zone 1 and 4 (Daily LV trips)

	Months																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Peak Onshore Substation LV trips (B or C) per month (D)	194	248	248	208	208	208	208	252	304	270	270	270	450	504	446	469	500	417	529	566	606	553	579	616	446	516	498

Total LV Trips Projects concurrent

	Months																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Total LV Trips (A + D)	194	248	248	208	208	208	208	252	304	270	270	270	1898	2600	2211	2167	2612	2125	2453	2092	2728	2287	2717	3027	2820	2838	2498

Peak LV trips per month

Annex 8

	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Section 1 (HVAC)	77	84	84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 1 (HVDC)	77	84	84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 2 (HVAC)	51	77	77	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 2 (HVDC)	51	77	77	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 3 (HVAC)	51	77	77	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 3 (HVDC)	51	77	77	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 4 (HVAC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 4 (HVDC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 5 (HVAC)	51	77	77	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 5 (HVDC)	51	77	77	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 6 (HVAC)	95	121	121	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 6 (HVDC)	95	121	121	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 7 (HVAC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 7 (HVDC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 8 (HVAC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 8 (HVDC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 9 (HVAC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 9 (HVDC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 10 (HVAC)	95	121	121	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 10 (HVDC)	95	121	121	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 16A (HVAC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 16A (HVDC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 16B (HVAC to Zone 1)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 16B (HVDC to Zone 4)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 15 (400kV) (HVAC)	77	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 15 (400kV) (HVDC)	77	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Onshore Export Cable Corridor and Landfall LV Trips (A)	994	1114	1114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Onshore Substation Zone 1 and 4 (Daily LV trips)

	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Section 14 (HVDC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 17 (HVAC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Substation Zone 4 (HVDC)	146	117	117	117	117	117	86	86	86	86	86	86	86	86	86	95	95	95
Substation Zone 1 (HVAC)	146	117	117	117	117	117	86	86	86	86	86	86	86	86	86	95	95	95
Total Onshore Substation Zone 1 LV trips (B)	292	234	234	234	234	234	172	172	172	172	172	172	172	172	172	190	190	190

Onshore Substations Zone 4 only (Daily LV trips)

	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Section 14 (HVDC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Section 14 (HVDC)	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Substation Zone 4 (HVDC) for DBS East	146	117	117	117	117	117	86	86	86	86	86	86	86	86	86	95	95	95
Substation Zone 4 (HVDC) for DBS West	146	117	117	117	117	117	86	86	86	86	86	86	86	86	86	95	95	95
Total Onshore Substation Zone 4 LV trips (C)	292	234	234	234	234	234	172	172	172	172	172	172	172	172	172	190	190	190

Onshore Substation Zone 1 and 4 (Daily LV trips)

	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Peak Onshore Substation LV trips (B or C) per month (D)	292	234	234	234	234	234	172	172	172	172	172	172	172	172	172	190	190	190

Total LV Trips Projects concurrent

	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Total LV Trips (A + D)	1286	1348	1348	234	234	234	172	172	172	172	172	172	172	172	172	190	190	190

Peak LV trips per month

Total HGV Trips Projects concurrent

	Months																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Total HGV Trips	114	165	240	148	146	146	146	208	299	133	127	127	575	1210	1139	1043	1257	1022	1231	1117	1085	1014	907	874

Total LV Trips Projects concurrent

	Months																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Total LV Trips	194	248	248	208	208	208	208	252	304	270	270	270	1898	2600	2211	2167	2612	2125	2453	2092	2728	2287	2717	3027

	Months																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Total Trips	308	413	488	356	354	354	354	460	603	403	397	397	2473	3810	3350	3210	3869	3147	3684	3209	3813	3301	3624	3901

Total HGV Trips Projects concurrent

	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Total HGV Trips	773	866	806	637	707	754	23	23	23	10	4	4	4	4	4	4	4	4	108	100	104

Total LV Trips Projects concurrent

	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Total LV Trips	2820	2838	2498	1286	1348	1348	234	234	234	172	172	172	172	172	172	172	172	172	190	190	190

	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Total Trips	3593	3704	3304	1923	2055	2102	257	257	257	182	176	176	176	176	176	176	176	176	298	290	294

Postcode	Entry link	Number of rooms per postcode	Journey time (minutes)	Factor*	Percentage distribution	Entry link	Percentage distribution by point of entry
YO15	1	27	30	0.9	1.0%	1	1.0%
HU11	14	11	20	0.6	0.6%	14	0.6%
HU12	22	39	26	1.5	1.6%	22	1.6%
HU1	25	109	21	5.2	5.5%	25	5.5%
DN14	27	15	37.5	0.4	0.4%	27	11.6%
DN8	27	26	40	0.7	0.7%		
HU14	27	98	12	8.2	8.6%		
HU15	27	14	17	0.8	0.9%		
YO8	27	41	45	0.9	1.0%		
DN15	29	97	35	2.8	2.9%	29	16.4%
DN19	29	9	29	0.3	0.3%		
DN31	29	124	40	3.1	3.3%		
DN32	29	86	40	2.2	2.3%		
DN37	29	45	35	1.3	1.4%		
DN38	29	24	22	1.1	1.2%		
DN39	29	104	30	3.5	3.7%		
DN40	29	43	33.5	1.3	1.4%		
HU10	32	100	8	12.5	13.2%	32	20.1%
HU4	32	127	19.5	6.5	6.9%	34	9.1%
HU16	34	43	5	8.6	9.1%		
YO17	39	29	40	0.7	0.8%	39	1.5%
YO25	39	16	22	0.7	0.8%	66	20.1%
HU2	66	249	14	17.8	18.8%		
HU5	66	14	12	1.2	1.2%		
HU9	74	62	17	3.6	3.9%	74	3.9%
HU17	Beverley	41	5	8.2	8.7%	Beverley	8.7%
*Factor equates to number of rooms per minute of journey time							

Postcode	Entry link	Travel time (minutes)	Number of construction workers	Entry link	Number of workers per travel time minute	Percentage distribution of workers by entry link
YO15	1	55	968	1	17.6	1.00%
YO16	1	55	579		10.5	
HU18	10	24	335	10	14.0	1.28%
HU11	10	26	575		22.1	
HU12	22	35	1503	22	42.9	1.52%
DN2	27	55	996	27	18.1	22.23%
DN3	27	60	1701		28.4	
DN4	27	55	1869		34.0	
DN5	27	60	1664		27.7	
DN6	27	55	1286		23.4	
DN7	27	45	1100		24.4	
DN8	27	50	760		15.2	
DN9	27	55	641		11.7	
LS25	27	60	2168		36.1	
S64	27	60	1761		29.4	
S65	27	60	1107		18.5	
S66	27	60	1873		31.2	
S72	27	60	1128		18.8	
S81	27	60	1797		30.0	
WF1	27	55	1296		23.6	
WF10	27	45	2397		53.3	
WF11	27	45	444		9.9	
WF2	27	60	1302		21.7	
WF3	27	55	1304		23.7	
WF4	27	65	1837		28.3	
WF5	27	60	1357		22.6	
WF6	27	50	662		13.2	
WF7	27	55	1243		22.6	
WF8	27	45	1064		23.6	
WF9	27	60	1277		21.3	
DN15	29	35	1142	29	32.6	13.50%
DN16	29	35	1209		34.5	
DN17	29	45	1611		35.8	
DN18	29	22	475		21.6	
DN19	29	26	235		9.0	
DN20	29	30	608		20.3	
DN21	29	50	1658		33.2	
DN31	29	40	209		5.2	
DN32	29	45	1331		29.6	
DN33	29	45	496		11.0	
DN34	29	40	167		4.2	
DN35	29	50	1552		31.0	
DN36	29	55	428		7.8	
DN37	29	40	1052		26.3	
DN38	29	35	280		8.0	
DN40	29	35	328		9.4	
DN41	29	35	285		8.1	
LN2	29	55	1632		29.7	
LN7	29	40	338		8.5	
LN8	29	55	788		14.3	
HU13	30	14	1001	30	71.5	2.54%
HU14	31	12	247	31	20.6	0.73%
HU10	32	9	685	32	76.1	5.56%
HU3	32	16	634		39.6	
HU4	32	16	652		40.8	
HU16	34	4	458	34	114.5	10.15%
HU5	34	14	1834		131.0	
HU15	34	20	808		40.4	
HU7	45	12	1835	45	152.9	9.28%
HU8	45	16	1735		108.4	
YO11	39	55	888	39	16.1	3.85%
YO12	39	55	1090		19.8	
YO17	39	45	1193		26.5	
YO25	39	35	1334		38.1	
DN14	65	30	1514	65	50.5	11.26%
LS9	27	60	939		15.7	
LS23	65	60	455		7.6	
LS24	65	55	258		4.7	
YO10	65	45	242		5.4	
YO19	39	50	398		8.0	
YO23	65	50	828		16.6	
YO24	65	45	996		22.1	
YO30	65	50	803		16.1	
YO31	65	40	1713		42.8	
YO32	65	45	972		21.6	
YO41	65	35	349		10.0	
YO42	65	26	388		14.9	
YO43	65	18	526		29.2	
YO8	65	35	2653		75.8	
HU6	66	9	1233	66	137.0	4.86%
HU17	Beverley	6	1541	Beverley	256.8	9.12%
HU2	74	14	423	74	30.2	1.07%
HU9	75	18	1028	75	57.1	2.03%

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																													
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26			
Access 9	97	10	1	1%	1	1%	0	1	1	1	1							1	1																		
			10	1%	1	0%	0	1											1	1																	
			14	0%	0	1%	0	0													0	0															
			22	2%	1	2%	0	1													1	1	1	1	1	1	1	1	1								
			25	0%	0	5%	2	2													2	2	2	2	2	2	2				2	2					
			27	22%	15	12%	3	18													18																
			29	13%	9	16%	5	14													14																
			30	3%	2	0%	0	2													2																
			31	1%	0	0%	0	0													0																
			32	6%	4	20%	6	10													10																
			34	10%	7	9%	3	10													10																
			45	9%	6	0%	0	6													6																
			39	4%	3	2%	0	3													3																
			65	11%	8	0%	0	8													8																
			66	5%	3	20%	6	9													9																
			Beverley	9%	6	9%	3	9													9																
			74	1%	1	4%	1	2													2																
			75	2%	1	0%	0	1													1																
			Two-way daily LV movements									1	1	1	0	0	0	0	0	1	1	0	2	97	3	3	3	3	3	3	1	1	1	0	2	2	0

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Access 10 and 11	117	1	13	1%	1	1%	0	1	1	1							1		1	1														
		10		1%	1	0%	0	1									1		1	1														
		14		0%	0	1%	0	0												0	0													
		22		2%	1	2%	1	2												2	2	2	2	2	2	2	2	2	2	2				
		25		0%	0	5%	2	2												2	2	2	2	2	2	2	2	2	2	2		2	2	
		27		22%	18	12%	4	22												22														
		29		13%	11	16%	6	17												17														
		30		3%	2	0%	0	2												2														
		31		1%	1	0%	0	1													1													
		32		6%	5	20%	7	12													12													
		34		10%	8	9%	3	12													12													
		45		9%	8	0%	0	8													8													
		39		4%	3	2%	1	4													4													
		65		11%	9	0%	0	9													9													
		66		5%	4	20%	7	11													11													
		Beverley		9%	7	9%	3	11													11													
		74		1%	1	4%	1	2													2													
		75		2%	2	0%	0	2													2													
Two-way daily LV movements									1	1	1	0	0	0	0	0	1	1	0	2	117	4	4	4	4	4	4	2	2	2	0	2	2	0

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Access 13 and 14	168	1	55	1%	1	1%	0	2	2	2	2						2																	
		10		1%	2	0%	0	2										2																
		14		0%	0	1%	0	0											2															
		22		2%	2	2%	1	3																										
		25		0%	0	5%	3	3																										
		27		22%	26	12%	6	32																										
		29		13%	16	16%	8	24																										
		30		3%	3	0%	0	3																										
		31		1%	1	0%	0	1																										
		32		6%	7	20%	10	17																										
		34		10%	12	9%	5	17																										
		45		9%	11	0%	0	11																										
		39		4%	5	2%	1	5																										
		65		11%	13	0%	0	13																										
		66		5%	6	20%	10	16																										
		Beverley		9%	11	9%	4	15																										
		74		1%	1	4%	2	3																										
		75		2%	2	0%	0	2																										
Two-way daily LV movements									2	2	2	0	0	0	0	0	2	2	0	3	6	6	5	5	5	5	3	3	3	0	3	3	0	

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants	

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Access 17	91	1	56	1%	1	1%	0	1	1	1							1			1														
		10		1%	1	0%	0	1										1																
		14		0%	0	1%	0	0																										
		22		2%	1	2%	0	1																										
		25		0%	0	5%	2	2																										
		27		22%	14	12%	3	17																										
		29		13%	9	16%	4	13																										
		30		3%	2	0%	0	2																										
		31		1%	0	0%	0	0																										
		32		6%	4	20%	5	9																										
		34		10%	6	9%	2	9																										
		45		9%	6	0%	0	6																										
		39		4%	2	2%	0	3																										
		65		11%	7	0%	0	7																										
		66		5%	3	20%	5	9																										
		Beverley		9%	6	9%	2	8																										
		74		1%	1	4%	1	2																										
		75		2%	1	0%	0	1																										
Two-way daily LV movements									1	1	1	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	3	1	1	1	0	2	2	0

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Access 18	84	1	58	1%	1	1%	0	1	1	1							1			1														
		10		1%	1	0%	0	1									1																	
		14		0%	0	1%	0	0																										
		22		2%	1	2%	0	1													0	0												
		25		0%	0	5%	1	1																										
		27		22%	13	12%	3	16																										
		29		13%	8	16%	4	12																										
		30		3%	1	0%	0	1																										
		31		1%	0	0%	0	0																										
		32		6%	3	20%	5	8																										
		34		10%	6	9%	2	8																										
		45		9%	5	0%	0	5																										
		39		4%	2	2%	0	3																										
		65		11%	7	0%	0	7																										
		66		5%	3	20%	5	8																										
		Beverley		9%	5	9%	2	8																										
		74		1%	1	4%	1	2																										
		75		2%	1	0%	0	1																										
Two-way daily LV movements									1	1	1	0	0	0	0	0	1	1	0	2	3	3	3	3	3	3	3	3	3	0	1	1	0	

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Access 19 and 20	62	1	59	1%	0	1%	0	1	1	1	1						1			1														
		10		1%	1	0%	0	1									1			1														
		14		0%	0	1%	0	0											0	0	0													
		22		2%	1	2%	0	1																	1	1	1	1						
		25		0%	0	5%	1	1																										
		27		22%	10	12%	2	12																										
		29		13%	6	16%	3	9																										
		30		3%	1	0%	0	1																										
		31		1%	0	0%	0	0																										
		32		6%	2	20%	4	6																										
		34		10%	4	9%	2	6																										
		45		9%	4	0%	0	4																										
		39		4%	2	2%	0	2																										
		65		11%	5	0%	0	5																										
		66		5%	2	20%	4	6																										
		Beverley		9%	4	9%	2	6																										
		74		1%	0	4%	1	1																										
		75		2%	1	0%	0	1																										
Two-way daily LV movements									1	1	1	0	0	0	0	0	1	1	0	1	0	0	0	0	0	2	1	1	1	0	1	1	0	

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry					

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Access 23	31	62	1	1%	0	1%	0	0	0	0	0						0			0														
			10	1%	0	0%	0	0										0		0														
			14	0%	0	1%	0	0											0	0	0													
			22	2%	0	2%	0	0																		0	0	0	0					
			25	0%	0	5%	1	1																		1								
			27	22%	5	12%	1	6																										
			29	13%	3	16%	2	4																										
			30	3%	1	0%	0	1																										
			31	1%	0	0%	0	0																										
			32	6%	1	20%	2	3																										
			34	10%	2	9%	1	3																										
			45	9%	2	0%	0	2																										
			39	4%	1	2%	0	1																										
			65	11%	2	0%	0	2																										
			66	5%	1	20%	2	3																										
			Beverley	9%	2	9%	1	3																										
			74	1%	0	4%	0	1																										
			75	2%	0	0%	0	0																										
Two-way daily LV movements									0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	1	0

Access 41 or 42	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
99	35 or 63	1	1%	1	1%	0	1	1	1							1			1															
		10	1%	1	0%	0	1											1																
		14	0%	0	1%	0	0												1															
		22	2%	1	2%	0	2														0	0												
		25	0%	0	5%	2	2																											
		27	22%	15	12%	3	19																											
		29	13%	9	16%	5	14																											
		30	3%	2	0%	0	2																											
		31	1%	1	0%	0	1																											
		32	6%	4	20%	6	10																											
		34	10%	7	9%	3	10																											
		45	9%	6	0%	0	6																											
		39	4%	3	2%	0	3																											
		65	11%	8	0%	0	8																											
		66	5%	3	20%	6	9																											
		Beverley	9%	6	9%	3	9																											
		74	1%	1	4%	1	2																											
		75	2%	1	0%	0	1																											
Two-way daily LV movements									1	1	1	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2	0	0	0	0	2	2	0	

Access 43	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	91	35	1	% Split	Peak LVs	% Split	Peak LVs	1	1	1							1			1														
				1%	1	1%	0	1											1			1												
10				1	0%	0	1												1															
14				0%	0	1%	0	0												1			0	0										
22				2%	1	2%	0	1																				1	1	1	1			
25				0%	0	5%	2	2																										
27				22%	14	12%	3	17																										
29				13%	9	16%	4	13																										
30				3%	2	0%	0	2																										
31				1%	0	0%	0	0																										
32				6%	4	20%	5	9																										
34				10%	6	9%	2	9																										
45				9%	6	0%	0	6																										
39				4%	2	2%	0	3																										
65				11%	7	0%	0	7																										
66				5%	3	20%	5	9																										
Beverley				9%	6	9%	2	8																										
74				1%	1	4%	1	2																										
75	2%	1	0%	0	1																													
Two-way daily LV movements									1	1	1	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	3	1	1	1	0	2	2	0

Access 24	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	91	1	62	% Split	Peak LVs	% Split	Peak LVs	1	1	1							1			1														
				1%	1	1%	0	1												1														
		10		1% <th>1</th> <td></td> <th>0</th> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th>1</th> <td></td> <th>1</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1		0	1										1		1														
		14		0% <th>0</th> <td></td> <th>0</th> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th>1</th> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	0		0	0										1																
		22		2% <th>1</th> <td></td> <th>2</th> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td></td> <td></td> <td></td>	1		2	1																		1	1	1	1					
		25		0% <th>0</th> <td></td> <th>5</th> <td>2</td> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <th>0</th> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	0		5	2	0												0	0					1							
		27		22% <th>14</th> <td></td> <th>12</th> <td>3<td>11</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><th></th><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td><td></td><td></td><td></td><td></td><td>0</td><td>0</td><td></td></td>	14		12	3 <td>11</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td>0</td> <td></td>	11																	0					0	0		
		29		13% <th>9</th> <td></td> <th>16</th> <td>4<td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><th></th><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td>	9		16	4 <td>7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	7																									
		30		3% <th>0</th> <td></td> <th>0</th> <td>0<td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><th></th><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td>	0		0	0 <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1																									
		31		0% <th>0</th> <td></td> <th>0</th> <td>0<td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><th></th><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td>	0		0	0 <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1																									
		32		6% <th>4</th> <td></td> <th>20%</th> <td>5</td> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	4		20%	5	4																									
		34		10% <th>6</th> <td></td> <th>9%</th> <td>2</td> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	6		9%	2	5																									
		45		9% <th>6</th> <td></td> <th>0%</th> <td>0</td> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	6		0%	0	4																									
		39		4% <th>2</th>	2		2%	0	2																									
		65		11% <th>7</th> <td></td> <th>0%</th> <td>0</td> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	7		0%	0	5																									
		66		5% <th>3</th> <td></td> <th>20%</th> <td>5</td> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	3		20%	5	4																									
		Beverley		9% <th>6</th> <td></td> <th>9%</th> <td>2</td> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	6		9%	2	5																									
		74		1% <th>1</th> <td></td> <th>4%</th> <td>1</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1		4%	1	1																									
		75		2% <th>1</th> <td></td> <th>0%</th> <td>0</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1		0%	0	1																									
				Two-way daily LV movements					1	1	1	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	1	1	1	0	0	0	0

Access 25 and 26	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
				% Split	Peak LVs	% Split	Peak LVs																												
104	71	1	1%	1	1%	0	1	1	1	1							1			1															
		10	1%	1	0%	0	1											1																	
		14	0%	0	1%	0	0															0	0												
		22	2%	1	2%	0	2																				2	2	2	2					
		25	0%	0	5%	2	2																				2								
		27	22%	16	12%	4	20																									5	5		
		29	13%	10	16%	5	15																												
		30	3%	2	0%	0	2																												
		31	1%	1	0%	0	1																												
		32	6%	4	20%	6	10																												
		34	10%	7	9%	3	10																												
		45	9%	7	0%	0	7																												
		39	4%	3	2%	0	3																												
		65	11%	8	0%	0	8																												
		66	5%	4	20%	6	10																												
		Beverley	9%	7	9%	3	9																												
		74	1%	1	4%	1	2																												
		75	2%	1	0%	0	1																												
Two-way daily LV movements									1	1	1	0	0	0	0	0	1	1	0	2	0	0	0	0	0	3	2	2	2	0	5	5	0		

Access 44	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
91	35	10	1%	1	0%	0	1																											
		14	0%	0	1%	0	0																											
		22	2%	1	2%	0	1																											
		25	0%	0	5%	2	2																											
		27	22%	14	12%	3	17																											
		29	13%	9	16%	4	13																											
		30	3%	2	0%	0	2																											
		31	1%	0	0%	0	0																											
		32	6%	4	20%	5	9																											
		34	10%	6	9%	2	9																											
		45	9%	6	0%	0	6																											
		39	4%	2	2%	0	3																											
		65	11%	7	0%	0	7																											
		66	5%	3	20%	5	9																											
		Beverley	9%	6	9%	2	8																											
		74	1%	1	4%	1	2																											
		75	2%	1	0%	0	1																											
		Two-way daily LV movements									1	1	1	0	0	0	0	0	1	1	0	2	0	0	0	0	0	3	1	1	1	0	2	2

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Access 41 or 42 (Onshore substation)	231		35 or 63	1	1%	2	1%	2	3	3	3	3						3			3													
		10		1%	2	0%	0	2											2		2													
		14		0%	0	1%	1	1														2												
		22		2%	2	2%	3	5																										
		25		0%	0	5%	9	9																										
		27		22%	36	12%	19	55																										
		29		13%	22	16%	26	48																										
		30		3%	4	0%	0	4																										
		31		1%	1	0%	0	1																										
		32		6%	9	20%	33	42																										
		34		10%	16	9%	15	31																										
		45		9%	15	0%	0	15																										
		39		4%	6	2%	2	9																										
		65		11%	18	0%	0	18																										
		66		5%	8	20%	32	40																										
		Beverley		9%	15	9%	14	29																										
		74		1%	2	4%	6	8																										
		75		2%	3	0%	0	3																										
Two-way daily LV movements									3	3	3	0	0	0	0	0	3	2	0	5	1	1	0	0	0	0	9	0	0	0	0	9	9	0

Access 44 (Onshore substation)	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	231	1	51	% Split	Peak LVs	% Split	Peak LVs																											
		10		1%	2	1%	1	2	2	2	2						2			2														
		11		1%	2	0%	0											2																
		14		0%	0	1%	0	0										2		2														
		22		2%	2	2%	1	4													0	0					4	4	4	4				
		25		0%	0	5%	4	4																			4							
		27		22%	36	12%	8	44																			4				4			
		29		13%	22	16%	11	33																										
		30		3%	4	0%	0	4																										
		31		1%	1	0%	0	1																										
		32		6%	9	20%	14	23																										
		34		10%	16	9%	6	23																										
		45		9%	15	0%	0	15																										
		39		4%	6	2%	1	7																										
		65		11%	18	0%	0	18																										
		66		5%	8	20%	14	22																										
		Beverley		9%	15	9%	6	21																										
		74		1%	2	4%	3	4																										
		75		2%	3	0%	0	3																										
				Two-way daily LV movements					2	2	2	0	0	0	0	0	2	2	0	4	0	0	0	0	0	0	7	4	4	4	0	4	4	0

	Peak daily LV trips	Entry Link	Destination Link	Links																																										
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75			
Access 1 and 2	106	1	6																																											
		10																																												
		14																																												
		22																																												
		25																																												
		27		20	20		20	20	20	20	20	20			20							20	20	20	20	20	20	20																		
		29				15	15	15	15	15	15	15			15							15	15	15	15	15	15	15																		
		30					2	2	2	2	2	2			2							2	2	2	2	2	2	2																		
		31						1	1	1	1	1			1							1	1	1	1	1	1	1																		
		32							11	11	11	11			11							11	11	11	11	11	11	11																		
		34										10	10		10							10	10	10	10	10	10	10																		
		45																																												
		39														3						3	3	3	3	3	3	3																		
		65																				8	8	8	8	8	8	8																		
		66														10						10	10	10	10	10	10	10																		
		Beverly																					10	10	10	10	10	10																		
		74																					2	2	2	2	2	2																		
75																																														
				20	20	15	37	38	48	48	59	59	0	0	69	3	0	0	0	0	69	69	69	69	100	90	90	12	0	0	12	8	0	0	0	0	8	10	0	0	0	0	2	2	2	4

	Peak daily LV trips	Entry Link	Destination Link	Links																																															
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75								
Access 5 and 6	110	1	8																																																
		10																																																	
		14																																																	
		22																																																	
		25																																																	
		27		21	21		21	21	21	21	21	21				21						21	21	21	21	21	21	21																							
		29				16	16	16	16	16	16	16				16						16	16	16	16	16	16	16																							
		30					2	2	2	2	2	2				2						2	2	2	2	2	2	2																							
		31						1	1	1	1	1	1				1					1	1	1	1	1	1	1																							
		32														11	11	11	11	11		11	11	11	11	11	11	11																							
		34														11						11	11	11	11	11	11	11																							
		45																																																	
		39															3						7																												
		65																					3																												
		66																					9																												
		Beverly																					10	10	10	10																									
		74																					2																												
75																				2																															
				21	21	16	39	39	50	50	61	61	0	0	71	3	4	0	0	0	71	71	71	71	104	93	93	12	0	0	12	9	0	0	0	0	9	10	0	0	0	0	2	2	2	4					

[illegible]

	Peak daily LV trips	Entry Link	Destination Link	Links																																									
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75		
Access 9	97	1	10																																										
		10																																											
		14																																											
		22																																											
		25																																											
		27		18	18		18	18	18	18	18	18			18							18	18	18	18	18	18	18																	
		29				14	14	14	14	14	14	14			14							14	14	14	14	14	14	14																	
		30					2	2	2	2	2	2			2							2	2	2	2	2	2																		
		31						0	0	0	0	0			0							0	0	0	0	0	0																		
		32							10	10	10	10			10							10	10	10	10	10	10	10																	
		34									10	10			10							10	10	10	10	10	10																		
		45										10	10			10						10	10	10	10	10	10																		
		39														3										6																			
		65																							8	8	8	8																	
		66													9							9	9	9	9	9	9																		
		Beverley																					9	9	9	9	9																		
		74																2								9																		2	2
		75																1								1																			1
				18	18	14	34	35	44	44	54	54	0	0	63	3	3	0	0	0	63	63	63	63	92	82	82	11	0	0	11	8	0	0	0	8	9	0	0	0	0	2	3		

	Peak daily LV trips	Entry Link	Destination Link	Links																																								
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75	
Access 10 and 11	117	1	13																																									
		10																																										
		14																																										
		22																																										
		25																																										
		27		22	22		22	22	22	22	22	22			22							22	22	22	22	22	22	22																
		29				17	17	17	17	17	17	17			17							17	17	17	17	17	17	17																
		30					2	2	2	2	2	2			2							2	2	2	2	2	2	2																
		31						1	1	1	1	1			1							1	1	1	1	1	1	1																
		32							12	12	12	12			12							12	12	12	12	12	12	12																
		34									12	12			12							12	12	12	12	12	12	12																
		45																																										
		39														4									8	4	4	4																
		65																							9	9	9	9				4												
		66													11							11	11	11	11	11	11	11									9		11					
		Beverley																							11	11	11																	
		74																2							2																	2	2	
		75																2							2																	2	2	
				22	22	17	41	42	53	53	65	65	0	0	76	4	4	0	0	0	76	76	76	76	111	99	99	13	0	0	13	9	0	0	0	9	11	0	0	0	0	2	4	

	Peak daily LV trips	Entry Link	Destination Link	Links																																											
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75				
Access 13 and 14	168	1	55																					2	2																						
		10																							2	2																					
		14																							0	0																					
		22																							3	3																					
		25																							3	3																					
		27		32	32		32	32	32	32	32	32			32							32	32	32	32		32	32																			
		29				24	24	24	24	24	24	24										24	24	24	24		24	24																			
		30					3	3	3	3	3	3			3						3	3	3	3		3	3																				
		31						1	1	1	1	1			1						1	1	1	1		1	1																				
		32							17	17	17	17			17						17	17	17	17		17	17																				
		34									17	17			17						17	17	17	17		17	17																				
		45																																													
		39														5										11																					
		65																								5	5	5			5																
		66													16							16	16	16	16		13	13	13			13	13				13		16								
		Beverley																								15	15																3	3			
		74															3	3	3	3			3	3		3	3																				
		75															2	2	2	2			2	2		2	2																				
																										9	168	148	19	0	0		19	13	0	0	0	0	13	16	0	0	0	0	3	6	

[illegible][illegible][illegible]

	Peak daily LV trips	Entry Link	Destination Link	Links																																															
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75								
Access 21 and 22	62	1	60																					1	1	1	1			1																					
		10																							1	1	1	1																							
		14																							0	0	0	0			0																				
		22																1	1													1	1												1	1					
		25																1	1																																
		27		12	12		12	12	12	12	12	12																				1	1																		
		29				9	9	9	9	9	9	9																				1	1																		
		30					1	1	1	1	1	1																				9	9																		
		31							0	0	0	0																					1	1																	
		32							6	6	6	6																					0	0																	
		34																															6	6																	
		45											6	6																																					
		39																	4	4	4				4	4																									
		65																2																																	
		66																																																	
		Beverley																																5	5																
		74																																6	6																
		75																	1	1													1	1																	
																			1	1													1	1																	
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1													1	1																				
																1	1																																		

	Peak daily LV trips	Entry Link	Destination Link	Links																																																																										
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75																																			
Access 23	31	62	1																							0	0	0	0			0	0	0																																												
			10																								0	0	0	0			0	0	0																																											
			14																								0	0	0	0			0	0	0																																											
			22																								0	0	0	0			0	0	0																																											
			25																0	0							0	0	0	0			0	0	0																																											
			27	6	6		6	6	6	6	6	6	6	6					1	1																							0	0																																		
			29			4	4	4	4	4	4	4	4																																																																	
			30				1	1	1	1	1	1	1	1																																																																
			31					0	0	0	0	0	0	0																																																																
			32						3	3	3	3	3	3																																																																
			34																																																																											
			45																																																																											
			39																							2	2																																																			
			65																																																																											
			66																																																																											
			Beverley																																																																											
			74																1	1																																																										
			75																	0	0																																																									
							6	6	4	11	11	14	14	17	17	0	0	0	1	2	4	0	0	0	0	2	2	1	1	1	1	0	0	1	2	31	26	0	2	7	0	0	0	0	2	2																																

	Peak daily LV trips	Entry Link	Destination Link	Links																																											
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75				
Access 41 or 42	99	1	35 or 63									1	1	1	1							1	1	1	1	1	1	1					1														
		10											1	1	1	1							1	1	1	1	1	1	1					1													
		14											0	0	0	0							0	0	0	0	0	0	0																		
		22											2	2	2	2			2	2																											
		25											2	2	2	2			2	2																											
		27			19	19		19	19	19	19	19	19	19	19	19																															
		29																																													
		30				14	14	14	14	14	14	14	14	14	14	14																															
		31				2	2	2	2	2	2	2	2	2	2	2																															
		32						1	1	1	1	1	1	1	1	1																															
		34									10	10	10	10	10	10	10																														
		45												10	10	10	10																														
		39												6	6	6	6			6	6																										
		65												3	3	3	3		3																												
		66												8	8	8	8																														
		Beverley												9	9	9	9																														
		74												9	9	9	9	9																													
75											2	2	2	2	2		2	2																													
											1	1	1	1																																	
											19	19	19	19	11	3	13	13	0	0	2	2	2	2	2	2	2	0	0	0	0	3	0	99	3	8	22	3	0	0	0	0	5	6			

[illegible][illegible]

[illegible][illegible][illegible][illegible]

[illegible]

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Access 9	194	10	1	1%	1	1%	1	2	2	2	2							2	2	2														
			10	1%	2	0%	0	2											2	2	2													
			14	0%	0	1%	0	0												0	0													
			22	2%	2	2%	1	3												3	3	3	3	3	3	3	3	3	3	3				
			25	0%	0	5%	3	3												3	3	3	3	3	3	3								
			27	22%	30	12%	7	37												37														
			29	13%	18	16%	10	28												28														
			30	3%	3	0%	0	3												3														
			31	1%	1	0%	0	1												1														
			32	6%	8	20%	12	19												19														
			34	10%	14	9%	5	19												19														
			45	9%	13	0%	0	13												13														
			39	4%	5	2%	1	6												6														
			65	11%	15	0%	0	15												15														
			66	5%	7	20%	12	18												18														
			Beverley	9%	12	9%	5	17												17														
			74	1%	1	4%	2	4												4														
75	2%	3	0%	0	3												3																	
Two-way daily LV movements									2	2	2	0	0	0	0	0	2	2	0	4	194	7	6	6	6	6	6	3	3	3	0	3	3	0

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Access 10 and 11	227	13	1	1%	2	1%	1	2	2	2	2							2																
			10	1%	2	0%	0	2											2															
			14	0%	0	1%	0	0																										
			22	2%	2	2%	1	4												4	4	4	4	4	4	4	4	4	4	4				
			25	0%	0	5%	4	4												4	4	4	4	4	4	4								
			27	22%	35	12%	8	43												43														
			29	13%	21	16%	11	33												33														
			30	3%	4	0%	0	4												4														
			31	1%	1	0%	0	1												1														
			32	6%	9	20%	14	23												23														
			34	10%	16	9%	6	22												22														
			45	9%	15	0%	0	15												15														
			39	4%	6	2%	1	7												7														
			65	11%	18	0%	0	18												18														
			66	5%	8	20%	14	21												21														
			Beverley	9%	14	9%	6	20												20														
			74	1%	2	4%	3	4												4														
75	2%	3	0%	0	3												3																	
Two-way daily LV movements									2	2	2	0	0	0	0	0	2	2	0	4	227	8	7	7	7	7	7	4	4	4	0	4	4	0

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																											
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Access 13 and 14	322	55	1	1%	2	1%	1	3	3	3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
			10	1%	3	0%	0	3											3		3														
			14	0%	0	1%	1	1															1	1											
			22	2%	3	2%	2	5															5	5	5	5	5	5	5	5	5				
			25	0%	0	5%	5	5															5	5	5	5	5	5							
			27	22%	50	12%	11	61															5	5	5	5	5	5							
			29	13%	30	16%	16	46															5	5	5	5	5	5							
			30	3%	6	0%	0	6																											
			31	1%	2	0%	0	2																											
			32	6%	13	20%	19	32																											
			34	10%	23	9%	9	32																											
			45	9%	21	0%	0	21																											
			39	4%	9	2%	1	10																											
			65	11%	25	0%	0	25																											
			66	5%	11	20%	19	30																											
			Beverley	9%	21	9%	8	29																											
			74	1%	2	4%	4	6																											
75	2%	5	0%	0	5																														
Two-way daily LV movements									3	3	3	0	0	0	0	0	3	3	0	6	11	11	10	10	10	10	10	5	5	5	0	5	5	0	

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																											
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Access 15 and 16	182	73	1	1%	1	1%	1	2	2	2	2							2																	
			10	1%	2	0%	0	2											2																
			14	0%	0	1%	0	0																											
			22	2%	2	2%	1	3																											
			25	0%	0	5%	3	3																											
			27	22%	28	12%	6	35																											
			29	13%	17	16%	9	26																											
			30	3%	3	0%	0	3																											
			31	1%	1	0%	0	1																											
			32	6%	7	20%	11	18																											
			34	10%	13	9%	5	18																											
			45	9%	12	0%	0	12																											
			39	4%	5	2%	1	6																											
			65	11%	14	0%	0	14																											
			66	5%	6	20%	11	17																											
			Beverley	9%	12	9%	5	16																											
			74	1%	1	4%	2	3																											
75	2%	3	0%	0	3																														
				Two-way daily LV movements				2	2	2	0	0	0	0	0	0	2	2	0	3	0	0	0	0	0	0	6	3	3	3	0	3	3	0	

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Access 17	182	56	1	1%	1	1%	1	2	2	2	2						2			2														
			10	1%	2	0%	0	2											2		2													
			14	0%	0	1%	0	0																										
			22	2%	2	2%	1	3																										
			25	0%	0	5%	3	3																										
			27	22%	28	12%	6	35																										
			29	13%	17	16%	9	26																										
			30	3%	3	0%	0	3																										
			31	1%	1	0%	0	1																										
			32	6%	7	20%	11	18																										
			34	10%	13	9%	5	18																										
			45	9%	12	0%	0	12																										
			39	4%	5	2%	1	6																										
			65	11%	14	0%	0	14																										
			66	5%	6	20%	11	17																										
			Beverley	9%	12	9%	5	16																										
			74	1%	1	4%	2	3																										
			75	2%	3	0%	0	3																										
Two-way daily LV movements									2	2	2	0	0	0	0	0	2	2	0	3	0	0	0	0	0	0	6	3	3	3	0	3	3	0

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Access 18	166	58	1	1%	1	1%	0	2	2	2	2						2																	
			10	1%	1	0%	0	1											1		1													
			14	0%	0	1%	0	0																										
			22	2%	2	2%	1	3														0	0											
			25	0%	0	5%	3	3														3	3	3	3	3	3	3	3	3	3			
			27	22%	26	12%	6	32														3	3	3	3	3	3	3	3	3	3			
			29	13%	16	16%	8	24														3	3	3	3	3	3	3	3	3	3			
			30	3%	3	0%	0	3																										
			31	1%	1	0%	0	1																										
			32	6%	6	20%	10	16																										
			34	10%	12	9%	5	16																										
			45	9%	11	0%	0	11																										
			39	4%	4	2%	1	5																										
			65	11%	13	0%	0	13																										
			66	5%	6	20%	10	16																										
			Beverley	9%	11	9%	4	15																										
			74	1%	1	4%	2	3																										
			75	2%	2	0%	0	2																										
Two-way daily LV movements									2	2	2	0	0	0	0	0	2	1	0	3	6	6	5	5	5	5	5	5	5	0	3	3	0	

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																											
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Access 19 and 20	123	59	1	1%	1	1%	0	1	1	1	1							1																	
			10	1%	1	0%	0	1											1																
			14	0%	0	1%	0	0												1															
			22	2%	1	2%	1	2																											
			25	0%	0	5%	2	2													0	0	0												
			27	22%	19	12%	4	23																			2	2	2	2					
			29	13%	12	16%	6	18																			2								
			30	3%	2	0%	0	2																											
			31	1%	1	0%	0	1																											
			32	6%	5	20%	7	12																											
			34	10%	9	9%	3	12																											
			45	9%	8	0%	0	8																											
			39	4%	3	2%	1	4																											
			65	11%	10	0%	0	10																											
			66	5%	4	20%	7	12																											
			Beverley	9%	8	9%	3	11																											
			74	1%	1	4%	1	2																											
			75	2%	2	0%	0	2																											
Two-way daily LV movements									1	1	1	0	0	0	0	0	0	1	1	0	3	0	0	0	0	0	0	4	2	2	2	0	2	2	0

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																												
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26		
Access 23	62	62	1	1%	0	1%	0	1	1	1	1																									
			10	1%	1	0%	1	0																												
			14	0%	0	1%	0	0																												
			22	2%	1	2%	0	1																												
			25	0%	0	5%	1	1																												
			27	22%	10	12%	2	12																												
			29	13%	6	16%	3	9																												
			30	3%	1	0%	0	1																												
			31	1%	0	0%	0	0																												
			32	6%	2	20%	4	6																												
			34	10%	4	9%	2	6																												
			45	9%	4	0%	0	4																												
			39	4%	2	2%	0	2																												
			65	11%	5	0%	0	5																												
			66	5%	2	20%	4	6																												
			Beverley	9%	4	9%	2	6																												
			74	1%	0	4%	1	1																												
			75	2%	1	0%	0	1																												
							Two-way daily LV movements				1	1	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	2	1	1	1	0	1	1	0

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																													
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26			
Access 41 or 42	194	35 or 63	1	1%	1	1%	2	2	2		5	6				2		2																			
			10	1%	2	0%	2											2		2																	
			14	0%	0	1%	0	0																													
			22	2%	2	2%	1	3																													
			25	0%	0	5%	3	3																													
			27	22%	30	12%	7	37																			3						3	3			
			29	13%	18	16%	10	28																													
			30	3%	3	0%	0	3																													
			31	1%	1	0%	0	1																													
			32	0%	8	20%	12	18																													
			34	10%	14	9%	5	19																													
			45	9%	13	0%	0	13																													
			39	4%	5	2%	1	6																													
			65	11%	15	0%	0	15																													
			66	5%	7	20%	12	18																													
			Beverley	9%	12	9%	5	17																													
			74	1%	1	4%	2	4																													
			75	2%	3	0%	0	3																													
							Two-way daily LV movements					2	2	2	0	0	0	0	0	2	2	0	4	0	0	0	0	0	0	3	0	0	0	0	3	3	0

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																															
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26					
Access 43	182	35	1	1%	1	0%	2	2	2								2		2																				
			10	1%	2	0%	1	2											2																				
			14	0%	0	1%	0	0																															
			22	2%	2	2%	1	3												2																			
			25	0%	0	5%	3	3																															
			27	22%	28	12%	6	35																															
			29	13%	17	16%	9	26																															
			30	3%	3	0%	0	3																															
			31	1%	1	0%	0	1																															
			32	6%	7	20%	11	18																															
			34	10%	13	9%	5	18																															
			45	9%	12	0%	0	12																															
			39	4%	5	2%	1	6																															
			65	11%	14	0%	0	14																															
			66	5%	6	20%	11	17																															
			Beverley	9%	12	9%	5	16																															
			74	1%	1	4%	2	3																															
			75	2%	3	0%	0	3																															
							Two-way daily LV movements					2	2	2	0	0	0	0	0	0	2	2	0	3	0	0	0	0	0	0	0	6	3	3	3	0	3	3	0

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																											
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Access 24	182	62	1	1%	1	1%	1	2	2	2	2							2			2														
			10	1%	2	0%	0	1												1		1													
			14	0%	0	1%	0	0	0																										
			22	2%	2	2%	1	2	0																										
			25	0%	0	5%	3	1																											
			27	22%	28	12%	6	22																											
			29	13%	17	16%	9	15																											
			30	3%	3	0%	0	2																											
			31	1%	1	0%	0	1																											
			32	6%	7	20%	11	8																											
			34	10%	13	9%	5	11																											
			45	9%	12	0%	0	8																											
			39	4%	5	2%	1	4																											
			65	11%	14	0%	0	10																											
			66	5%	6	20%	11	8																											
				Beverley	9%	12	9%	5	10																										
				74	1%	1	4%	2	2																										
				75	2%	3	0%	0	2																										
				Two-way daily LV movements					2	2	2	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	3	2	2	2	0	1	1	0	

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Access 25 and 26	208	71	1	1%	1	1%	1	2	2	2	2							2																
			10	1%	2	0%	0	2											2															
			14	0%	0	1%	0	0																										
			22	2%	2	2%	1	3																										
			25	0%	0	5%	3	3																										
			27	22%	32	12%	7	40																										
			29	13%	20	16%	10	30																										
			30	3%	4	0%	0	4																										
			31	1%	1	0%	0	1																										
			32	6%	8	20%	13	21																										
			34	10%	15	9%	6	20																										
			45	9%	14	0%	0	14																										
			39	4%	6	2%	1	7																										
			65	11%	16	0%	0	16																										
			66	5%	7	20%	13	20																										
			Beverley	9%	13	9%	5	19																										
			74	1%	2	4%	2	4																										
			75	2%	3	0%	0	3																										
				Two-way daily LV movements				2	2	2	0	0	0	0	0	0	2	2	0	4	0	0	0	0	0	0	7	3	3	3	0	5	5	0

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																										
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Access 44	91	35	1	1%	1	1%	0	1	1	1	1						1		1															
			10	1%	1	0%	0	1										1																
			14	0%	0	1%	0	0											1															
			22	2%	1	2%	0	1												0	0													
			25	0%	0	5%	2	2																			1	1	1	1				
			27	22%	14	12%	3	17																			2					2	2	
			29	13%	9	16%	4	13																										
			30	3%	2	0%	0	2																										
			31	0%	0	0%	0	0																										
			32	6%	4	20%	5	9																										
			34	10%	6	9%	2	9																										
			45	9%	6	0%	0	6																										
			39	4%	2	2%	0	3																										
			65	11%	7	0%	0	7																										
			66	5%	3	20%	5	9																										
			Beverley	9%	6	9%	2	8																										
			74	1%	1	4%	1	2																										
			75	2%	1	0%	0	1																										
				Two-way daily LV movements				1	1	1	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	3	1	1	1	0	2	2	0	

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																												
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26		
Access 41 or 42 (Onshore substation)	231		35 or 63	1%	2	1%	2	3	3	3	3	4	5	6		7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
		10		1%	2	0%	0	2									3			2		3														
		14		0%	0	1%	1	1														2		1	1											
		22		2%	2	2%	3	5																												
		25		0%	0	5%	9	9																												
		27		22%	36	12%	19	55																												
		29		13%	22	16%	26	48																												
		30		3%	4	0%	0	4																												
		31		1%	1	0%	0	1																												
		32		6%	9	20%	33	42																												
		34		10%	16	9%	15	31																												
		45		9%	15	0%	0	15																												
		39		4%	6	2%	2	9																												
		65		11%	18	0%	0	18																												
		66		5%	8	20%	32	40																												
		Beverley		9%	15	9%	14	29																												
		74		1%	2	4%	6	8																												
		75		2%	3	0%	0	3																												
				Two-way daily LV movements				3	3	3	0	0	0	0	0	0	3	2	0	5	1	1	0	0	0	0	9	0	0	0	0	9	9	0		

	Peak daily LV trips	Entry Link	Destination Link	Residents		In Migrants		Peak daily LV trips per entry																												
				% Split	Peak LVs	% Split	Peak LVs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26		
				1	2	1%	2	1%	2	2	2	2							2	2																
Access 44 (Onshore substation)	231	10	51	1%	2	0%	0	2								2		2																		
		14		0%	0	0									2		2																			
		22		2%	2	2%	1	4												0	0															
		25		0%	0	5%	4	4																												
		27		22%	36	12%	8	44																												
		29		13%	22	16%	11	33																												
		30		3%	4	0%	0	4																												
		31		3%	1	0%	1	1																												
		32		6%	9	20%	14	23																												
		34		10%	16	9%	6	23																												
		45		9%	15	0%	0	15																												
		39		4%	6	2%	1	7																												
		65		11%	18	0%	0	18																												
		66		5%	8	20%	14	22																												
		Beverley		9%	15	9%	6	21																												
		74		1%	2	4%	3	4																												
		75		2%	3	0%	0	3																												
							Two-way daily LV movements				2	2	2	0	0	0	0	0	2	2	0	4	0	0	0	0	0	0	7	4	4	4	0	4	4	0

[illegible][illegible]

	Peak daily LV trips	Entry Link	Destination Link	Links																																															
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75								
Access 5 and 6	220	1	8																																																
		10																																																	
		14																																																	
		22																																																	
		25																																																	
		27		42	42		42	42	42	42	42				42							42	42	42	42	42	42	42																							
		29				32	32	32	32	32	32				32							32	32	32	32	32	32	32																							
		30					4	4	4	4	4	4			4							4	4	4	4	4	4	4																							
		31						1		1	1	1	1		1						1	1	1	1	1	1	1																								
		32							22	22		22	22		22						22	22	22	22	22	22	22																								
		34										22	22		22						22	22	22	22	22	22	22																								
		45																																																	
		39														7						7	7	7	7	7	7																								
		65																																																	
		66													21							21	21	21	21																										
		Beverley																																																	
		74																																																	
		75																																																	
							42	42	32	77	79	100	100	122	122	0	0	143	7	7	0	0	0	143	143	143	143	208	187	187	24	0	0	24	17	0	0	0	17	21	0	0	0	0	0	4	4				

[illegible]

	Peak daily LV trips	Entry Link	Destination Link	Links																																									
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75		
Access 9	194	1	10																																										
		10																																											
		14																																											
		22																																											
		25																																											
		27		37	37		37	37	37	37	37	37			37							37	37	37	37	37	37	37																	
		29				28	28	28	28	28	28	28			28							28	28	28	28	28	28	28																	
		30					3	3	3	3	3	3	3		3						3	3	3	3	3	3	3																		
		31						1	1	1	1	1	1		1						1	1	1	1	1	1	1																		
		32							19	19	19	19	19		19						19	19	19	19	19	19	19																		
		34										19	19		19						19	19	19	19	19	19	19																		
		45																																											
		39																																											
		65																																											
		66																																											
		Beverley																																											
		74																																											
		75																																											
				37	37	28	68	69	89	89	108	108	0	0	126	6	6	0	0	0	126	126	126	126	184	165	165	21	0	0	21	15	0	0	0	0	15	18	0	0	0	0	4	4	

	Peak daily LV trips	Entry Link	Destination Link	Links																																									
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75		
Access 10 and 11	227	1	13																																										
		10																																											
		14																																											
		22																																											
		25																																											
		27		43	43		43	43	43	43	43	43			43						43	43	43	43	43	43	43																		
		29				33	33	33	33	33	33	33			33						33	33	33	33	33	33	33																		
		30					4	4	4	4	4	4			4						4	4	4	4	4	4	4																		
		31						1	1	1	1	1			1						1	1	1	1	1	1	1																		
		32							23	23	23	23			23						23	23	23	23	23	23	23																		
		34									22	22			22						22	22	22	22	22	22	22																		
		45																																											
		39																																											
		65																																											
		66																																											
		Beverley																																											
		74																																										4	4
		75																																										3	3
				43	43	33	80	81	104	104	126	126	0	0	147	7	8	0	0	0	147	147	147	147	215	193	193	25	0	0	25	18	0	0	0	0	18	21	0	0	0	0	4	8	

	Peak daily LV trips	Entry Link	Destination Link	Links																																											
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75				
Access 13 and 14	322	1	55																					3	3																						
		10																						3	3																						
		14																						1	1																						
		22																						5	5																						
		25																						5	5																						
		27		61	61		61	61	61	61	61	61			61						61	61	61	61		61	61																				
		29				46	46	46	46	46	46	46			46						46	46	46	46		46	46																				
		30					6	6	6	6	6	6			6						6	6	6	6		6	6																				
		31						2	2	2	2	2			2						2	2	2	2		2	2																				
		32							32	32	32	32			32						32	32	32	32		32	32																				
		34									32	32			32						32	32	32	32		32	32																				
		45										32			32						32	32	32	32		32	32																				
		39														10										21																					
		65																								10	10		10																		
		66																								25	25		25																		
		Beverley														30						30	30	30	30		30	30																			
		74																								29	29																				
75																							6	6		6																					
																							5	5		5	5																				
																							17	322	284		36		0	0		36	25	0	0	0	0	25	30	0	0	0	0	6	11		

[illegible][illegible]

[illegible]

	Peak daily LV trips	Entry Link	Destination Link	Links																																															
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75								
Access 41 or 42	194	1	35 or 63									2	2	2	2					2	2	2	2	2	2	2							2																		
		10									2	2	2	2						2	2	2	2	2	2	2	2							2																	
		14											0	0	0	0					0	0	0	0	0	0	0							0																	
		22											3	3	3			3	3															3							3	3									
		25											3	3	3			3	3															3							3	3									
		27		37	37		37	37	37	37	37	37	37	37	37																				37																
		29				28	28	28	28	28	28	28	28	28	28																				28																
		30				3	3	3	3	3	3	3	3	3	3																			3																	
		31					1	1	1	1	1	1	1	1	1																			1																	
		32						19	19	19	19	19	19	19	19																				19																
		34									19	19	19	19	19																				19																
		45												13	13	13			13	13															13																
		39												6	6	6																			6																
		65												15	15	15																			15																
		66												18	18	18																			18																
		Beverly												17	17	17	17																		17																
74											4	4	4			4	4															4								4	4										
75											3	3	3			3	3															3								3	3										
				37	37	28	68	69	89	89	108	194	194	194	21	6	25	25	0	0	4	4	4	4	4	4	4	0	0	0	0	6	0	194	6	15	44	6	0	0	0	0	10	13							

[illegible]

	Peak daily LV trips	Entry Link	Destination Link	Links																																															
				27	28	29	30	31	32	33	34	35	36	37	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75								
Access 24	182	1	62																						2	2	2	2			2	2	2																		
		10																								1	1	1	1																						
		14																									0		0	0			0	0	0																
		22															2	2																																	
		25																																																	
		27																																																	
		29																																																	
		30																																																	
		31																																																	
		32																																																	
		34																																																	
		45																																																	
		39																																																	
		65																																																	
		66																																																	
		Beverley																																																	
		74																																																	
75																																																			

[illegible][illegible]

[illegible]

DBS East or DBS West in isolation - HGV assignment

Access 1 and 2	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A165	77	6																											
	A1079																													
	A164																													
	Peak daily HGV trips per link			77	77	0	0	77	77	77	77	77	77	77	0	0	0	0	0	0	0	0	0	0	77	0	0	0	0	77
Access 3 and 4	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A165	74	7																											
	A1079																													
	A164																													
	Peak daily HGV trips per link			74	74	0	0	74	74	74	74	74	74	74	0	0	0	0	0	0	0	0	0	74	0	0	0	0	74	74
Access 5 and 6	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A165	72	8																											
	A1079																													
	A164																													
	Peak daily HGV trips per link			72	72	0	0	72	72	72	72	72	72	72	0	0	0	0	0	0	0	0	0	72	0	0	0	0	72	72
Access 7 or 8	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A165	37	10 or 11																											
	A1079																													
	A164																													
	Peak daily HGV trips per link			37	37	0	0	37	37	37	37	37	37	37	0	0	0	0	0	0	0	0	0	37	0	0	0	0	37	37
Access 9	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A165	81	10																											
	A1079																													
	A164																													
	Peak daily HGV trips per link			81	81	0	0	81	81	81	81	81	81	81	0	0	0	0	0	0	0	0	0	81	0	0	0	0	81	81
Access 10 and 11	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A165	88	13																											
	A1079																													
	A164																													
	Peak daily HGV trips per link			88	88	0	0	88	88	88	88	88	88	88	0	0	0	0	0	0	0	0	0	88	0	0	0	0	88	88
Access 13 and 14	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A1079	96	55																											
	A164																													
	Peak daily HGV trips per link			96	96	0	0	96	96	96	96	0	0	96	96	0	0	0	0	0	0	0	96	0	0	0	0	96	96	
	Access 15 and 16	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74
A1079		71	73																											
A164																														
Peak daily HGV trips per link				71	71	0	0	71	71	71	71	0	0	71	0	0	0	0	0	0	0	0	71	0	0	0	0	71	71	71
Access 17		Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74
	A1079	82	56																											
	A164																													
	Peak daily HGV trips per link			82	82	0	0	82	82	82	82	0	0	82	0	0	0	0	0	0	0	0	82	0	0	0	0	82	82	

Access 18	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A1079	75	58	75	75										75	75		75	75		75	0	75	0	0	0	0	0	75	75
	A164														75	75		75	75		75	0								
	Peak daily HGV trips per link			75	75	0	0	0	0	0	0	0	0	0	75	75	0	75	75	0	75	0	0	75	0	0	0	0	75	75

Access 19 and 20	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A1079	38	59	38	38										38			38	38	38	38			38					38	38
	A164															38			38	38	38	38			38					
	Peak daily HGV trips per link			38	38	0	0	0	0	0	0	0	0	0	38	0		38	38	38	0	38	0	0	0	0	0	38	38	

Access 21 and 22	Entry Route	Peak Trips	Destination Link																														
	A1079	38	60	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75			
	A164			38	38														38	38		38			38					38	38		
				38	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	38	0	38	0	0	38	0	0	0	0	0	38	38
	Peak daily HGV trips per link			38	38	0	0	0	0	0	0	0	0	0	0	0	0	0	38	38	0	38	0	0	38	0	0	0	0	0	38	38	

Access 23	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A1079	19	62	19	19															19	19		19						19	19
	A164																				19	19								
	Peak daily HGV trips per link			19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	19	0	0	19	0	0	0	0	19	19

Access 41 or 42	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75	
	A1079	96	35 or 63	96	96																96			96					96	96	
	A164																				96										
	Peak daily HGV trips per link			96	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	0	0	96	0	0	0	0	0	96

Access 43	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A1079	82	35 or 66	82	82																			82					82	82
	A164																													
	Peak daily HGV trips per link			82	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	82	0	0	0	0	82	82

Access 24	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75	
	A1079	78	62	78	78																78	78		78					78	78	
	A164																					78	78								
	Peak daily HGV trips per link			78	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	78	0	0	78	0	0	0	78	78	

Access 25 and 26	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A1079	123	71	123	123																123	123		123	123		123		123	123
	A164																													
	Peak daily HGV trips per link			123	123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	123	123	0	123	123	0	123	0	123	123

Access 44	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A1079	69	51	69	69				69															69					69	69
	A164								69																					
	Peak daily HGV trips per link			69	69	0	0	0	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	0	0	0	0	69	69

Access 41 or 42 (Onshore Substation)	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75	
	A1079	171	35 or 63	171	171																171			171					171	171	
	A164	Peak daily HGV trips per link		171	171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				171	0	0	0	0	0	171	171

Access 44 (Onshore Substation)	Entry Route	Peak Trips	Destination Link	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A1079	177	51	177	177				177															177					177	177
	A164								177																					
	Peak daily HGV trips per link			177	177	0	0	0	177	0	0	0	0	0	0	0	0	0	0	0	0	0	0	177	0	0	0	0	177	177

				40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
Total peak daily HGV trips per link				1643	1643	0	0	678	924	678	678	429	525	678	113	75	38	150	150	97	637	123	0	1643	123	0	123	71	1643	1643

				40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
Total peak daily HGV trips per link (Capped at 849 HGVs)				849	849	0	0	678	849	678	678	429	525	678	113	75	38	150	150	97	637	123	0	849	123	0	123	71	849	849

DBS East and DBS West concurrently - HGV assignment

Access 1 and 2	Entry Route	Peak Trips	Destination Link	Links																																						
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	
	A165	131	6		131	131	131	131	131			131			131	131	131	131	131	131	131	131	131	131	131	131	131	131	131													
	A1079				131	131	131	131	131			131			131						131	131	131	131	131	131	131	131	131													
	A164				131	131	131	131	131	131			131											131	131	131	131	131	131	131	131											131
	Peak daily HGV trips per link			0	131	131	131	131	131	131	0	0	131	0	0	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	0	131	131	131	131	131	131	131	0	0

[illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible]

Access 18	Entry Route	Peak Trips	Destination Link	Links																																								
	A1079	110	58	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38			
	A164																						110	110	110	110	110	110	110	110														
	Peak daily HGV trips per link			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110	110	110	110	110	110	110	110	110	110	0	110	110	110	110	110	110	110	110	0	0	0

Access 19 and 20	Entry Route	Peak Trips	Destination Link	Links																																									
	A1079	64	59	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38				
	A164																					64	64	64	64	64	64	64	64	64	64	64	64		64	64	64	64	64	64					
	Peak daily HGV trips per link			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	64	64	64	64	64	64	64	64	64	64	0	64	64	64	64	64	64	64	64	0	0	0

Access 21 and 22	Entry Route	Peak Trips	Destination Link	Links																																									
	A1079	64	60	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38				
	A164																					64	64	64	64	64	64	64	64	64	64	64		64	64	64	64	64	64	64					
	Peak daily HGV trips per link			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	64	64	64	64	64	64	64	64	64	64	0	64	64	64	64	64	64	64	64	0	0	0

Access 23	Entry Route	Peak Trips	Destination Link	Links																																									
	A1079	32	62	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38				
	A164																					32	32	32	32	32	32	32	32	32	32	32		32	32	32	32	32	32	32					
	Peak daily HGV trips per link			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	32	32	32	32	32	32	32	32	32	32	0	32	32	32	32	32	32	32	32	0	0	0

Access 41 or 42	Entry Route	Peak Trips	Destination Link	Links																																									
	A1079	112	35 or 63	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38				
	A164																					112	112	112	112	112	112	112	112	112	112		112	112	112	112	112	112							
	Peak daily HGV trips per link			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112	112	112	112	112	112	112	112	112	112	112	0	112	112	112	112	112	112	112	112	0	0	0

Access 43	Entry Route	Peak Trips	Destination Link	Links																																									
	A1079	132	35	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38				
	A164																					132	132	132	132	132	132	132	132	132	132	132	132		132	132	132	132	132	132					
	Peak daily HGV trips per link			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	132	132	132	132	132	132	132	132	132	132	132	0	132	132	132	132	132	132	132	132	0	0	0

Access 24	Entry Route	Peak Trips	Destination Link	Links																																								
	A1079	127	62	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38			
	A164																					127	127	127	127	127	127	127	127	127	127	127		127	127	127	127	127	127					
	Peak daily HGV trips per link			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127	127	127	127	127	127	127	127	127	127	127	0	127	127	127	127	127	127	127	0	0	0

Access 25 and 26	Entry Route	Peak Trips	Destination Link	Links																																								
	A1079	184	71	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38			
	A164																					184	184	184	184	184	184	184	184	184	184	184		184	184	184	184	184	184			184	184	
	Peak daily HGV trips per link			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	184	184	184	184	184	184	184	184	184	184	184	0	184	184	184	184	184	184	0	184	184	0

Access 44	Entry Route	Peak Trips	Destination Link	Links																																								
	A1079	69	51	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38			
	A164																					69	69	69	69	69	69	69	69	69	69		69	69	69	69	69	69			69	69		
	Peak daily HGV trips per link			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	69	69	69	69	69	69	69	69	69	0	69	69	69	69	69	69	69	69	0	0	69

Access 41 or 42 (Onshore Substation)	Entry Route	Peak Trips	Destination Link	Links																																									
	A1079	244	35 or 63	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38				
	A164																					244	244	244	244	244	244	244	244	244	244	244		244	244	244	244	244	244						
	Peak daily HGV trips per link			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	244	244	244	244	244	244	244	244	244	244	244	0	244	244	244	244	244	244	244	244	0	0	0

Access 44 (Onshore Substation)	Entry Route	Peak Trips	Destination Link	Links																																									
	A1079	177	51	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38				
	A164																					177	177	177	177	177	177	177	177	177	177	177		177	177	177	177	177	177			177	177		
	Peak daily HGV trips per link			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	177	177	177	177	177	177	177	177	177	177	177	0	177	177	177	177	177	177	177	177	0	0	177

				Links																																						
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	
Total peak daily HGV trips per link				0	131	260	131	131	131	129	122	382	191	59	572	712	712	712	712	712	712	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2310	0	2310	2310	2310	2310	2310	2126	184	184	1381

				Links																																						
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	
Total peak daily HGV trips per link (Capped at 1257 HGVs)				0	131	260	131	131	131	129	122	382	191	59	572	712	712	712	712	712	712	1257	1257	1257	1257	1257	1257	1257	1257	1257	1257	0	1257	1257	1257	1257	1257	1257	1257	184	184	1257

DBS East and DBS West concurrently - HGV assignment

Access 1 and 2	Entry Route	Peak Trips	Destination Link																																			
	A165	131	6	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75							
	A1079				131	131				131	131	131	131	131	131	131									131						131	131						
	A164								131	131	131	131	131	131	131																							
	Peak daily HGV trips per link				0	131	131	0	0	131	131	131	131	131	131	131	0	0	0	0	0	0	0	0	0	131	0	0	0	0	131	131						

Access 3 and 4	Entry Route	Peak Trips	Destination Link																																			
A165	129	7	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75								
A1079		129	129				129	129	129	129	129	129	129									129						129	129									
A164						129	129	129	129	129	129	129	129																									
Peak daily HGV trips per link				0	129	129	0	0	129	129	129	129	129	129	129	0	0	0	0	0	0	0	0	0	129	0	0	0	0	129	129							
Access 5 and 6	Entry Route	Peak Trips	Destination Link																																			
A165	122	8	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75								
A1079		122	122				122	122	122	122	122	122	122									122						122	122									
A164						122	122	122	122	122	122	122	122																									
Peak daily HGV trips per link				0	122	122	0	0	122	122	122	122	122	122	122	0	0	0	0	0	0	0	0	0	122	0	0	0	0	122	122							
Access 7 or 8	Entry Route	Peak Trips	Destination Link																																			
A165	59	10 or 11	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75								
A1079		59	59				59	59	59	59	59	59	59									59						59	59									
A164						59	59	59	59	59	59	59	59																									
Peak daily HGV trips per link				0	59	59	0	0	59	59	59	59	59	59	59	0	0	0	0	0	0	0	0	0	59	0	0	0	0	59	59							
Access 9	Entry Route	Peak Trips	Destination Link																																			
A165	132	10	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75								
A1079		132	132				132	132	132	132	132	132	132									132						132	132									
A164						132	132	132	132	132	132	132	132																									
Peak daily HGV trips per link				0	132	132	0	0	132	132	132	132	132	132	132	0	0	0	0	0	0	0	0	0	132	0	0	0	0	132	132							
Access 10 and 11	Entry Route	Peak Trips	Destination Link																																			
A165	140	13	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75								
A1079		140	140				140	140	140	140	140	140	140									140						140	140									
A164						140	140	140	140	140	140	140	140																									
Peak daily HGV trips per link				0	140	140	0	0	140	140	140	140	140	140	140	0	0	0	0	0	0	0	0	0	140	0	0	0	0	140	140							
Access 13 and 14	Entry Route	Peak Trips	Destination Link																																			
A1079	159	55	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75								
A164		159	159				159	159	159	159		159	159									159						159	159									
Peak daily HGV trips per link			0	159	159	0	0	159	159	159	159	0	159	159	0	0	0	0	0	0	0	0	0	159	0	0	0	0	159	159								
Access 15 and 16	Entry Route	Peak Trips	Destination Link																																			
A1079	119	73	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75								
A164		119	119				119	119	119	119			119									119						119	119	119								
Peak daily HGV trips per link			0	119	119	0	0	119	119	119	119	0	0	119	0	0	0	0	0	0	0	0	0	119	0	0	0	0	119	119	119							
Access 17	Entry Route	Peak Trips	Destination Link																																			
A1079	145	56	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75								
A164		145	145				145	145	145	145		145	145									145						145	145									
Peak daily HGV trips per link			0	145	145	0	0	145	145	145	145	0	0	145	0	0	0	0	0	0	0	0	0	145	0	0	0	0	145	145								

Access 18	Entry Route	Peak Trips	Destination Link																													
				39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75	
	A1079	110	58		110	110											110	110		110	110		110			110				110	110	
	A164																	110	110		110	110		110							110	110
	Peak daily HGV trips per link			0	110	110	0	0	0	0	0	0	0	0	0	0	0	110	110	0	110	110	0	110	0	0	110	0	0	0	0	110

Access 19 and 20	Entry Route	Peak Trips	Destination Link																												
				39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A1079	64	59		64	64										64		64	64	64		64				64				64	64
	A164															64		64	64	64		64									
	Peak daily HGV trips per link				0	64	64	0	0	0	0	0	0	0	0	64	0	64	64	64	64	0	64	0	0	64	0	0	0	0	64

Access 21 and 22	Entry Route	Peak Trips	Destination Link																												
	A1079	64	60	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A164				64	64													64	64		64			64					64	64
	Peak daily HGV trips per link			0	64	64	0	0	0	0	0	0	0	0	0	0	0	0	64	64	0	64	0	0	64	0	0	0	0	64	64

Access 23	Entry Route	Peak Trips	Destination Link																												
				39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A1079	32	62		32	32															32	32			32					32	32
	A164																					32	32								
	Peak daily HGV trips per link			0	32	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	32	0	0	32	0	0	0	0	32

Access 41 or 42	Entry Route	Peak Trips	Destination Link																														
	A1079 A164 Peak daily HGV trips per link	112	35 or 63	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75		
					112	112																		112				112				112	112
				0	112	112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112	0	0	112	0	0	0	0	112	112

Access 43	Entry Route	Peak Trips	Destination Link																												
	A1079	132	35	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A164			132	132																					132					132
	Peak daily HGV trips per link			0	132	132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	132	0	0	0	0	132	132

Access 24	Entry Route	Peak Trips	Destination Link																													
				39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75	
	A1079	127	62		127	127															127	127				127					127	127
	A164																					127	127									
	Peak daily HGV trips per link				0	127	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127	127	0	0	127	0	0	0	0	0	127

Access 25 and 26	Entry Route	Peak Trips	Destination Link																												
				39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A1079	184	71		184	184																184	184		184	184		184		184	184
	A164																														
	Peak daily HGV trips per link				0	184	184	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	184	184	0	184	184	0	184	0	184

Access 44	Entry Route	Peak Trips	Destination Link																														
				39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75		
	A1079	69	51		69	69				69																69					69	69	
	A164									69																							
	Peak daily HGV trips per link			0	69	69	0	0	0	0	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	0	0	0	0	69	69

Access 41 or 42 (Onshore Substation)	Entry Route	Peak Trips	Destination Link																												
	A1079	244	35 or 63	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
	A164			244	244																	244			244						244
	Peak daily HGV trips per link			0	244	244	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	244	0	0	244	0	0	0	0	244	244

Access 44 (Onshore Substation)	Entry Route	Peak Trips	Destination Link																														
	A1079 A164	177	51	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75		
					177	177				177																	177					177	177
										177																							
	Peak daily HGV trips per link			0	177	177	0	0	0	177	0	0	0	0	0	0	0	0	0	0	0	0	0	0	177	0	0	0	0	177	177		

	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
Total peak daily HGV trips per link	0	2450	2450	0	0	1135	1381	1135	1135	712	871	1135	174	110	64	238	238	159	937	184	0	2450	184	0	184	119	2450	2450

	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
Total peak daily HGV trips per link (Capped at 1257 HGVs)	0	1257	1257	0	0	1135	1257	1135	1135	712	871	1135	174	110	64	238	238	159	937	184	0	1257	184	0	184	119	1257	1257

	HGV Trips per link for the Projects in Isolation																																				
Links	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Total peak daily HGV trips per link	0	77	152	77	77	77	74	72	224	118	37	341	429	429	429	429	429	429	1643	1643	1643	1643	1643	1643	1643	1643	1643	1555	0	1555	1555	1555	1555	1555	1432	123	123

	HGV Trips per link for the Projects in Isolation																																					
Links	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	
Total peak daily HGV trips per link (Capped at 849 HGVs)	0	77	152	77	77	77	74	72	224	118	37	341	429	429	429	429	429	429	849	849	849	849	849	849	849	849	849	849	0	849	849	849	849	849	849	849	123	123

	LV Trips per link for the Projects in Isolation																																						
Links	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37		
Total peak daily LV trips per link	21	20	231	1	69	106	108	111	339	110	93	444	239	32	28	28	28	28	67	20	21	22	23	24	25	26	0	216	28	29	319	773	784	1011	1011	1228	1430	160	160

Links	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
Total peak daily HGV trips per link	924	0	1643	1643	0	0	678	924	678	678	429	525	678	113	75	38	150	150	97	637	123	0	1643	123	0	123	71	1643	1643

Links	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
Total peak daily HGV trips per link (Capped at 849 HGVs)	849	0	849	849	0	0	678	849	678	678	429	525	678	113	75	38	150	150	97	637	123	0	849	123	0	123	71	849	849

Links	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
Total peak daily LV trips per link	1000	65	131	170	63	63	649	950	684	684	642	750	885	284	86	62	284	265	84	702	45	169	384	45	0	104	91	86	117

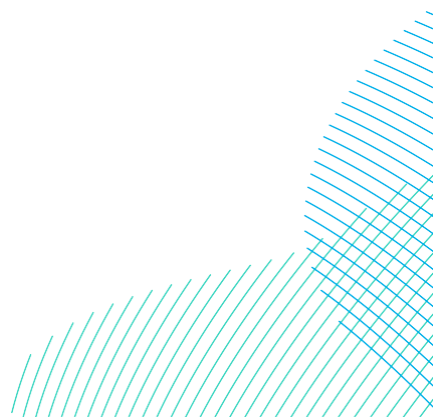
Links		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Total peak daily HGV trips per link		0	131	260	131	131	131	129	122	382	191	59	572	712	712	712	712	712	712	2450	2450	2450	2450	2450	2450	2450	2450	2450	2310	0	2310	2310	131	2310	2310	2126	184	184

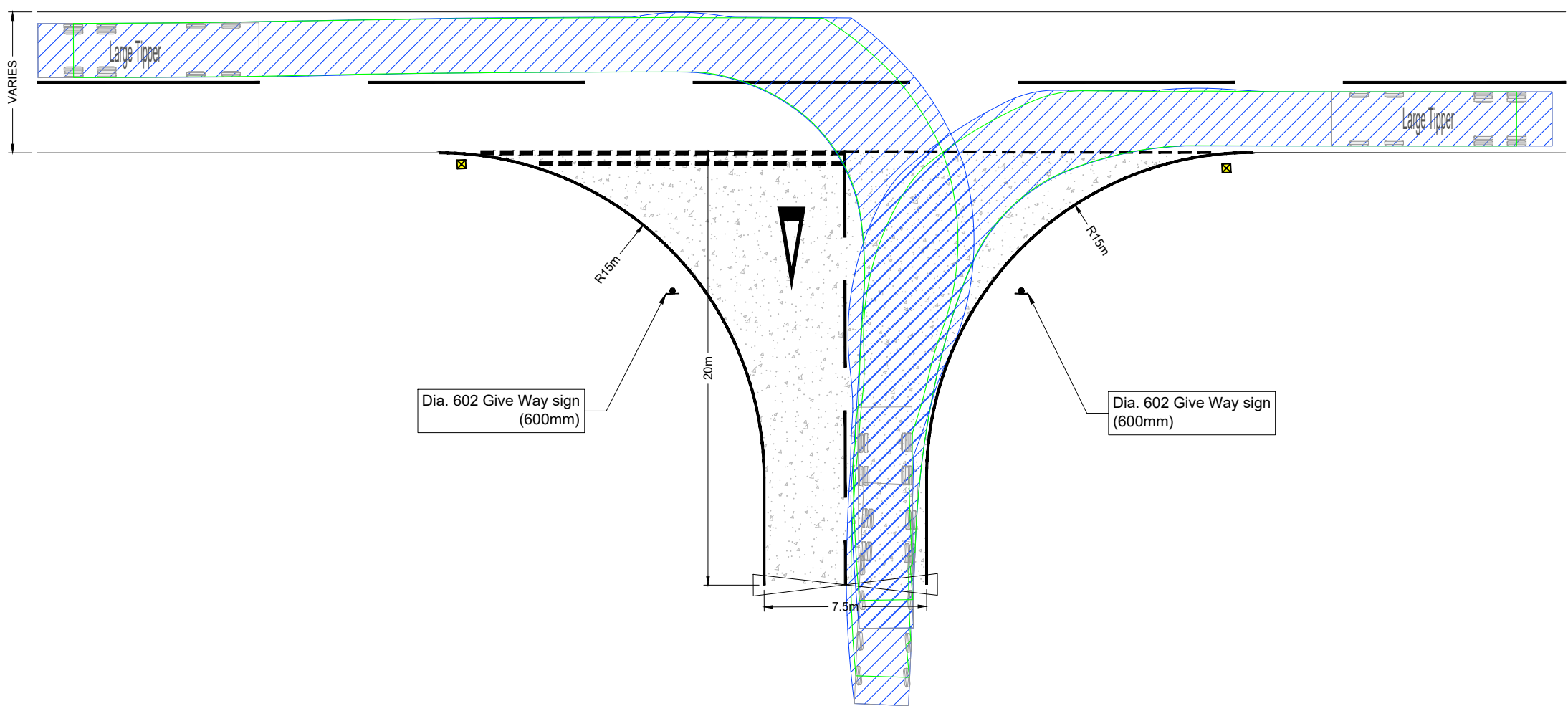
Links		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Total peak daily HGV trips per link (Capped at 1247 HGVs)		0	131	260	131	131	131	129	122	382	191	59	572	712	712	712	712	712	712	1257	1257	1257	1257	1257	1257	1257	1257	1257	1257	0	1257	1257	1257	1257	1257	1257	184	184

Links		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Total peak daily LV trips per link		35	34	432	2	128	196	208	222	647	216	186	853	469	62	54	54	54	54	112	52	56	56	0	65	65	0	707	707	536	1308	1327	1701	1701	2048	2298	316	316

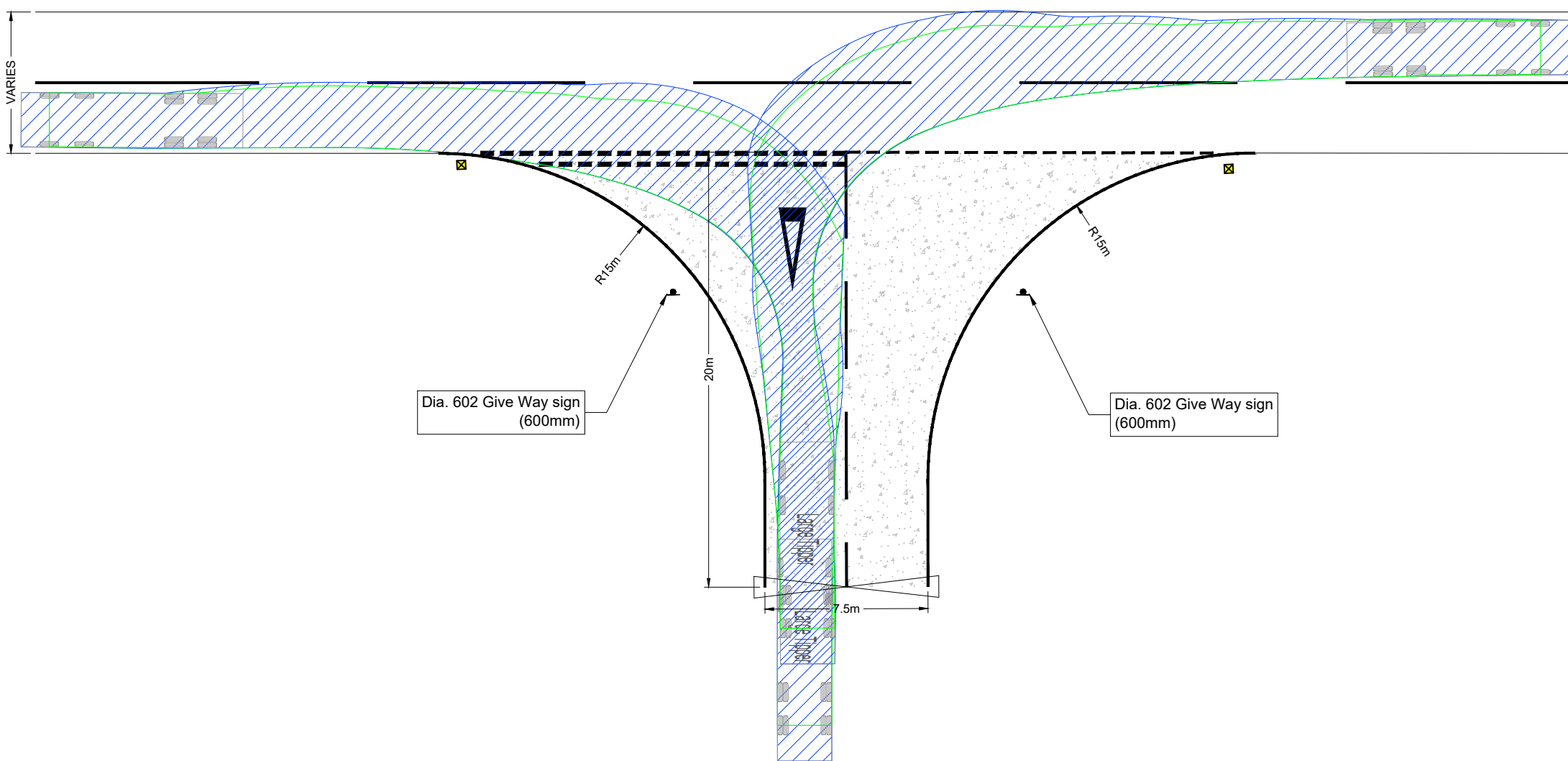
Links	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
Total peak daily HGV trips per link	1381	0	2450	2450	0	0	1135	1381	1135	1135	712	871	1135	174	110	64	238	238	159	937	184	0	2450	184	0	184	119	2450	2450
Links	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
Total peak daily HGV trips per link (Capped at 1247 HGVs)	1257	0	1257	1257	0	0	1135	1257	1135	1135	712	871	1135	174	110	64	238	238	159	937	184	0	1257	184	0	184	119	1257	1257
Links	38	39	40	45	46	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	68	69	71	73	74	75
Total peak daily LV trips per link	1654	111	200	257	110	110	1242	1542	1326	1326	1241	1447	1718	561	170	123	562	505	168	1041	82	291	610	82	0	208	182	133	186

Annex 17

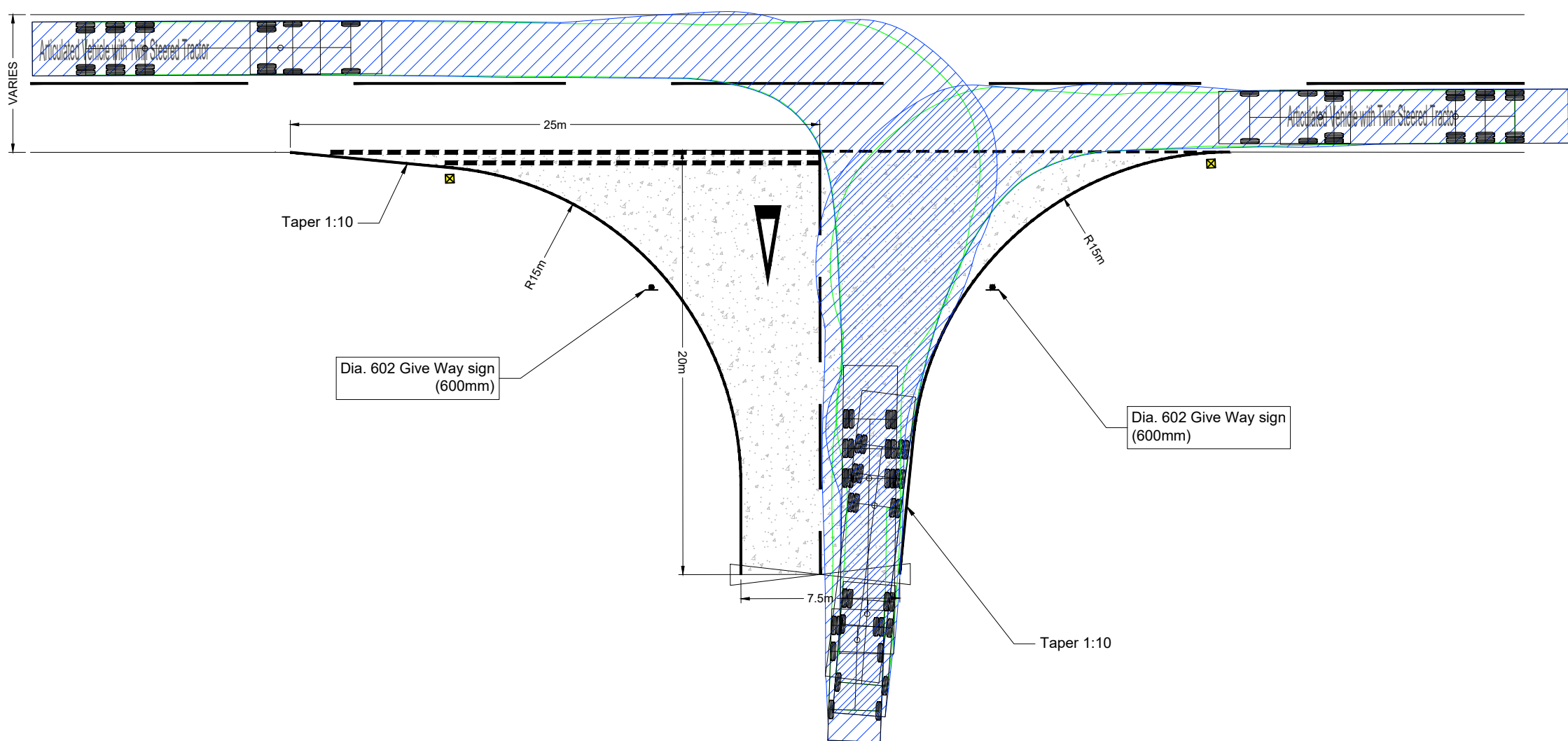




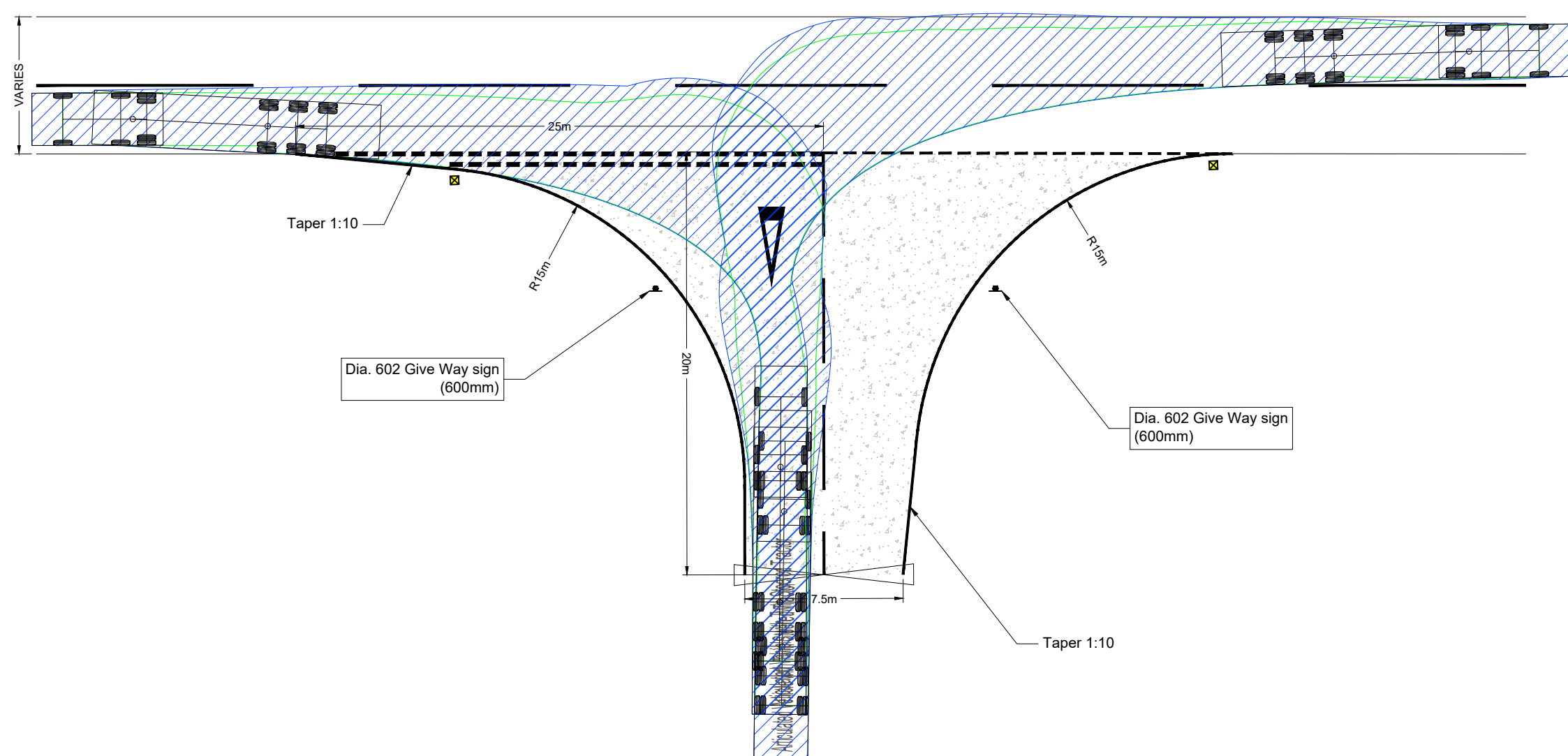
LARGE TIPPER IN



LARGE TIPPER OUT



ARTICULATED VEHICLE IN



ARTICULATED VEHICLE OUT

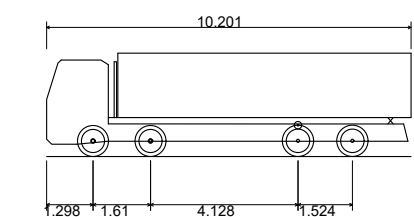
NOTES

- Do not scale from this drawing. All dimensions are in metres unless noted otherwise.
- Exact junction types and geometry to be determined from relevant section of Design Manual for Roads & Bridges (CD 123).
- All road markings and signs to conform with the Traffic Signs Regulation and General Directions 2016 and Traffic Signs Manual Chapter 8.

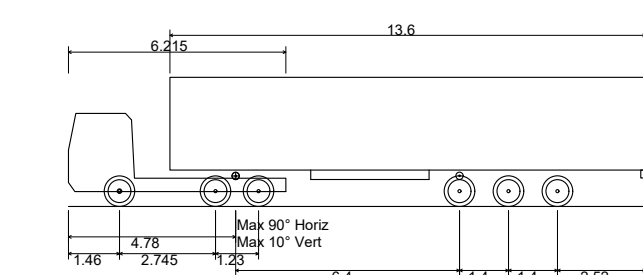
KEY

- EXISTING METALED ROAD BOUNDARY
- PROPOSED ACCESS BOUNDARY/ROAD MARKINGS
- PROPOSED GATE
- PROPOSED PLASTIC DEMARCATION BOLLARD
- PROPOSED POST MOUNTED TRAFFIC SIGN
- PROPOSED ACCESS CONSTRUCTION SURFACE

VEHICLE TRACKING



Large Tipper	10.201m
Overall Length	2.500m
Overall Width	2.893m
Min Body Ground Clearance	0.343m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	11.550m



Articulated Vehicle with Twin Steered Tractor	16.900m
Overall Length	2.550m
Overall Width	3.691m
Min Body Ground Clearance	0.426m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.987m

- VEHICLE BODY SWEEP PATH (FORWARD GEAR)
- VEHICLE CHASSIS SWEEP PATH

DRAFT - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	BY	CHK	APP

REVISIONS

CLIENT

RWE

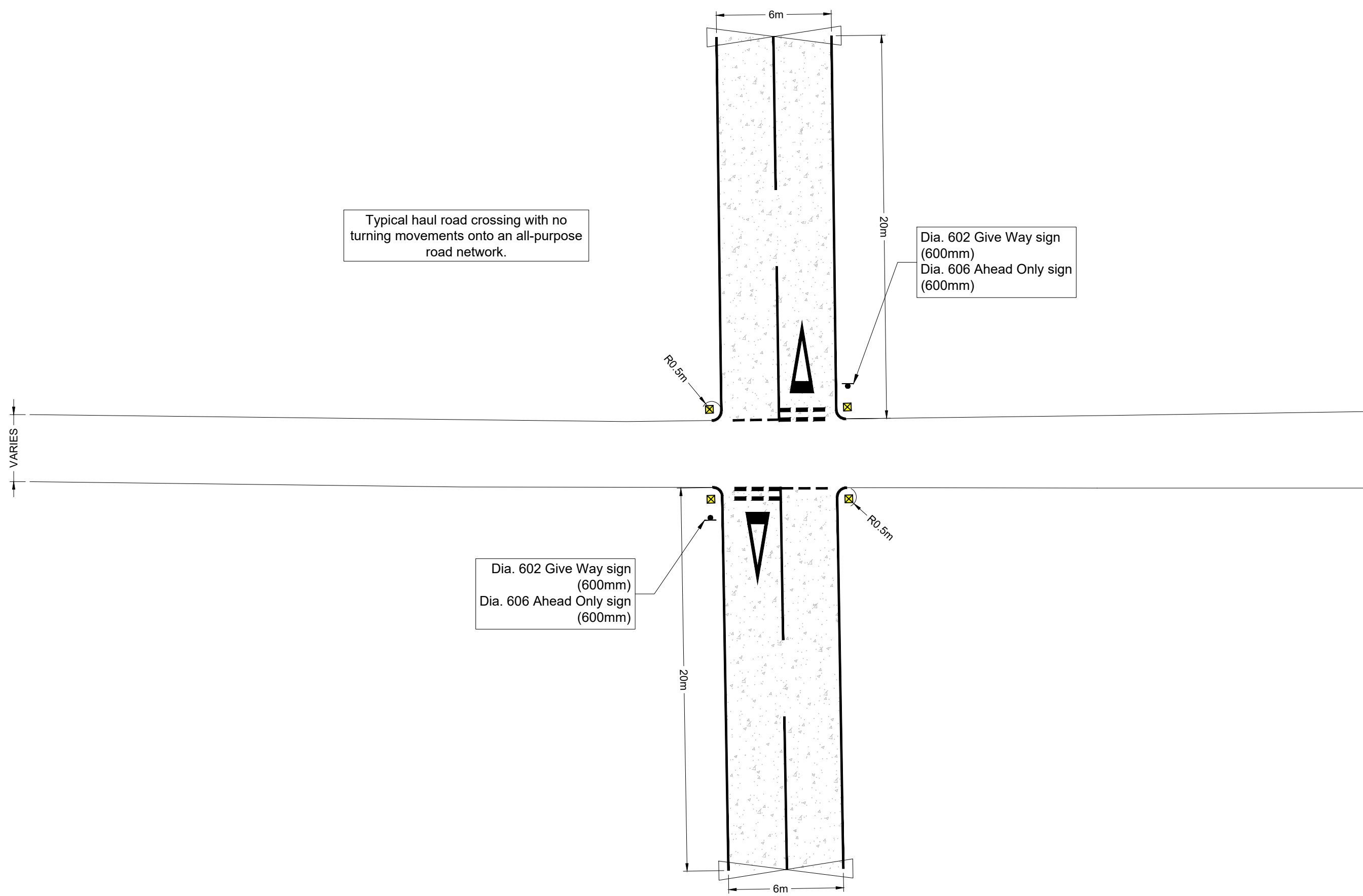
PROJECT
DOGGER BANK SOUTH
OFFSHORE WIND FARMS

TITLE
TYPE-A ACCESS
DMRB A/B ROAD JUNCTION
20t TIPPER & ARTICULATED
VEHICLE

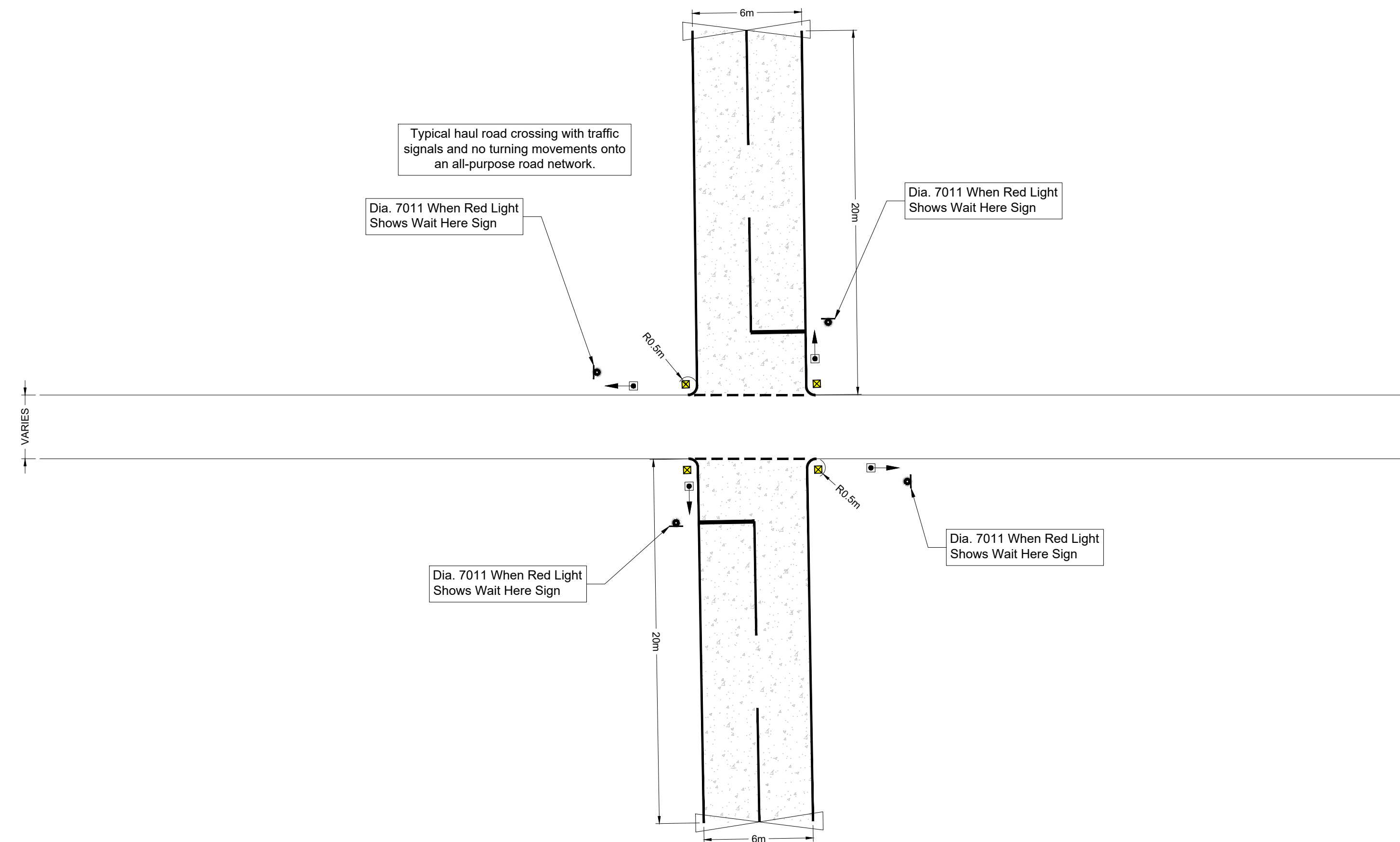


DRAWN	AA	CHECKED	SKT	APPROVED	ADR
DATE	01.03.23	SCALE AT A1	1:250	CLIENTS REF.	
DRAWING No.	PC2340-RHD-ZZ-ZZ-DR-R-0100	REVISION			
CLIENT DWG No.					P01

PRIORITY CROSSING
TYPE B



SIGNALLISED CROSSING
TYPE C



- NOTES
- Do not scale from this drawing. All dimensions are in metres unless noted otherwise.
 - Exact junction types and geometry to be determined from relevant section of Design Manual for Roads & Bridges (CD 123).
 - All road markings and signs to conform with the Traffic Signs Regulation and General Directions 2016 and Traffic Signs Manual Chapter 8.

- KEY
- EXISTING METALED ROAD BOUNDARY
 - PROPOSED ACCESS BOUNDARY/ROAD MARKINGS
 - PROPOSED GATE
 - PROPOSED PLASTIC DEMARCATION BOLLARD
 - PROPOSED POST MOUNTED TRAFFIC SIGN
 - PROPOSED ACCESS CONSTRUCTION
 - PROPOSED TEMPORARY PORTABLE TRAFFIC SIGNAL

**DRAFT - NOT FOR
CONSTRUCTION**

REV	DATE	DESCRIPTION	BY	CHK	APP

REVISIONS

CLIENT

RWE

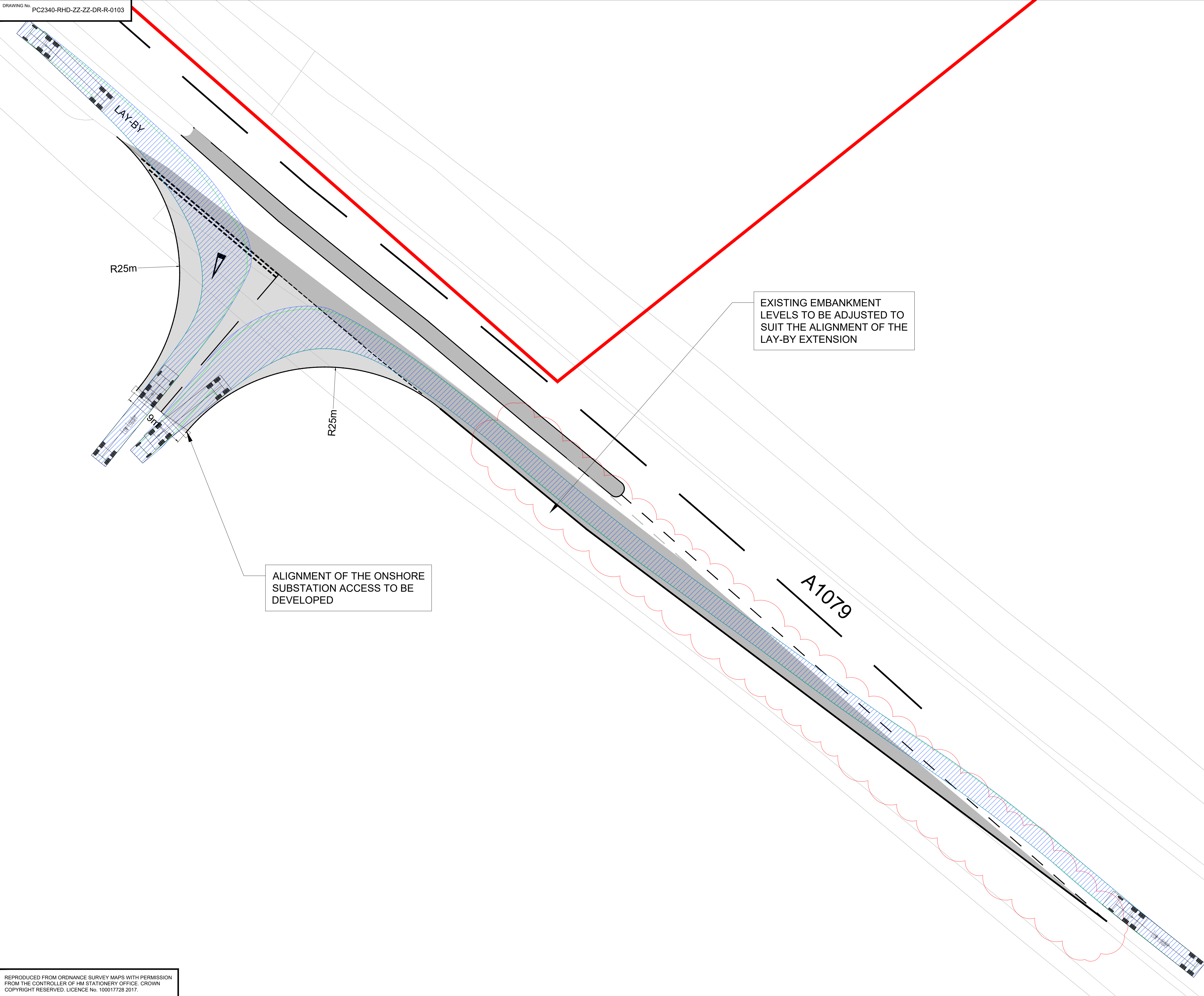
PROJECT
DOGGER BANK SOUTH
OFFSHORE WIND FARMS

TITLE
TYPE B AND C ACCESS
TYPICAL ROAD CROSSING



DRAWN	AA	CHECKED	SKT	APPROVED	ADR
DATE	01.03.23	SCALE AT A1	1:200	CLIENTS REF.	
DRAWING No.	PC2340-RHD-ZZ-ZZ-DR-R-0101	REVISION			
CLIENT DWG No.					P01

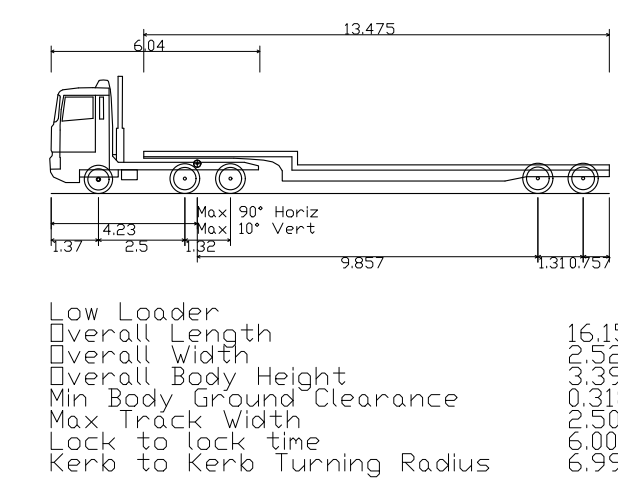
DRAWING No. PC2340-RHD-ZZ-ZZ-DR-R-0103



- NOTES
- Do not scale from this drawing.
 - All dimensions are in metres unless noted otherwise.

- KEY
- ONSHORE DEVELOPMENT AREA
 - EXISTING METALED ROAD BOUNDARY
 - PROPOSED ACCESS BOUNDARY/ROAD MARKINGS
 - PROPOSED GATE
 - PROPOSED ACCESS
 - PROPOSED LAY-BY/SPLITTER ISLAND EXTENSION

VEHICLE TRACKING



- VEHICLE BODY SWEEP PATH (FORWARD GEAR)
- VEHICLE CHASSIS SWEEP PATH

DRAFT - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	BY	CHK	APP

REVISIONS

CLIENT

RWE

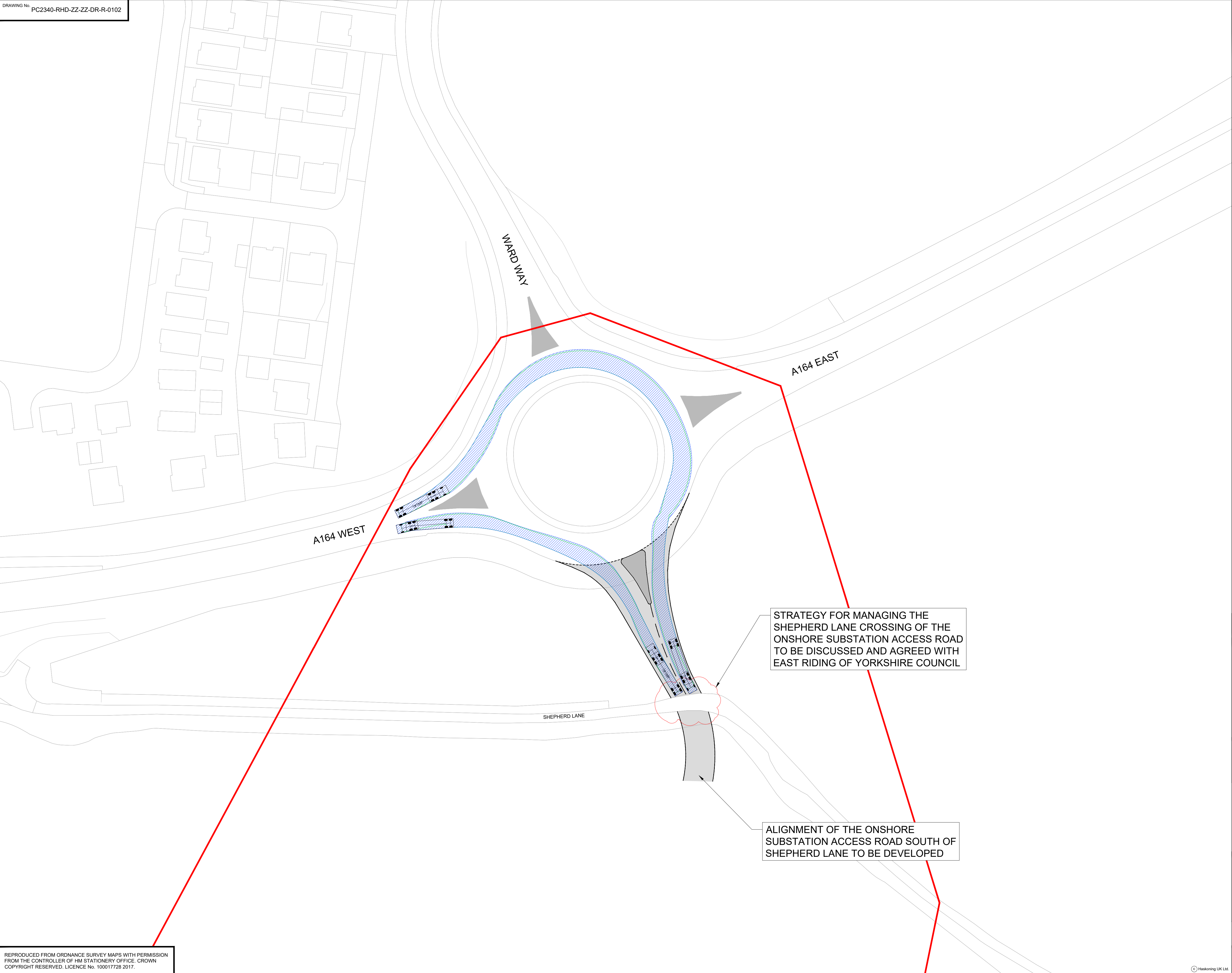
PROJECT
DOGGER BANK SOUTH
OFFSHORE WIND FARMS

TITLE
AC 42 - PROPOSED ACCESS AND
LAY-BY EXTENSION



DRAWN	AA	CHECKED	SKT	APPROVED	ADR
DATE	02.03.23	SCALE AT A1	1:250	CLIENTS REF.	
DRAWING No.	PC2340-RHD-ZZ-ZZ-DR-R-0103	REVISION			
CLIENT DWG No.					P01

REPRODUCED FROM ORDNANCE SURVEY MAPS WITH PERMISSION
FROM THE CONTROLLER OF HM STATIONERY OFFICE. CROWN
COPYRIGHT RESERVED. LICENCE No. 100017728 2017.



REPRODUCED FROM ORDNANCE SURVEY MAPS WITH PERMISSION FROM THE CONTROLLER OF HM STATIONERY OFFICE. CROWN COPYRIGHT RESERVED. LICENCE No. 100017728 2017.

NOTES

- Do not scale from this drawing.
- All dimensions are in metres unless noted otherwise.

KEY

- ONSHORE DEVELOPMENT AREA
- EXISTING METALED ROAD BOUNDARY
- PROPOSED ACCESS BOUNDARY/ROAD MARKINGS
- PROPOSED ACCESS

VEHICLE TRACKING

Low Loader

Overall Length	16.154m
Overall Width	2.520m
Overall Body Height	3.393m
Min Body Ground Clearance	0.318m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.990m

VEHICLE BODY SWEEP PATH (FORWARD GEAR)

VEHICLE CHASSIS SWEEP PATH

DRAFT - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	BY	CHK	APP
REVISIONS					
CLIENT					
PROJECT					
DOGGER BANK SOUTH OFFSHORE WIND FARMS					
TITLE					
AC44 & CR10 PROPOSED ACCESS					
Westpoint, Peterborough Business Park, Peterborough, Cambridgeshire, PE2 8FZ. Tel +44(0)1733 334455 Email info@rhdhv.com www.royalhaskoningdhv.com					
DRAWN		CHECKED		APPROVED	
AA		SKT		ADR	
DATE	02.03.23	SCALE AT A1	1:500	CLIENTS REF.	
DRAWING No. PC2340-RHD-ZZ-ZZ-DR-R-0102					REVISION
CLIENT DWG No.					P01

© Haskoning UK Ltd



Dogger Bank South Offshore Wind Farms

**RWE Renewables UK Dogger
Bank South (West) Limited**

**RWE Renewables UK Dogger
Bank South (East) Limited**

**Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire, SN5 6PB**

