

Material and Deliveries Per Joint Location

Material	Assumption	Dimensions	HGV Deliveries	HGV Movements	Comment
Stone (Aggregate)	240	m3	48	96	40mx20m + bellmouth @ 0.3m depth. Factor 2 for density. 20T delivery capacity. TEMPORARY- (delivery/removal required)
Fencing	188	m	2	4	Perimeter fencing - 54m x 40m. 420m capacity per delivery. TEMPORARY- (delivery/removal required)
Concrete	54	m3	9	18	2 joint bays of 6m x 15m @ 0.3m concrete floor depth. 8m3 transport capacity + 2 HGV delivery for pre-cast concrete cask
Joints	4	no.	4	8	Joints, joint materials, winch, cable rollers. Assumed number of deliveries
Welfare Facilities	1	no.	4	8	Assumed 2 No. (delivery/removal required)
Fibre optics	1	no.	1	2	Assumed
Cable deliveries	4	no.	4	8	Cable drum low loader
Excavated material	180	m3	29	58	2 joint bays of 6m x 15m @ 1m removal (worst case displacement assuming concrete cask burial). Factor 2 for density, factor 1.6 for bulking. 20T delivery capacity. PERMANENT REMOVAL.
CBS	90	m3	12	24	2 joint bays of 6m x 15m @ 0.5m CBS depth. 8m3 transport capacity.
Plant required	3	no.	6	12	Assumed Plant required (delivery/removal required)
		Totals	119	238	

No.of joint locations 90 60 km route length divided by 800m cable lengths + 20% contingency
Total deliveries 10710 Deliveries per joint location x number of joint locations
Total movements 21420 Total movements per joint location x number of joint locations

NB: Vehicle numbers contingency not included.

Material to be delivered and removed (x2 deliveries)
Material to be delivered or removed only (x1 deliveries)

Typical Joint Bay Construction Activity

Construction Activity	Associated Vehicle Quantities	Total Deliveries	Total Movements
1. Site set-up (Hardstand, fencing & welfare)	27 HGVs	27	54
2. Plant in (excavator, winch etc)	2 HGVs + 1 low-loader	3	6
3. Materials in (concrete, joints, cable, CBS)	26 HGVs + 4 low-loaders	30	60
4. Materials out (excavated subsoil)	29 HGVs	29	58
5. Plant out (excavator, winch...)	2 HGVs + 1 low-loader	3	6
6. Site tear-down (hardstand, fencing & welfare)	27 HGVs	27	54
Totals		119	238

Typical Joint Bay Construction Programme

Construction Programme	Activity	Associated Total HGV Deliveries (Construction Activity Id)		Total Daily Deliveries	Total Daily movements
		Per Activity	Per week		
Week 1	Site set-up & excavate joint pits	27+3+29 (1,2,4)	59	12	24
Week 2	Pour joint bases & pull circuit 1	30+4 (3)	26	5	10
Week 3	Joint circuit 1 & pull circuit 2	2 (3)	2	2	4
Week 4	Joint circuit 2 & replace topsoil	2 (3)	2	2	4
Week 5	Site tear-down	27+3 (5,6)	30	6	12
Totals		119	119	n/a	n/a

Cable Pulling and Jointing Sectionalised Breakdown

Provided on a per annum basis for worst case two phase (2 circuits per phase) HVDC install

Cable Pull Section	Section Length [km]	No. of Joints	Inaccessible Length [km]	% of Section Inaccessible	Joint Bay HGV Deliveries (Total)	Joint Bay HGV Movements (Total)	Running Track HGV Deliveries (without 300m week cap)	Running Track HGV Movements (Total) (without 300m week cap)	Total Cable Route Section HGV Movements	Worst Case Daily Joint Bay HGV Movements (1 joint)	Worst Case Daily Movements at Accesses Serving Inaccessible Areas	Peak hour Total Movements (1 joints)
1	3.8	6	0.95	25%	714	1428	350	1400	2828	24	68	6.8
2	3.8	6	0.96	25%	714	1428	353	1412	2840	24	68	6.8
3	3.8	6	0.96	25%	714	1428	353	1412	2840	24	68	6.8
4	3.8	6	0.07	2%	714	1428	24	96	1524	24	68	6.8
5	3.8	6	0.20	5%	714	1428	72	288	1716	24	68	6.8
6	3.8	6	0.82	22%	714	1428	302	1208	2636	24	68	6.8
7	3.8	6	1.91	50%	714	1428	703	2812	4240	24	68	6.8
8	3.8	6	0.54	14%	714	1428	198	792	2220	24	68	6.8
9	3.8	6	0	0%	714	1428	0	0	1428	24	68	6.8
10	3.8	6	1.32	35%	714	1428	486	1944	3372	24	68	6.8
11	3.8	6	0.83	22%	714	1428	306	1224	2652	24	68	6.8
12	3.8	6	0.45	12%	714	1428	166	664	2092	24	68	6.8
13	3.8	6	1.4	37%	714	1428	516	2064	3492	24	68	6.8
14	3.8	6	0.27	7%	714	1428	100	400	1828	24	68	6.8
15	3.8	6	0.75	20%	714	1428	276	1104	2532	24	68	6.8
16	3.8	6	0.4	11%	714	1428	148	592	2020	24	68	6.8
Totals	60.8	96	11.81	19.42%	11424	22848	4353	17412	40260	n/a	n/a	n/a

Assumptions

16 Jointing gangs (one at each cable pull section)
5 week programmer per joint
Week 1 with highest intensity
Typical 300m running track completion per week

Running Track Deliveries per 100m.

Running Track Stone (Aggregate)	36
Fencing	0.8
Total Deliveries per 100m	36.8

Capped Movements per Week

Movements per Week	Weekly Deliveries	Weekly Movements	Daily Movements
300m	110.4	220.8	44

Cable Pulling and Jointing Access Routes		
Access ID*	Access Road ID	Access route to Access Road
AC3	Whimpwell Street	B1159, Vicarage Road, The Common, Coronation Road, Whimpwell Street
AC5	Grub Street	B1159, N Walsham Road, Grub Street
AC10	Walcott Green	B1159, N Walsham Road, Walcott Green
AC12	North Walsham Road	B1159, North Walsham Road
AC13	North Walsham Road	B1159, North Walsham Road
AC16	North Walsham Road	B1159, Happisburgh Road, N Walsham Road
AC18	Hole House Road	B1159, Happisburgh Road, N Walsham Road, Hole House Road
AC20	Edingthorpe	B1159, N Walsham Road, Bacton Road, Edingthorpe
AC21	Bacton Road	B1159, Happisburgh Road, N Walsham Road, Bacton Road
AC22	Edingthorpe Road	B1159, Happisburgh Road, N Walsham Road, Bacton Road, Edingthorpe Road
AC24	Edingthorpe	B1159, Bloodslat Lane, N Walsham Road, Plantation Road
AC25	Plantation Road	B1159, Bloodslat Lane, N Walsham Road, Plantation Road
AC28	North Walsham Road	B1159, Bloodslat Lane, N Walsham Road
AC32	Paston Road	B1159, Bloodslat Lane, N Walsham Road, Paston Road
AC34	Hall Lane	B1145, Bacton Road, Hall Lane
AC35	Hall Lane	B1159, Bloodslat Lane, N Walsham Road, Hall Lane
AC37	Little London Road	B1145, Little London Road
AC38	B1145	B1145
AC47	A149	A149
AC49	Felmingham Road	B1145, Felmingham Road
AC50	Felmingham Road	B1145, Felmingham Road
AC51	Brick Kiln Lane	B1145, Felmingham Road, Brick Kiln Lane
AC55	Suffield Road	B1145, Suffield Road
AC57	Church Road, into farm access	A140, High Noon Road, Church Road
AC58	Church Road	A140, High Noon Road, Church Road
AC62	Banningham Road	A140, Banningham Road
AC66	A140	A140
AC75	Unnamed Road	B1149,B1354 (Brickling Road), Unnamed Road
AC77	Blickling Road	B1149,B1354 (Brickling Road)
AC78	Blickling Road	B1149,B1354 (Brickling Road)
AC84	Heydon Road	B1149, The Street, Heydon Road
AC85	Heydon Road	B1149, The Street, Heydon Road
AC88	The Street	B1149, The Street
AC89	B1149	B1149
AC91	Southgate (Road to Southgate from B1149)	B1149, Southgate
AC92	Southgate (Road to Southgate from B1149)	B1149, Southgate
AC96	Heydon Road	B1149,B1145, Heydon Road
AC103	B1145 (Cawston)	B1149,B1145
AC104	B1145 (Cawston)	B1149,B1145
AC105	B1145 (Reepham)	B1145
AC107	Wood Dalling Road	B1145, Wood Dalling Road
AC108	Worlds End Lane	B1149,B1145, Wood Dalling Road, Worlds End Lane
AC110	B1145 (Bawdeswell)	A1067
AC111	B1145 (Bawdeswell)	A1067
AC112	B1145 (Bawdeswell)	A1067
AC121	Private Access Track (Adjacent to Well Lane)	A1067, B1145, Private Access Track (Adjacent to Well Lane)
AC122	Lime Kiln Road	A1067, Lime Kiln Road
AC126	Mill Street	A1067, Elsing Lane, Mill Street
AC127	Unnamed Road to Bylaugh Hall	A1067, Elsing Lane, Unnamed Road to Bylaugh Hall
AC128	Elsing Road	A1067, B1147, Elsing Road
AC131	Elsing Road	A1067, B1147, Elsing Road
AC132	Elsing Road, Private Access Track	A1067, B1147, Elsing Road, Private Access Track
AC135	Mowles Road, Farm Access Track	A47, B1147 (Norwich Road), Mowles Road, Farm Access Track
AC136	Norwich Road	A47, B1147 (Norwich Road), Mowles Road, Norwich Road
AC137	Luddenham Road	A47, B1147 (Norwich Road), Mowles Road, Luddenham Road
AC138	Swanton Road	A47, B1147 (Norwich Road), Mowles Road, Luddenham Road, Swanton Road
AC142	Hoe Road South	A47, B1147 (Norwich Road), Mowles Road, Luddenham Road, Swanton Road, Hoe Road South
AC143	Hoe Road South	A47, B1147 (Norwich Road), Mowles Road, Luddenham Road, Swanton Road, Hoe Road South
AC144	Hoe Road South	A47, B1147 (Norwich Road), Mowles Road, Luddenham Road, Swanton Road, Hoe Road South
AC145	Back Lane	A1067, B1145, B1110
AC147	B1146 (Holt Road)	A1067, B1145, B1110
AC148	B1146 (Holt Road)	A1067, B1145, B1110
AC151	Mill Lane	A1067, B1146, Gressenhall Road to Dillington
AC152	Church Lane	A1067, B1146, Gressenhall Road to Dillington, Church Lane
AC153	Church Lane	B1146, Rushmeadow Rd, Longham Rd
AC160	Unnamed Road	A47, Unnamed Road
AC161	Dale Road	A47, Dale Road
AC163	Dereham Road	A47, Greenbanks Road, Dereham Road
AC164	Dale Road	A47, Greenbanks Road, Dereham Road, Dale Road
AC165	Dereham Road	A47, Greenbanks Road
AC166	Bradenham Lane	A47, Bradenham Lane
AC167	Bradenham Lane	A47, Bradenham Lane
AC183	A47	A47

* Refer to DCO Document 2.5 - Access to Works Plan for locations of accesses