

East Anglia THREE

Appendix 27.5

Construction material quantities and
associated HGV demand (Single Phase)

Environmental Statement

Volume 3

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Appendix 27.05 Construction material quantities and associated HGV demand (Single Phase)

material quantities and HGV demand derived by construction consultants AECOM

Table 1

General Data	Value	General Data	Value	General Data	Value	General Data	Value	Miscellaneous allowances	Value
Haul road width (m)	5.5	Native soil backfill depth (m)	0.4	Number of jointing kits per jointing bay location	12	Transition bay height (m)	3	Haul road construction HGV allowance	20%
Haul road depth (mm)	0.197857143	Native soil density (t/m³)	1.8	Number of jointing kits per delivery	12	Transition bay length (m)	15	Cables installation HGV allowance	20%
Haul road stone density (t/m³)	1.8	Jointing bay width (m)	3	Length of cable tile (mm)	914	Volume of concrete per transition bay (m³)	90	Cable joint kit HGV allowance	0%
Geogrid mass (kg/m²)	0.22	Jointing bay height (m)	0	No. of tiles per delivery	200	Steel reinforcement for transition bay (t/m²)	0.065	Bentonite (cable installation) HGV allowance	10%
Number of jointing bays per location	2	Jointing bay length (m)	10	Trench depth (m)	1.5	Tipper truck capacity (t)	20	Jointing bay HGV allowance	100%
Number of trenches	2	Volume of concrete per jointing bay (m³)	6	Trench width (m)	0.8	Ready mix concrete truck capacity (m³)	6	Transition bay HGV allowance	25%
Number of cables per cable section	12	Steel reinforcement for jointing bay (t/m²)	0.065	CBS layer depth (m)	0.4	Bentonite density (kg/m³)	593		
Number of cables per delivery	1	Transition bay width (m)	10	CBS density (t/m³)	1.6	HDD HGV movements per km	0		

Table 2

Section	1	2	3	4	5	6	7	8	9	10	11	Total
Total haul road construction (remove or installation) HGVs	863	258	308	792	56	255	332	1,407	270	258	420	5,019
Total cable installation HGVs	117	102	88	87	59	73	103	161	30	88	29	937
Total cable joints HGVs	7	7	6	6	4	5	7	10	2	6	2	62
Total bentonite HGVs	22	26	18	13	15	12	30	43	9	20	6	214
Total jointing bay HGVs	216	252	218	212	148	180	258	364	76	218	72	2,214
Total Transition bay HGVs	148	0	0	0	0	0	0	0	0	0	0	148
Grand total deliveries	1,284	643	625	1,110	279	511	684	3,092	392	575	521	8,594
Grand total (two way movements)	2,568	1,286	1,250	2,220	558	1,022	1,368	6,184	784	1,150	1,042	17,188

Table 3a

Section	1	1	1	2	2	2	3	3	3	4	5	5	5	6	6
Joint bay	TB	1 to 3	4 to 6	7 to 9	10, 11	12, 13	14 to 16	17	18, 19	20 TO 25	26	27	28, 29	30-32	33, 34
Access point	A	B	C	D	E, F	G	H	I	J, K	L	O	R	S, T	U	V
Haul road length (m)	232	1,194	1,022	601	0	798	1,272	413	0	2,642	230	40	0	670	720
Haul road depth (m)	0.225	0.225	0.225	0.150	0.150	0.150	0.150	0.150	0.150	0.250	0.150	0.150	0.150	0.200	0.200
LFAC cable length in jointing bay (m)	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
LFAC cable length in ducts (m)	489	2,105	1,164	1,981	1,209	1,348	1,831	396	790	2,820	675	355	963	777	1,107
Number of jointing bay locations	0	3	3	3	2	3	3	1	2	6	1	1	2	3	2
Number of transitions bays	1	3	2	2	2	2	2	1	1	3	1	1	1	1	2
Number of transitions bays	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road Construction															
Volume of stone (m³)	285	1,473	1,262	495	0	660	1,048	338	0	3,633	190	33	0	553	594
Mass of stone (t)	512	2,651	2,272	891	0	1,188	1,886	609	0	6,539	342	59	0	995	1,069
Number of Stone HGVs	26	133	114	45	0	60	95	31	0	327	18	3	0	50	54
Mass of geogrid	0.28	1.44	1.23	0.73	0.00	0.97	1.54	0.50	0.00	3.20	0.28	0.05	0.00	0.81	0.87
Number of Geogrid HGVs	1	1	1	1	0	1	1	1	0	3	1	1	0	1	1
Haul Road Removal HGVs	27	134	115	46	0	61	96	32	0	330	19	4	0	51	55
Haul Road (remove or install) number of HGVs	54	268	230	92	0	122	192	64	0	660	38	8	0	102	110

Cables

Number of cables	12	48	36	36	24	24	36	12	24	72	12	12	24	36	24
Cables number of HGVs	12	48	36	36	24	24	36	12	24	72	12	12	24	36	24

Cable Joint Kits

Number of joint kits	12	48	36	36	24	24	36	12	24	72	12	12	24	36	24
Cable joint kits number of HGVs	1	3	3	3	2	2	3	1	2	6	1	1	2	3	2

Bentonite (Cable Installation)

Volume of fluid required (m³)	46	198	110	187	114	127	172	37	74	266	64	33	91	73	104
Mass of Bentonite (kg)	2,764	11,897	6,579	11,197	6,833	7,619	10,349	2,238	4,465	15,939	3,815	2,006	5,443	4,392	6,257
Bentonite HGVs	1	3	2	3	2	2	2	1	1	3	1	1	1	2	2
Water required (m³)	46	198	110	187	114	127	172	37	74	266	64	33	91	73	104
Water HGVs	2	7	4	7	4	5	6	2	3	9	3	2	4	3	4
Bentonite number of HGVs	3	10	6	10	6	7	8	3	4	12	4	3	5	4	6

Jointing Bays

Number of joint bays	0	6	6	6	4	4	6	2	4	12	2	2	4	6	4
Volume of concrete (m³)	0	36	36	36	24	24	36	12	24	72	12	12	24	36	24
Number of HGVs	0	6	6	6	4	4	6	2	4	12	2	2	4	6	4

Mass of steel (t)	0.00	2.34	2.34	2.34	1.56	1.56	2.34	0.78	1.56	4.68	0.78	0.78	1.56	2.34	1.56
Number of HGVs	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Total exported material HGVs	0	21	21	21	14	14	21	7	14	42	7	7	14	21	14
Concrete block HGVs	0	14	14	14	9	9	14	5	9	27	5	5	9	14	9
Pre-cast concrete slab HGVs	0	12	12	12	8	8	12	4	8	24	4	4	8	12	8
Jointing bays number of HGVs	0	54	54	54	36	36	54	19	36	106	19	19	36	54	36

Transition Bays

Number of transitions bays	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volume of concrete (m³)	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of HGVs	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Mass of steel (t)	14.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of HGVs	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total exported native soil volume (m³)	900	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total exported native soil mass (t)	1,620	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Native soil HGVs	81	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transition bays number of HGVs	118	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3b

Section	7	7	7	7	7	7	8	8	8	8	8	9	9	10	10	10	11
Joint bay	35.36	37	38.39	40	41	42	43.45	46	47.48	49.52	53	54	55	56.57	59.60	61.62	
Access point	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK, AL	AM	
Haul road length (m)	480	0	720	0	594	220	1,150	440	970	1,900	370	120	300	0	780	0	
Haul road depth (m)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LFAC cable length in jointing bay (m)	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	
LFAC cable length in ducts (m)	1,633	700	1,409	377	357	594	1,364	394	1,487	2,567	171	484	385	457	1,604	850	
Number of jointing bay locations	2	1	2	1	1	1	2	3	1	2	3	1	2	3	2	3	
Number of cable sections	2	1	2	1	1	1	2	1	2	3	1	1	1	2	2	1	
Number of transitions bays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Haul Road Construction																	
Volume of Stone (m³)	396	0	594	0	490	303	1,581	605	1,334	2,613	916	297	421	743	0	1,931	
Mass of Stone (t)	713	0	1,069	0	882	545	2,846	1,089	2,401	4,703	1,848	535	757	1,337	0	3,475	
Number of Stone HGVs	36	0	54	0	45	27	142	54	120	235	83	27	38	67	0	174	
Mass of geogrid	1	0	1	0	1	0	1	1	1	2	0	0	0	0	0	0	
Number of Geogrid HGVs	1	0	1	0	1	1	1	1	1	2	1	1	1	1	0	1	
Haul Road Removal HGVs	37	0	55	0	46	28	143	55	121	237	84	28	39	68	0	175	
Haul Road (remove or install) number of HGVs	74	0	110	0	92	56.45	286.625	110.9	242.075	474.25	168	56	78	136	0	350	
Cables																	
Number of cables	24	12	24	12	12	12	36	12	24	48	12	12	12	12	24	36	24
Cables number of HGVs	24	12	24	12	12	12	36	12	24	48	12	12	12	12	24	36	24
Cable Joint Kits																	
Number of joint kits	24	12	24	12	1	24	72	24	48	72	24	24	24	48	72	48	
Cable joint kits number of HGVs	2	1	2	1	1	1	3	1	2	3	1	1	1	2	3	2	
Bentonite (Cable Installation)																	
Volume of fluid required (m³)	154	37	133	36	52	56	128	37	140	242	16	46	36	43	151	89	
Mass of Bentonite (kg)	9,230	2,238	7,964	2,131	2,792	3,357	7,709	2,227	8,405	14,509	996	2,736	2,176	2,583	9,066	5,369	
Bentonite HGVs	2	1	2	1	2	2	3	2	3	2	2	2	2	3	2	3	
Water required (m³)	154	37	133	36	56	56	128	37	140	242	16	46	36	43	151	89	
Water HGVs	6	2	5	2	2	2	5	2	5	9	1	2	2	2	6	3	
Number of HGVs	8	3	7	3	4	4	8	4	8	14	3	4	4	4	9	5	
Jointing Bays																	
Number of joint bays	4	2	4	2	2	2	6	2	4	6	2	2	2	4	6	4	
Volume of concrete (m³)	24	12	24	12	12	12	36	12	24	36	12	12	12	24	36	24	
Number of HGVs	4	2	4	2	2	2	6	2	4	6	2	2	2	4	6	4	
Mass of steel (t)	2	1	2	1	1	1	2	1	2	2	1	1	1	2	2	2	
Number of HGVs	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Total exported material HGVs	14	7	14	7	7	7	21	7	14	21	7	7	7	14	21	14	
Concrete block HGVs	9	5	9	5	5	5	14	5	9	14	5	5	5	9	14	9	
Pre-cast concrete slab HGVs	6	4	6	4	4	4	12	4	6	12	4	4	4	6	12	6	
Jointing bays number of HGVs	36	19	36	19	19	19	54	19	36	54	19	19	19	36	54	36	
Transition Bays																	
Number of transitions bays	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Volume of concrete (m³)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Number of HGVs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Mass of steel (t)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Number of HGVs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total exported native soil volume (m³)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total exported native soil mass (t)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Native soil HGVs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transition bays number of HGVs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Table 4a

Section	7	7	7	7	7	7	8	8	8	8	8	9	9	10	10	10	11
Number of HGVs with Misc. Allowances																	
Total haul road construction (removal or installation) HGVs	65	322	276	111	0	147	231	77	0	792	46	10	0	123	132		
Total cable installation HGVs	15	58	44	44	29	29	44	15	29	87	15	15	29	44	29		
Total cable joints HGVs	1	3	3	3	2	2	3	1	2	6	1	1	2	3	2		
Total bentonite HGVs	4	11	7	11	7	8	9	4	5	13	5	4	6	5	7		
Total jointing bay HGVs	0	108	108	72	72	72	108	38	72	212	38	38	72	108	72		
Total Transition bay HGVs	148	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Table 4b

Section	7	7	7	7	7	7	8	8	8	8	8	9	9	10	10	10	11
Number of HGVs with Misc. Allowances																	
Total haul road construction (removal or installation) HGVs	89	434	377	111	0	147	231	77	0	792	46	10	0	123	132		
Total cable installation HGVs	29	15	29	15	15	15	44	15	29	58	15	15	29	44	29		
Total cable joints HGVs	2	1	2	1	1	1	3	1	2	3	1	1	2	3	2		
Total bentonite HGVs	9	4	8	4	5	5	9	5	9	15	4	5	5	5	10	6	
Total jointing bay HGVs	72	38	72	38	38	38	108	38	72	198	38	38	72	108	72		
Total Transition bay HGVs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Table 5a

Section	7	7	7	7	7	7	8	8	8	8	8	9	9	10	10	10	11
Grand total deliveries	233	502	438	277	110	258	395	135	108	1,110	105	68	109	283	242		
Grand total (two way movements)	466	1,004	876	554	220	516	790	270	216	2,220	210	136	218	566	484		

Table 5b

Section	7	7	7	7	7	7	8	8	8	8	8	9	9	10	10	10	11
Grand total deliveries	201	58	243	58	170	58	127	59	193	403	74	9	127	153	273	165	529
Grand total (two way movements)	402	116	486	116	340	254	1,016	386	806	1,508	520	254	306	544	330	1,058	

Appendix 27.5 ends here