GHD Assumed Construction Materials and Associated HGV Delivery Derivation

Note: Materials in Bold/Italic are to be both delivered and removed from site

Note: The following assumptions are for the purposes of indicative worst case traffic and transport assessments, based on high level consideration for typical construction practices.

Location	Material	Assumption	Dimensions	HGV Deliveries	Comment
Landfall HDD	***Mobilisation/Demobilisation***	***80***	***HGV Loads***	***80***	***Mobilisation and Demobilisation generally consist of 20 HGV loads delivered over 2 days with a crane on site (150t-300t) to position equipment. X2 for parallel rigs***
	Stone (Aggregate)	***1,800***	***m3***	***180***	***50mx60m compound dimensions with assumed hard standing (aggregate stone) depth of 0.3m and coverage of 50% of site. (TEMPORARY, will require removal. X2 for parallel rigs***
	Water	50,000	L	5	Used to generate drilling slurry (bentonite). If mains water supply not avalable, utilise 10,000L water tankers. X2 for parallel rigs
	Geotextiles	***12,000***	***m2***	***8***	***50mx60m compound dimensions (TEMPORARY, will require removal. X2 for parallel rigs***
	Drilling Rig	***100***	***T***	***4***	***1 for each parallel site***
	Fencing	***880***	***m***	***3***	***Perimeter fencing (60m x 50m) (utilising temporary fencing panels - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal) x2 for parallel rigs***
	Excavated material (landfall)	1,991	m3	319	assumed up to 1000m drill length, 6x drills, 0.65m diameter bore - to be removed from site
Transition Pit	Concrete	90	m3	12	2 transition pits, each 10mx15m, assumed concrete slab depth of 0.3m
	Excavated Material	90	m3	15	Equivalent to concreted floor - to be removed from site (displaced by concrete slab)
			Totals	**626**	
Onshore Trenchless (NV & NB) (17 No. locations)	***Mobilisation/Demobilisation***	***40***	***HGV Loads***	***680***	***Mobilisation and Demobilisation generally consist of 20 HGV loads delivered over 2 days with a crane on site (150t-300t) to position equipment***
	Stone (Aggregate)	***3,750***	***m3***	***6375***	***100mx50m and 150m x 50m compound dimensions (worst case trenchless with stop end) with assumed hard standing (aggregate stone) depth of 0.3m and coverage of 50% of site. (TEMPORARY, will require removal)***
	Water	25,000	L	43	Used to generate drilling slurry (bentonite). If mains water supply not avalable, utilise 10,000L water tankers.
	Geotextiles	***25,000***	***m2***	***284***	***100mx50m and 150m x 50m compound dimensions (worst case trenchless with stop end) (TEMPORARY, will require removal)***
	Drilling Rig	***100***	***T***	***34***	
	Fencing	***700***	***m***	***29***	***Perimeter fencing (100mx50m and 150m x 50m) (utilising temporary fencing panels - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal)***
	Excavated material (crossings)	332	m3	903	assumed up to 250m drill length, 4x drills (NV & NB), 0.65m diameter bore - to be removed from site
			Totals	**8348**	
Mobilisation Area (14* No.)	***Stone (Aggregate)***	***3,000***	***m3***	***3900***	***100mx100m compound dimensions with assumed hard standing (aggregate stone) depth of 0.3m and coverage of 50% of site. (TEMPORARY, will require removal)***
	Fencing	***800***	***m***	***25***	***Temporary fencing panels***
	Welfare facilities and associated infrastructure	***8***		***104***	
			Totals	**4029**	
Cable Route (NV & NB HVDC)	Cement Bound Sand	84,915	m3	10615	60km section length x 1m trench width x 0.46m depth x 4 trenches (NV&NB HVDC) - volume of ducts (2x 260mm ducts per trench)
	Trench Excavated Material	110,400	m3	17664	Assumed displaced soil due to CBS (PERMANENT REMOVAL)
	Running track stone (aggregate)	***216,000***	***m3***	***21600***	***60 km route length x 6m width x 0.3 depth x 1 running track (TEMPORARY) - worst case assumption, bog mats or other geotextile could be used***
	Fencing	***240,000***	***m***	***572***	***route edging (60 km length x 2 sides) - worst case assumption that entire route length is fenced off (utilising temporary fencing panels - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal)***
	Ducts	400	Deliveries	400	
	Cable Tiles	160	Deliveries	160	
	Fibres	-	Deliveries	0	Refer to Appendix 24.4
	Cable Drums	-	Deliveries	0	Refer to Appendix 24.4
			Totals	**51011**	
Joint Pits (NV Only HVDC)	Concrete	-	m3	0	Refer to Appendix 24.4
	Excavated Material	-	m3	0	Refer to Appendix 24.4
	Cement Bound Sand	-	m3	0	Refer to Appendix 24.4
	Cable Joints	-	No.	0	Refer to Appendix 24.4
			Totals		
HVDC Onshore Substation (NV Only)	Concrete	14,625	m3	1,829	250mx300m HVDC dimensions with assumed concrete depth of 0.3m and coverage of 65% of site.
	Stone (Aggregate)	7,875	m3	788	250mx300m HVDC dimensions with assumed hardcore depth of 0.3m and coverage of 35% of site.
	Fencing	1,100	m	3	perimeter (utilising temporary fencing panels - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal)
	Supergrid Transformer	8	No.	8	15m x 5m x 5.5m ~250T
	Converter Building	2	No.	50	Likely steel frame cladded. 110m x 70m x 19m each
	Associated Electrical Equipment	-	-	50	Refer to Chapter 5 - Project Description for further details of additional electrical assets.
	Access Road	5,400	m3	540	2.0 km route length x 6m width x 0.450 depth x 1 Access road
	Excavated Material	4,050	m3	648	Attenuation pond displaced material, to be removed.
			Totals	**3916**	
Onshore Substation (Temp Compound) (NV Only)	***Stone (Aggregate)***	***6,000***	***m3***	***600***	***100mx200m compound dimensions with assumed hard standing (aggregate stone) depth of 0.3m and coverage of 50% of site. (TEMPORARY, will require removal)***
	Fencing	***1,200***	***m***	***3***	***perimeter (utilising temporary fencing panels - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal)***
	Welfare facilities and associated infrastructure	***16***		***16***	
	Access Road	***1,800***	***m3***	***180***	***0.5 km route length x 6m width x 0.3 depth x 1 running track (TEMPORARY) - worst case assumption, bog mats or other geotextile could be used***
			Totals	**799**	
NGET Substation (NV Only)	Concrete	2,610	m3	327	145mx200m extension with assumed concrete depth of 0.3m and coverage of 30% of site.
	Stone (Aggregate)	6,090	m3	609	145mx200m extension dimensions with assumed hardcore depth of 0.3m and coverage of 70% of site.
	Fencing	400	m	4	Pallisade Perimeter extension (2x200m length - assumed existing 145m fence is removed and reused at new boundary)
	Busbar steelwork and gantrys	400	m	40	1x200m extension to busbar + gantries (50m deliveries) + New Towers (each 50m tall)
	Excavated Material	2,100	m3	336	Attenuation pond displaced material, to be removed.
			Totals	**1316**	
NGET Substation (Temp Compound) (NV Only)	***Stone (Aggregate)***	***20,250***	***m3***	***2025***	***300mx150m + 150m x 150m compound dimensions with assumed hard standing (aggregate stone) depth of 0.3m and coverage of 50% of site. (TEMPORARY, will require removal)***
	Fencing	***3,000***	***m***	***8***	***perimeter (utilising temporary fencing panels - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal)***
	Welfare facilities and associated infrastructure	***16***		***16***	
	Access Road	***1,800***	***m3***	***180***	***0.5 km route length x 6m width x 0.3 depth x 1 running track (TEMPORARY) - worst case assumption, bog mats or other geotextile could be used***
	Temporary Overhead Line	***40***		***40***	***3x Temp towers and line***
			Totals	**2269**	
A47 Highways Works with mobilisation area*	Concrete/Asphalt	625	m3	79	250m x 5m centre lane addition @ 0.5m depth
	Stone (Aggregate)	***3,000***	***m3***	***300***	***100mx100m compound dimensions with assumed hard standing (aggregate stone) depth of 0.3m and coverage of 50% of site. (TEMPORARY, will require removal)***
	Fencing	***800***	***m***	***2***	***perimeter (utilising temporary fencing panels - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal)***
	Welfare facilities and associated infrastructure	***16***		***16***	
			Totals	**397**	

* 13 Mobilisation area associated cable corridor with 1 mobilisation area associated with the A47 highway works detailed seperately within Appendix table.