WHITESTONE
solar farm

WHITESTONE SOLAR FARM

Volume 5 - Reports and Statements

Outline Cable Construction Method Statement

Application Document ref. EN0110020/APP/5.19
Revision 01
June 2026

Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009
Regulation 5(2)(q)

Document status					
Version	**Purpose of document**	**Authored by**	**Reviewed by**	**Approved by**	**Review date**
Rev01	DCO Submission	CP	AD	DL	June 2026

Approval for issue		
Whitestone Net Zero Ltd.	JT	1 June 2026

The following report and supporting infographics have been produced by human authors. Artificial Intelligence (AI) has not been used to create or alter the technical meaning of these materials. AECOM is technology-enabled and may use technology including AI in service delivery, in compliance with all laws applicable to it. Where AI has been used as an administrative support function, this has been appropriately validated by human authors.

AECOM take full ownership and responsibility for the report, notwithstanding that ancillary technology (including AI tools) may have been used in service provision.

Prepared by:

AECOM

Prepared for:

Whitestone Net Zero Ltd.

Contents

Tables

Glossary

Term	Meaning
The Applicant	Whitestone Net Zero Ltd
The Proposed Development	The proposed Whitestone Solar Farm.
The Site	The land planned to be used for solar PV array and associated infrastructure, BESS, substations, and landscaping and habitat enhancement. The Site is split into W1, W2, and W3.
Whitestone 1 (W1)	The northern parcels of the Whitestone Solar Farm.
Whitestone 2 (W2)	The middle parcels of the Whitestone Solar Farm.
Whitestone 3 (W3)	The southern parcels of the Whitestone Solar Farm.

Acronyms

Acronym	Meaning
BESS	Battery Energy Storage System
BGL	Below Ground Level
CAT	Cable Avoidance Tool
CCTV	Closed-circuit television
CTM	Conventional Tunnelling Method
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ES	Environmental Statement
HDD	Horizontal Directional Drilling
HGV	Heavy goods vehicle
NG	National Grid
NGET	National Grid Electricity Transmission

Acronym	Meaning
NGR	National Grid Reference
NJUG	National Joint Utilities Group
NSIP	Nationally Significant Infrastructure Project
oCCMS	Outline Cable Construction Method Statement
oCEMP	Outline Construction Environmental Management Plan
OHTL	Overhead Transmission Line
PRoW	Public Right of Way
PV	Photovoltaic
TBM	Tunnel Boring Machine
W1	Whitestone 1
W2	Whitestone 2
W3	Whitestone 3

Units

Units	Meaning
km	Kilometre
kV	Kilovolt
MW	Megawatt

1 OUTLINE CABLE CONSTRUCTION METHOD STATEMENT

1.1 Overview

Introduction

1.1.1 This outline Cable Construction Method Statement (oCCMS) has been prepared on behalf of Whitestone Net Zero Ltd ('the Applicant') to provide details of how the Cable Corridor is to be constructed to inform the assessment for the Environmental Statement (ES) in relation to the Development Consent Order (DCO) Application for the construction, operation and maintenance, and decommissioning of Whitestone Solar Farm (hereafter referred to as the 'Proposed Development').

The Order Limits

1.1.2 This extent of the Order Limits are shown in **Location Plans [EN0110020/APP/2.1]** and the Proposed Development is described in full in **ES Chapter 5: The Proposed Development [EN0110020/APP/6.5]** and shown spatially on the **Works Plans [EN0110020/APP/2.3].**

The Proposed Development

1.1.3 The Proposed Development involves the construction, operation and maintenance, and decommissioning of more than 100 megawatts (MW) of solar photovoltaic (PV) arrays, Battery Energy Storage System (BESS), onsite substations and supporting infrastructure, and grid connection infrastructure. The grid connection infrastructure would connect the Proposed Development to the National Grid at the new National Grid substation at Brinsworth (Long Lane 400 kilovolt (kV) Substation), located east of Long Lane, Rotherham. National Grid have applied to Rotherham Metropolitan Borough Council for the development of this new substation which is intended by National Grid to be operational in time for the Proposed Development to connect in 2029. This substation is therefore not included in the Proposed Development and is subject to a separate planning application taken forward by National Grid.

1.1.4 As the Proposed Development would have a generating capacity in excess of 100MW, it is considered to be a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008.

1.1.5 The Proposed Development would be located within the Order Limits. The Proposed Order Limits encompass the total area of the project comprising the Site and Cable Corridor Options. The Site is specifically the land that is planned to be used for solar PV array and associated infrastructure, BESS, substation, landscaping and habitat enhancement. The Site is split into Whitestone 1 (W1), Whitestone 2 (W2), and Whitestone 3 (W3).

1.1.6 This oCCMS relates to an approximately 20 kilometre (km) long cable corridor for the installation of both a 400kV underground electrical export cable, and up to 400kV interconnecting cables (hereafter collectively referred to as 'Cable Corridor') to connect the Proposed Development to the new substation in Brinsworth (Long Lane 400kV Substation).

1.2 Purpose

1.2.1 The purpose of this oCCMS is to provide details of how the Cable Corridor is to be constructed to inform the assessment for the Environmental Statement (ES).

1.2.2 The components described in this oCCMS comprise:

- Cable Corridor;
- Connection to new National Grid Long Lane 400kV Substation near Brinsworth; and
- Access points and haul route during construction.

1.3 Grid Connection Cable

1.3.1 In excess of 100MW of electricity generated by the Proposed Development will be exported to the NETS via 400kV circuits from the Proposed Development's new substations to the proposed new 400kV NGET substation at Long Lane, Brinsworth.

1.3.2 The total length of the Cable Corridor is approximately 20km and it will accommodate cables with operating voltages of up to 400kV. The Cable Corridor will be within the Order Limits, shown in **ES Figure 3.1: Order Limits [EN0110020/APP/6.19]**.

1.3.3 Due to the scale of the Proposed Development, it has been split into three distinct areas, shown in **ES Figure 3.2: Site Referencing [EN0110020/APP/6.19]**, which are referred to as:

- W1, located south of Conisbrough (centred on NGR SK 504963);
- W2, located between Aston in the west and Dinnington in the east (centred on NGR SK 477874);
- W3, located south of Wales and Kiveton Park (centred on NGR SK 481808).

1.3.4 The Cable Corridor crosses a range of existing constraints along its route, such as the M1, M18 motorways, other minor roads, hedgerows, a railway line, Overhead Transmission Lines (OHTL), the Chesterfield Canal, and various watercourses. A list of major crossings and their relevant areas is provided in the following tables: **Table 1-1, Table 1-2, Table 1-3, Table 1-4** and **Table 1-5.**

1.3.5 The Cable Corridor crossings have been separated into crossings within internal areas (W1, W2 and W3) and crossings between W1 and W2, and between W2 and W3. These are referenced in the following tables:

- **Table 1-1:** Cable Corridor Crossings within W1 (Cable Route A);
- **Table 1-2:** Cable Corridor Crossings encountered between W1 and W2 (Cable Route B);

- **Table 1-3:** Cable Corridor Crossings within W2 (Cable Route C, D-1, D-2, F, G-1, G-2, H, I-1, I-2, J, K-1 and K-2);
- **Table 1-4:** Cable Corridor Crossings encountered between W2 and W3 (Cable route L); and
- **Table 1-5:** Cable Corridor Crossings within W3 (Cable Route M and N).

1.3.6 Refer to **ES Figure 3.3: Detailed Site Referencing [EN0110020/APP/6.19]** for the detailed Cable Corridor route.

Table 1-1: Cable Corridor Crossings within W1

Crossing Number	Cable Route Section	Crossing type	Approximate coordinates (Easting Northing)	Drawing reference
1	A	Hedgerow	451083.767 396095.716	-
2	A	Hedgerow	451100.765 396090.320	-

Table 1-2: Cable Corridor Crossings encountered between W1 and W2

Crossing Number	Cable Route Section	Crossing type	Approximate coordinates (Easting Northing)	Drawing reference
3	B	Watercourse	450309.059 395262.380	**ES Figure 10.15: Watercourse Crossings [EN0110020/APP/6.19]**
4	B	Watercourse	450701.496 395008.585	**ES Figure 10.15: Watercourse Crossings [EN0110020/APP/6.19]**
5	B	OHL	450482.861 394559.325	-
6	B	Hedgerow	450583.82 394322.707	-
7	B	OHL	450639.270 394277.543	-
8	B	West of M18 Common Lane & two hedgerows [Horizontal Directional Drilling (HDD)]	450580.538 394068.653	-
9	B	Hedgerow	450561.361 393972.091	-

Crossing Number	Cable Route Section	Crossing type	Approximate coordinates (Easting Northing)	Drawing reference
10	B	Hedgerow	450511.723 393883.716	-
11	B	Hedgerow	450461.614 393847.632	-
12	B	Watercourse	450357.782 393719.413	**ES Figure 10.15: Watercourse Crossings [EN0110020/APP/6.19]**
13	B	Tree line	450035.324 393477.932	-
14	B	Unnamed road – minor road	450031.382 393473.852	-
15	B	Tree line	450028.238 393470.898	-
16	B	OHL and hedgerow	449974.423 393381.428	-
17	B	OHL - pylon	449851.087 392709.321	-
18	B	Hedgerow and trees	449892.799 392566.727	-
19	B	Watercourse	449895.330 393565.361	**ES Figure 10.15: Watercourse Crossings [EN0110020/APP/6.19]**
20	B	OHL - tower	449773.795 392279.709	-
21	B	Bawtry Road A631 – Road / Hedgerow	449726.555 392160.400	-
22	B	West of M18 Sandy Lane – Road	449592.461 391386.867	-
23	B	OHL – pylon	449410.484 391197.108	-

Table 1-3: Cable Corridor Crossings within W2

Crossing Number	Cable Route Section	Crossing type	Approximate coordinates (Easting Northing)	Drawing reference
24	C	Hedgerow	448863.893 390306.410	-

Crossing Number	Cable Route Section	Crossing type	Approximate coordinates (Easting Northing)	Drawing reference
25	C	Hedgerow	448776.520 390235.179	-
26	C	Moat Lane – Road	448608.677 390183.618	-
27	C	Watercourse	448505.156 390129.284	**ES Figure 10.15: Watercourse Crossings [EN0110020/APP/6.19]**
28	C	Hedgerow	448478.002 390120.559	-
29	C	Morthen Road B6060	448321.058 390103.157	-
30	C	Hedgerow	448313.054 390102.940	-
31	C	Hedgerow	448254.879 390102.068	-
32	C	Hedgerow	448154.459 390099.644	-
33	C	Watercourse	447913.136 390033.734	**ES Figure 10.15: Watercourse Crossings [EN0110020/APP/6.19]**
34	C	Hedgerow	447864.941 390022.337	-
29	C	Hedgerow	447104.478 389860.456	-
30	C	Morthen Lane B6410 – Road	447105.365 389853.137	-
31	C	Hedgerow	447106.032 389844.933	-
	C	Watercourse	446870.850 389577.227	**ES Figure 10.15: Watercourse Crossings [EN0110020/APP/6.19]**
33	C	OHL – pylon	446847.637 389495.110	-

Crossing Number	Cable Route Section	Crossing type	Approximate coordinates (Easting Northing)	Drawing reference
34	C	Hedgerow	446809.963 389387.162	-
35	C	West of Junction 32 M1 [HDD]	446540.989 389225.432	-
36	C	Hedgerow	446372.126 389317.020	-
37	D-1	OHL – pylon	446274.851 389341.279	-
38	D-1	OHL – pylon	446149.154 389446.906	-
39	D-1	Hedgerow	446037.417 389579.287	-
40	D-1	OHL - tower	446031.953 389581.029	-
41	D-1	Watercourse	445737.762 389742.606	**ES Figure 10.15: Watercourse Crossings [EN0110020/APP/6.19]**
42	D-1	Hedgerow	445685.056 389773.039	
43	D-1	Hedgerow	445586.077 389812.337	
44	D-1	Road - Rectory Drive	445175.619 389820.848	
45	D-1	Road - Pleasley Road A618	444862.987 389615.566	
46	D-1	Watercourse	445040.629 389725.863	**ES Figure 10.15: Watercourse Crossings [EN0110020/APP/6.19]**
47	D-1	Hedgerow	445029.679 389714.356	-
48	D-1	OHTL – pylon	444922.694 389606.992	-
49	D-1	Hedgerow	444878.127 389593.213	-

Crossing Number	Cable Route Section	Crossing type	Approximate coordinates (Easting Northing)	Drawing reference
50	D-1	Pleasley Road A618	444866.884 389599.017	-
51	D-1	Hedgerow	444852.014 389596.370	-
52	D-1	OHTL – pylon	444810.913 389592.208	-
53	D-1	Hedgerow	444720.129 389557.389	-
54	D-2	M1 [HDD]	444442.645 389324.454	-
55	D-2	Hedgerow	444492.779 389190.329	-
56	D-2	Hedgerow	444746.006 388681.800	-
57	F	Treeline	444666.837 388488.640	-
58	F	Watercourse	444691.453 388494.122	**ES Figure 10.15: Watercourse Crossings [EN0110020/APP/6.19]**
59	F	Hedgerow	444737.995 388502.472	-
60	F	Pleasley Road A618	445018.790 388572.304	-
61	F	Hedgerow	445035.419 388574.761	-
62	F	Hedgerow	445048.416 388576.868	-
63	F	Hedgerow	445197.057 388631.433	-
64	F	Hedgerow	445507.327 388737.082	-
65	F	Hedgerow	445854.163 388833.122	-
66	F	Hedgerow	445963.433 388841.157	-
67	F	Guithwaite Common Lane	445972.765 388843.309	-

Crossing Number	Cable Route Section	Crossing type	Approximate coordinates (Easting Northing)	Drawing reference
68	F	Hedgerow	445978.506 388842.830	-
69	G-1	Hedgerow	444231.334 388135.754	-
70	G-1	Hedgerow	444397.727 388232.636	-
71	G-2	Hedgerow	444265.265 387685.182	-
72	H	Hedgerow	446647.767 388338.570	-
73	I-1	Farm track unnamed	448341.859 387587.016	-
74	I-1	M1 HDD	448106.838 387588.777	-
75	I-2	Hedgerow	447858.137 386841.599	-
76	I-2	M1 HDD	447993.400 386816.426	-
77	I-2	Hedgerow	4483264.315 386768.355	-
78	I-2	Hedgerow	448383.776 386758.243	-
79	J	Hedgerow	449713.129 385392.773	-
80	J	Todwick Road B6463	449719.182 385390.391	-
81	J	Hedgerow	449724.345 385387.316	-
82	K-1	Treeline	450412.891 385115.150	-
83	K-1	Watercourse	450431.096 385106.441	**ES Figure 10.15: Watercourse Crossings [EN0110020/APP/6.19]**

Table 1-4: Cable Corridor Crossings encountered between W2 and W3

Crossing Number	Cable Route Section	Crossing type	Approximate coordinates (Easting Northing)	Drawing reference
94	L	Hedgerow	451186.377 384193.900	-
95	L	A57 Sheffield Road	451182.666 384185.191	-
96	L	Hedgerow	451178.146 384175.997	-
97	L	Axle Lane	451111.561 383792.829	-
98	L	Stone wall	451250.811 383250.810	-
99	L	B6059 Dog Kennel Hill	451254.173 383247.889	-
100	L	Field fenceline	451257.058 383244.402	-
101	L	Unnamed minor road	451647.917 382936.211	-
102	L	Unnamed minor road	451668.102 382598.641	-
103	L	Railway and Chesterfield Canal watercourse crossing [HDD]	451685.661 382230.340	-
104	L	Hedgerow	451620.013 381938.075	-
105	L	Lady Field Road	451612.035 381935.876	-
106	L	Hedgerow	451607.791 381932.646	-
107	L	Hedgerow	450937.195 381690.032	-
108	L	Packman Lane	450931.207 381689.690	-
109	L	Hedgerow	450924.705 381689.690	-
110	L	Hedgerow	450432.940 381679.548	-
111	L	Hedgerow	449946.531 381811.421	-

Crossing Number	Cable Route Section	Crossing type	Approximate coordinates (Easting Northing)	Drawing reference
112	L	Manor Road	449940.396 381814.593	-
113	L	Hedgerow	449929.098 381818.650	-
114	L	Watercourse	449898.221 381824.810	**ES Figure 10.15: Watercourse Crossings [EN0110020/APP/6.19]**
115	L	Hedgerow	449323.919 381628.939	-
116	L	Hard Lane	449320.221 381629.492	-
117	L	Hedgerow	449315.339 381629.290	-

Table 1-5: Cable Corridor Crossings within W3

Crossing Number	Cable Route Section	Crossing type	Approximate coordinates (Easting Northing)	Drawing reference
118	M	OHL – tower	448740.041 381238.773	-
119	M	Hedgerow	448737.980 381232.434	-
120	M	Hedgerow	448688.466 381121.130	-
121	M	Hedgerow	448633.475 381050.997	-
122	M	OHL – pylon	448625.081 380911.697	-
123	M	Hedgerow	448627.406 380900.853	-
124	M	Hedgrow	448621.725 380721.743	-
125	M	Woodall Lane	448620.892 380717.706	-
126	M	OHL - tower	448621.011 380713.549	-
127	M	Hedgerow	448621.192 380712.215	-

Crossing Number	Cable Route Section	Crossing type	Approximate coordinates (Easting Northing)	Drawing reference
128	M	Hedgerow	448610.278 380619.890	-
129	N	M1 South of Woodall Services [HDD]	447864.728 379705.581	-

1.4 Construction Methods

1.4.1 It is expected that most of the cabling installed for the Proposed Development will be laid below ground, with the remainder installed on cable trays or mounting structures under the solar arrays within the Site. The construction method for installation of the Cable Corridor will likely be open cut trench, with trenchless methods used where required in some locations. A trenchless method will be used to minimise the disruption and impact on various crossing points, such as roads, railways, paths, existing infrastructure and environmentally protected areas. The use of a trenchless method will be dependent on the type of crossing.

Open Cut Trenching

1.4.2 The open cut trenching method can install cables via direct burying or ducting.

1.4.3 The direct buried method typically requires longer sections (up to 500m) of trenching to be exposed at a time to allow for the cable to be rolled / laid into the trench before backfilling.

1.4.4 Ducting of cables utilises shorter sections of exposed trenching at a time where the ducts are typically installed and backfilled in 20 to 40m sections, which is substantially shorter than the sections required for direct burying. Following this, the cables are installed by being pulled through the ducts. It is anticipated that ducting will be the preferred method for the Proposed Development due to shorter sections of trench being exposed at a time.

1.4.5 For the open cut trench sections of the Cable Corridor, a typical working width corridor of 40m is anticipated. This area will include the open cut trench for laying of the 400kV cables (direct burying or ducting), temporary haul road (for vehicles, plant and access to joint bays), temporary drainage ditch and a laydown area for the storage of topsoil following excavation of the cable trench.

1.4.6 The temporary haul road will be a maximum of 5m wide for typical straight sections and temporary track matting will be used where required. Turning bays and passing places will be provided in appropriate locations and exceed 5m in width.

1.4.7 For open cut cable trenches, the maximum width is 2m set within the Cable Corridor. This applies except where jointing bays or HDD sections are located.

1.4.8 An example showing the cross-section of a typical 400kV open cut cable trench is shown in **Appendix A.1**, with an indicative maximum width of 1100mm and depth to cover of 1200mm.

1.4.9 In locations where open cut trenches cross existing buried utilities or structures, the depth of the open cut cable trench shall meet minimum cover and separation requirements as defined by the utility asset owner or as defined by the National Joint Utilities Group (NJUG).

1.4.10 Topsoil and subsoil will be stored in separate bunds to avoid mixing. Guidance on indicative stripping depths states 300mm for topsoil and 700mm for subsoil removal. However, soil horizons should be stripped onsite according to their individual compositions. The building and storage of soil storage bunds should follow the guidance provided in Sheets B and C of The Institute of Quarrying Good Practice Guide for Handling Soils in Mineral Workings[1].

1.4.11 The use of open cut trenching under OHTLs should follow 'Avoiding danger from overhead power lines Guidance Note GS6'[2] to maintain safe distances and heights during OHTL crossing construction. Implementation of goalpost-controlled crossing points will be required for plant movements under the OHTLs.

Trenchless Crossings

1.4.12 There are different viable trenchless methods that can be used for the Cable Corridor installation, and these are discussed in more detail in Sections 1.6.18, 1.6.19 and 1.6.20 below. The selection of trenchless methods will be dependent on the type of crossing, alignment, required length of crossing, ground conditions and depth. The method will be appropriately selected on a crossing-by-crossing basis and will likely be one of the following:

- HDD;
- Tunnel Boring Machine (TBM) Tunnelling:
  - Microtunnelling / Pipe Jacking; and
  - Conventional Tunnelling Method (CTM).

1.4.13 An example of an indicative cross-section of a trenchless crossing is shown in **Appendix A.2**.

1.4.14 Trenchless crossings require launch and reception pits, for an illustrative example of a 25m by 20m launch pit working area layout for a 400kV connection see **Appendix A.3.**

Substation Connection near Brinsworth

1.4.15 The Cable Corridor will connect the Proposed Development to the National Grid (NG) point of connection, into the new proposed Long Lane 400kV Substation near Brinsworth.

1.4.16 NGET are building this new substation nearby to the existing Brinsworth Substation as part of their works for upgrading the grid.

1.4.17 The export cable's point of connection within NGET's proposed new Long Lane 400kV substation is to be confirmed closer to the time of construction.

1.4.18 The location of the substations relevant to the Proposed Development can be seen in the **Works Plans [EN0110020/APP/2.3]** with NGET's proposed Long Lane 400kV Substation shown to the west of the Site on Sheet 9.

Access Points

1.4.19 Access to and egress from the land within the Cable Corridor will be provided through the same access track junctions designed for either a) the solar access or b) new access points exclusively for the cable corridor, as shown in the **Rights of Way, Streets and Access Plans [EN0110020/APP/2.4]**.

1.5 Equipment

1.5.1 Equipment required for Cable Corridor installation consists of at a minimum:

Open Cut Trench

- Excavators anticipated to be delivered on an articulated lorry;
- Low loader lorries for delivery of cable drums;
- Tractors and other smaller vehicles to transport materials within the Cable Corridor;
- Trench protection e.g. temporary shoring, benching, sheet piling, or timber supports, dewatering/pumping equipment;
- Suitably sized concrete lorries for delivering concrete to create the joint bays; and
- Winches for cable pulling.

Trenchless Crossings

Launch Pits:

- Suitably sized low loader lorry for delivery/pick up of the directional drill rig;
- Low loader lorries for delivery of cable drums;
- Flatbed lorries for delivering temporary trackway;
- Telehandler anticipated to be delivered on an articulated lorry;
- Excavator anticipated to be delivered and picked up with the telehandler;
- Suitably sized concrete lorries for delivering concrete to create the joint bays;
- Light Vehicles;
- Beavertail lorry and gallon tank with rod boxes;
- HDD rig;
- Tractor and tanker;
- Vehicle with gallon mixing tanks; and

- Mud mixing tank unit.

Reception Pits:

- Excavator anticipated to be delivered and picked up with the telehandler;
- Suitably sized lorries for delivering the concrete to create the joint bays;
- Suitably sized low loader lorries for delivery of cable;
- Flatbed lorries for delivering temporary trackway;
- Telehandler anticipated to be delivered on an articulated lorry; and
- Flatbed lorry for the delivery of sand.

1.6 Construction

Site and Construction Compounds

1.6.1 Construction and restoration activities will include:

- The establishment of mobilisation areas and haul roads;
- Temporary construction compounds and site access points;
- Site preparation including fencing and appropriate temporary drainage;
- Establish satellite construction compounds if required;
- CAT and genny scanning for existing utilities;
- Stripping of topsoil in sections;
- Trenching in sections;
- Appropriate storage and capping of soil;
- Appropriate construction drainage with dewatering and pumping where necessary (for trenching and trenchless works primarily);
- Sectionalised approach of duct installation (if ducted);
- Excavation and installation of joint bay pits;
- Cable joint installation;
- Cable pulling (if ducted);
- Installation of warning tape / protective tiles;
- Backfilling;
- Implementation of trenchless crossings for watercourses and infrastructure (including roads and rail);

- Testing and commissioning;
- Demobilisation of construction compounds; and
- Site reinstatement and habitat creation.

1.6.2 Establishment of the main site compound preliminary activities are setting up the contractor's compound and offices, including cabins, stores, welfare and car parking facilities.

1.6.3 There may also be other smaller mobile welfare units established along the route. **Appendix A.4** shows a typical satellite compound.

1.6.4 Locations of these compounds will be confirmed at a later design stage post DCO consent and will be shown on the **Works Plans [EN0110020/APP/2.3].**

1.6.5 In addition, at the Cable Corridor access locations, there will be temporary construction laydown areas which are typically up to 50m by 50m that will be used to support the cable installations. The laydown area footprint will take into consideration topography, drainage, and any heritage and environmental constraints.

1.6.6 The laydown areas will allow construction vehicles to turn off public roads and park safely. Activities at the laydown areas will include receipt of deliveries, unloading, provision of welfare, and storage of plant and construction materials. The areas will likely include portacabins, welfare and power generators, and will be secured using Heras fencing and security cameras. In the construction phase, parking will be available at these locations for the workforce. Upon completion of construction, the laydown areas will be removed and the land reinstated.

1.6.7 Temporary services to the site cabins and offices will include electrical, communications, water and sewerage facilities.

1.6.8 The temporary site compounds will be erected, maintained and subsequently removed in a manner that will have minimum reasonable impact on the locality and in accordance with the DCO and approved outline management plans.

1.6.9 Appropriate security measures will be in place to reduce the risk of theft of materials outside of working hours (nights, weekends and bank holidays). This is likely to consist of a combination of remotely monitored closed-circuit television (CCTV), temporary secure fencing and patrolling security personnel.

1.6.10 Any cabins or vans present on site will have a weekly housekeeping service.

Prior to Construction

1.6.11 A utility survey will be conducted within the vicinity of proposed excavations to confirm existing utilities in the area which will be avoided during construction.

1.6.12 Appropriate ground investigation will be undertaken in advance of any trenchless crossings to support settlement calculations and ensure that riverbed levels, underground services, roads and railways will not be adversely affected by the works.

1.6.13 Appropriate temporary works to be erected before any works commence at the access/egress points of the access roads to inform members of the public about the works.

1.6.14 Appropriate temporary traffic management to be in place as required during construction works on private and public roads, and at the site access and egress points. General traffic management may include:

- Traffic cones;
- Traffic signals;
- Temporary signs;
- Temporary lighting;
- Temporary speed restrictions;
- Temporary diversions;
- Temporary height restriction barriers;
- Narrow lanes;
- Lane closures; and
- Partial or full road closures (to be agreed with the relevant authority) with appropriate diversion signing in place).

1.6.15 The land occupied by the works will be identified on site by surveying and installing appropriate pegs and posts, prior to the works commencing.

1.6.16 Any required vegetation clearance across the working area of the construction corridor will be carried out prior to construction.

Overview of Construction Activities

1.6.17 A typical construction sequence for open cut trenching cable installation for direct buried/ducting is to be implemented:

- Appropriate site survey and setting out of route using approved drawings and cable schedules;
- CAT and genny scanning for existing utilities;
- Excavate the trench;
- Trench protection e.g. temporary shoring, benching, sheet piling or timber supports, dewatering/pumping equipment;
- Construct bedding layer - sand or cement bound sand;
- Install ducting onto bedding layer (if ducted);
- Pull cables through the ducts (if ducted);
- Lay the cables in the trench, where not ducted;
- Installation of warning tape / protective tiles over the cables;

- Reinstate the excavated trench using appropriate backfill material, while ensuring stratigraphy of subsoil and topsoil is maintained as outlined within **Outline Construction Environmental Management Plan (oCEMP) [EN0110020/APP/5.9]**; and
- Ensure backfill material is compacted effectively around the cables without any air pockets.

1.6.18 A typical microtunnelling / pipe jacking construction method is shown in **Image 1-1: Cross-section of a typical pipe jacking construction method**[1], which is a potential trenchless option for the cable installation.

- This method is typically used for diameters ranging from 0.3m to 2.4m and is limited to lengths of around 2km.
- Pipe jacking is a similar technique to microtunnelling but tends to be utilised for larger man-entry diameters.

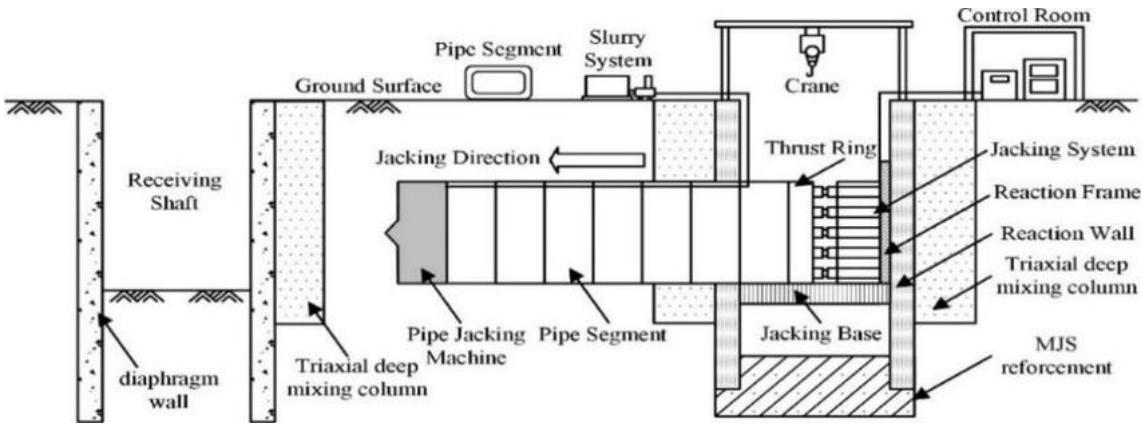


Image 1-1: Cross-section of a typical pipe jacking construction method[1]

1.6.19 A typical HDD construction method is shown in **Image 1-2: Cross-section of typical HDD construction method**. This is a potential trenchless option for the cable installation.

- A HDD rig is set up at the launch location;
- The drill requires the following components: drill bit, drill head and drilling fluid.
- A pilot hole is drilled along a predetermined path with drilling fluid injected to ensure the ground conditions remain cohesive to prevent collapse of the unsupported excavation.
- Once the initial drill bit reaches the exit location, a back reamer is attached to the drill string and pulled back through the borehole to increase the diameter of the hole.

- The pipe duct is then pulled through the excavated borehole. Following this, a winch is used to pull the cables through the ducts.

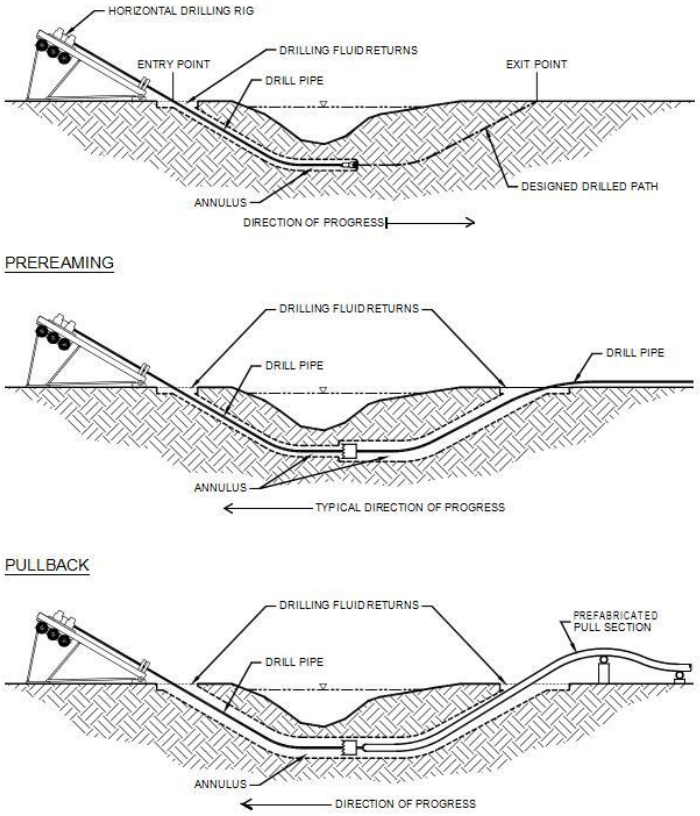


Figure 1
The HDD Process

Image 1-2: Cross-section of typical HDD construction method

1.6.20 A typical CTM construction method is shown in **Image 1-3: Cross-section of typical CTM construction method**. This is a trenchless method that can be used for cable installation. However, it is typically used for larger diameter tunnels with greater lengths than are expected for the Proposed Development.

- CTM uses a lining formed of precast concrete segments which are interlocked to line the tunnel bore.
- The minimum tunnel diameter is typically 4m and it is most cost effective when the tunnel length is greater than 5km.

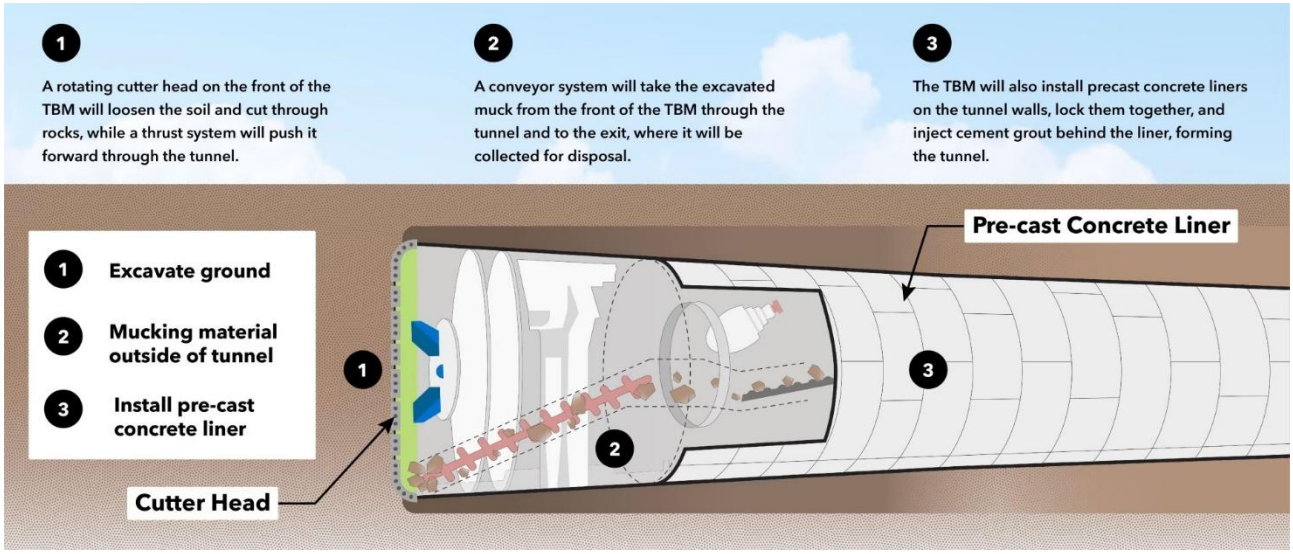


Image 1-3: Cross-section of typical CTM construction method[3]

1.6.21 A typical joint bay construction sequence is to be implemented. As per NG guidance, underground joint bays will be required every 500m to 1000m. These will be concrete lined and suitably sized to accommodate the cable size and required working area. Maximum joint bay dimensions would be 6.0m length by 3.0m width by 2.5m depth.

1.6.22 The cable installation construction method will implement the following guidance and best practice procedures:

- Under supervision of a banksman, the excavator with toothless bucket will be escorted to excavation position. A banksman will be present throughout machine operations to ensure safe machine movements.
- Following HSG47 Guidance 'Avoiding danger from underground services', the excavator will remove the topsoil/vegetation. The excavator will continue the excavation by removing layers of no more than 75mm of spoil.
- Topsoil and subsoil will be separated and stored either side of the trench and used as backfill material upon restoration of the trench.
- Continual cable avoidance tool (CAT) and Genny (signal generator) scanning of the excavation area will be undertaken at regular intervals as excavation progresses.
- As mentioned in Section 1.6.11, a utilities survey will be conducted prior to commencement of any construction works to avoid danger from and damaging underground services. If an unknown service is encountered, stop work and contact the engineer or utility owner immediately.
- Dewatering of excavations shall be carried out when required and transferred to appropriate drainage areas.

Spoil

1.6.23 During the construction phase of the Cable Corridor, spoil will be stored temporarily within designated areas adjacent to the Cable Corridor and within construction compounds.

1.6.24 Refer to Sections 1.6.25 and 1.6.26 for further information on the use of spoil on the Site.

Reinstatement of Working Width

1.6.25 Following the completion of works, the Site will be returned to its previous condition. This will comprise of the following activities:

- Backfilling trenches with stored soil;
- Removal of construction machinery and materials from the Site;
- Temporary access tracks and site fencing removed; and
- Where land had previously been vegetated, the re-planting of these areas with grass seed will be needed to satisfy the landowner.
- Adequate aftercare programme as agreed.

1.6.26 Excavated spoil stored on site is expected to be utilised to backfill or reinstate the temporary construction compounds, trench excavations and any temporary access roads to its original condition. Any excess spoil is assumed to be retained on site and reused.

1.6.27 Where seeding is required to restore the land to its original condition, this will occur after backfilling of the trenches and application of topsoil.

Construction Programme

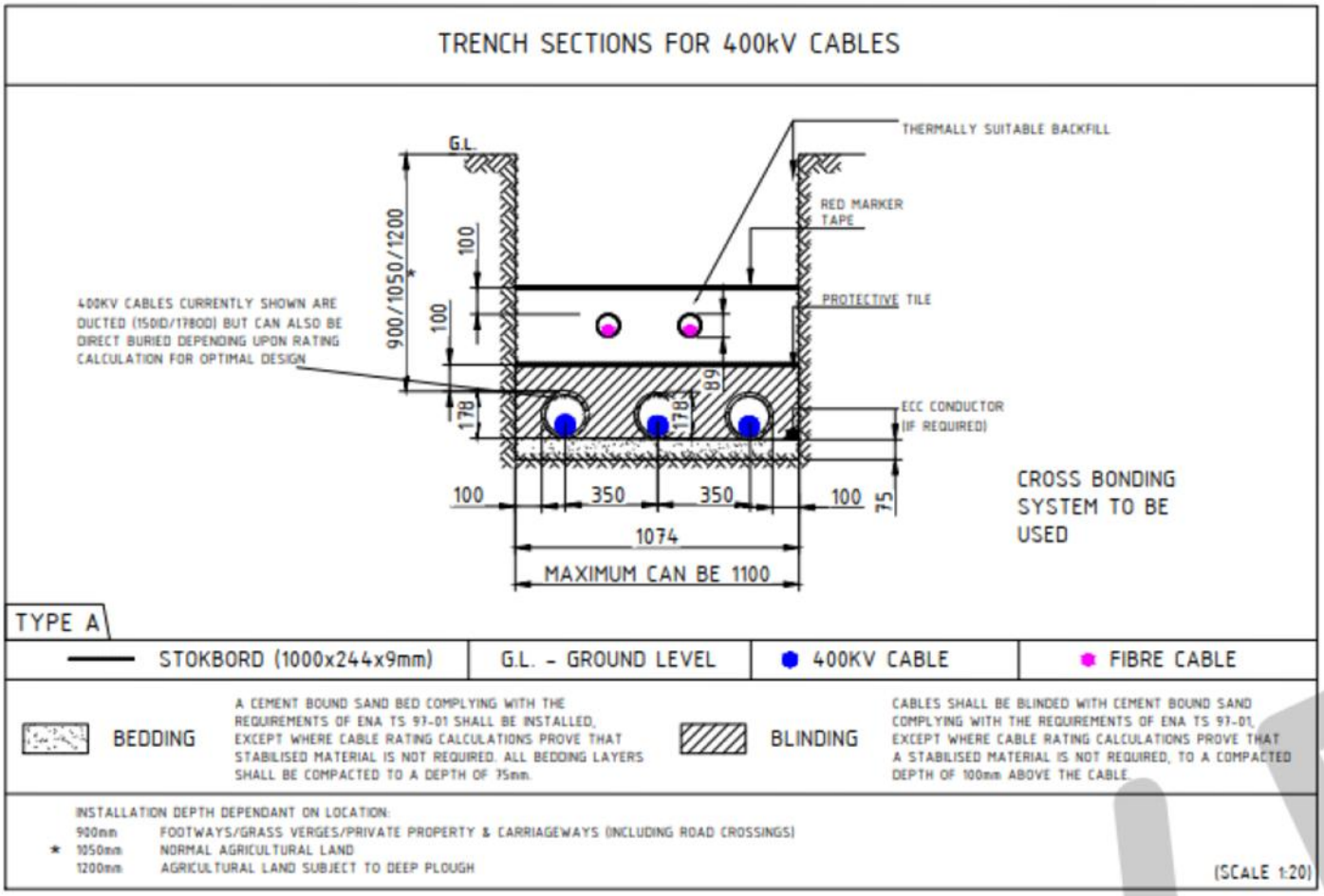
1.6.28 Based on the **oCEMP [EN0110020/APP/5.9]**, the earliest anticipated commencement of construction is 2027 for a period of 24 months. Construction activities are not expected to occur concurrently across the Site. A detailed construction programme has not yet been developed, as information relating to the cable configuration, NGET approval, construction sequencing, access arrangements and exact heavy goods vehicle (HGV) movements are to be confirmed.

1.6.29 An example breakdown of the construction sequencing and timeframes for the cable routing based on similar project scales is provided in **Table 1-6** below. Note that this is indicative only and will be subject to a range of unforeseen factors such as planning and connection approvals, supply chain variability, inclement weather etc.

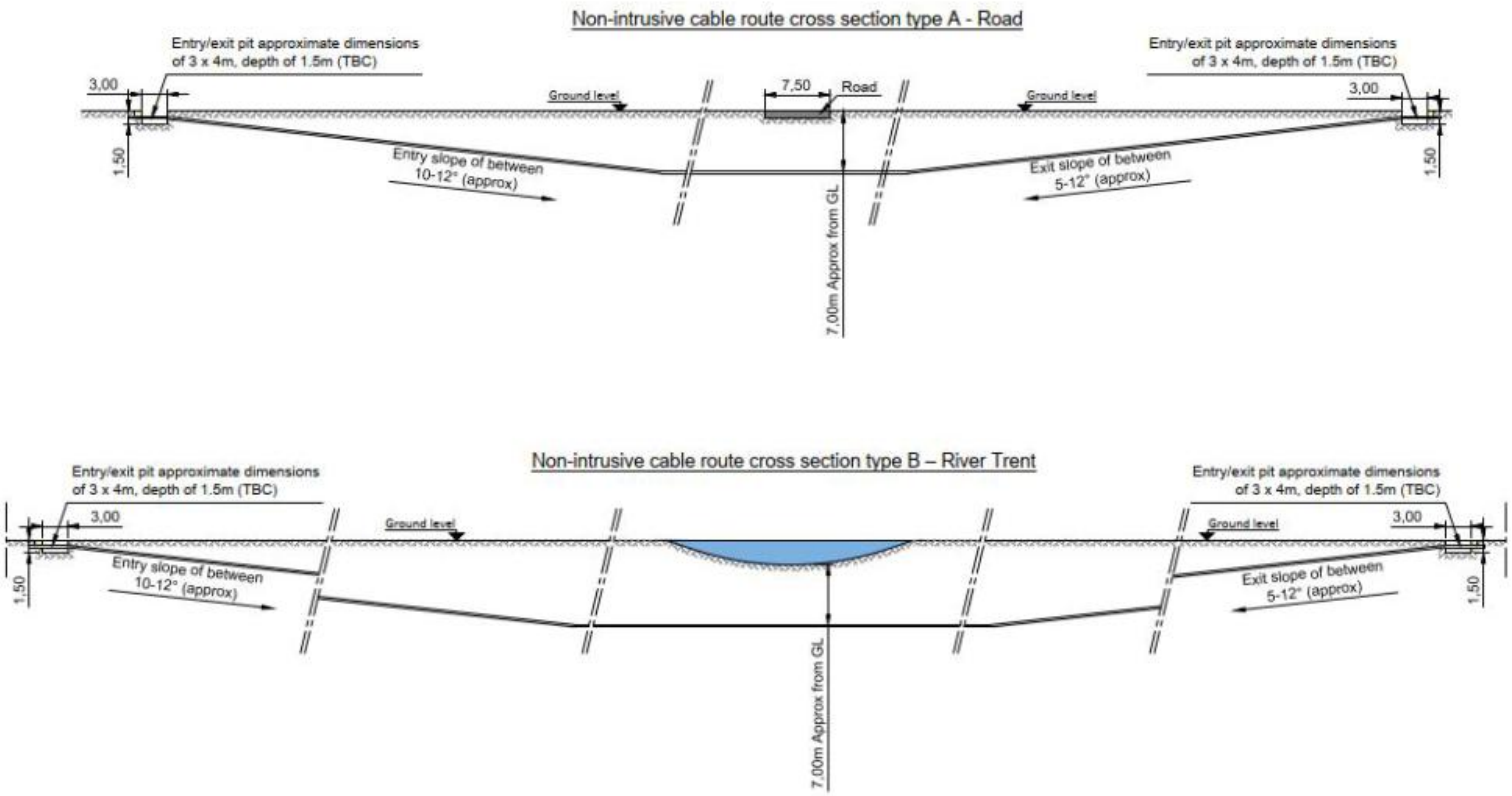
Table 1-6: Typical cable routing construction programme EXAMPLE

Construction Task - Typical Cable Routing Construction Sequence and Timeframe	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Establish primary construction compounds and site access points, which may include Public Road Improvements (PRIs) where required.												
Site preparation including fencing and haul road construction												
Establish satellite construction compounds												
Excavate pre installed ducts and jointing pits, install cables and reinstate												
Carry out any onshore HDDs (or other trenchless crossings)												
Pulling Cables												
Removal of the haul road, reseeding etc.												
Testing and Commissioning												
Demobilisation of satellite compounds												
Demobilisation of construction compounds												

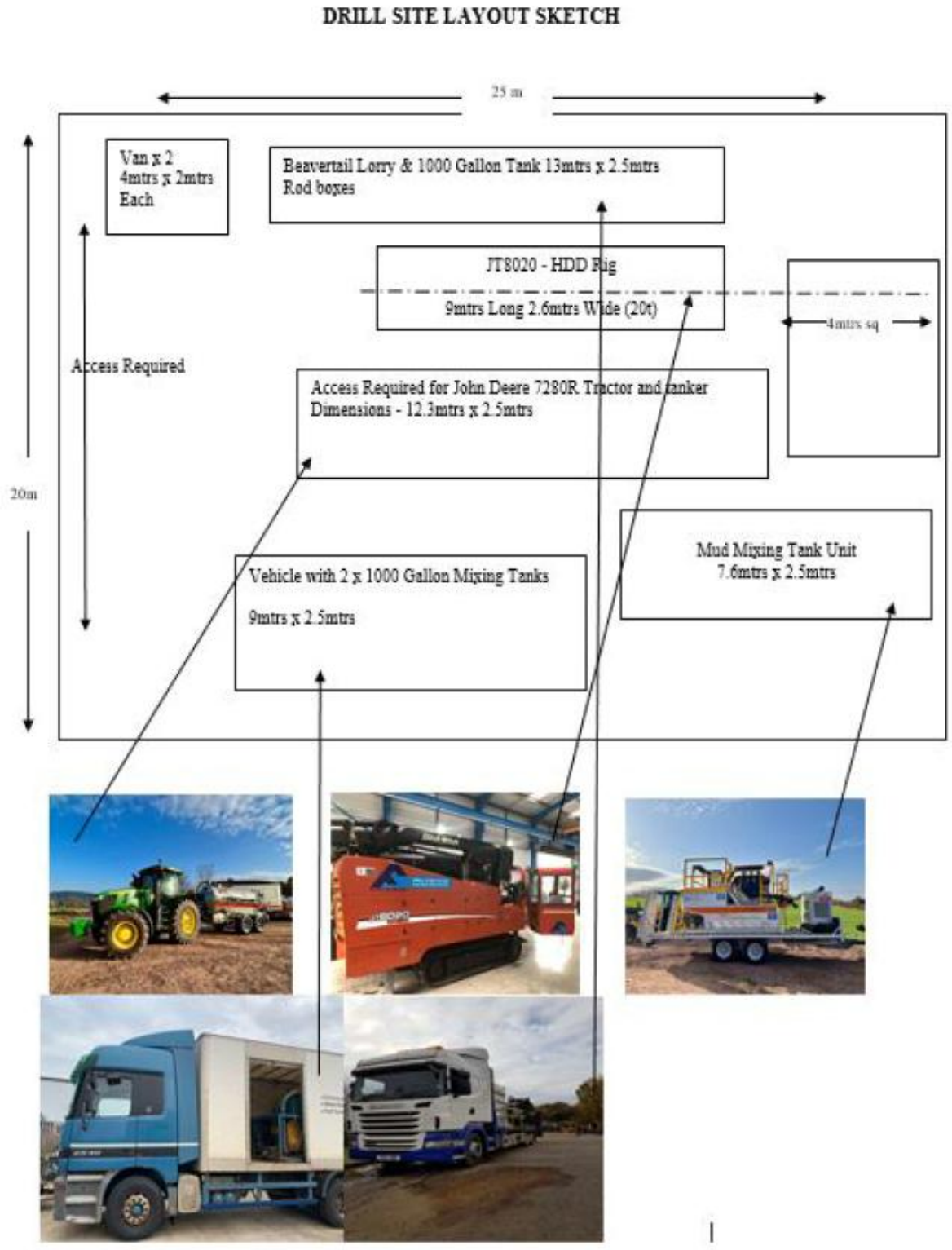
A.1 Example Open Cut Trench Cross-Section



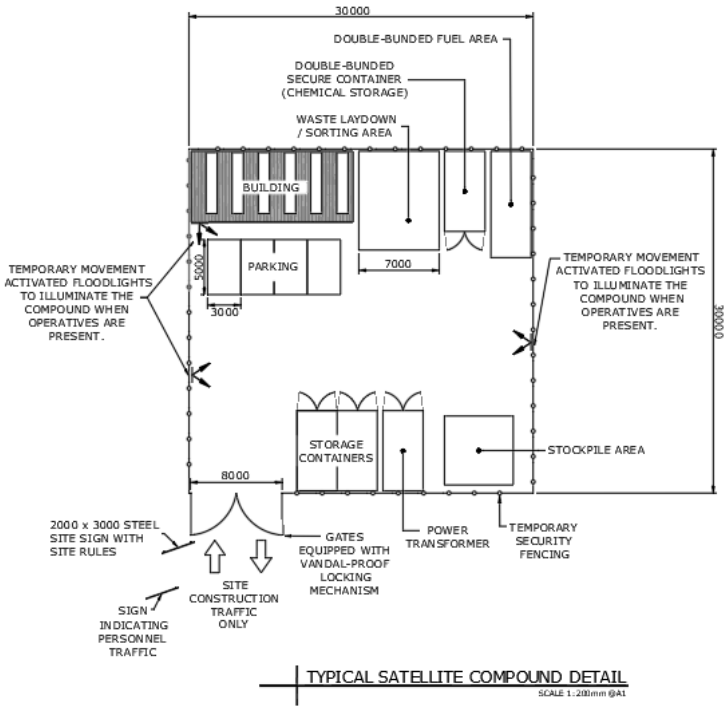
A.2 Example Trenchless Crossing Cross-Section

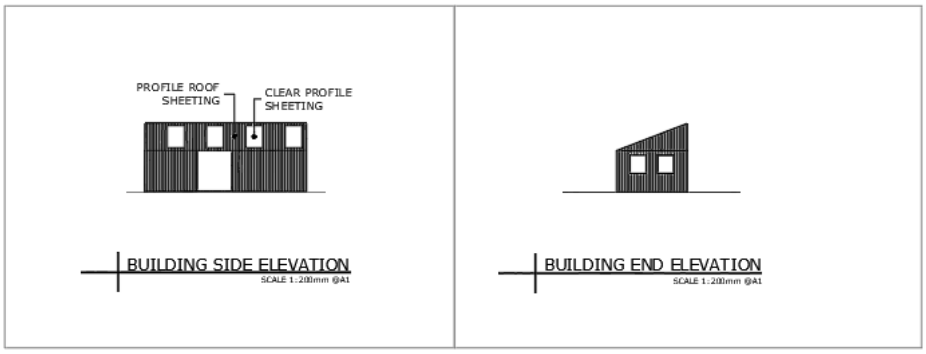


A.3 Illustrative 25m x 20m Trenchless Launch Pit Layout for a 400kV Connection



A.4 Indicative Satellite Compound Typical Detail





NOT FOR CONSTRUCTION
FOR INFORMATION ONLY

References

[1] GOOD PRACTICE GUIDE FOR HANDLING SOILS In Mineral Workings [Internet]. Chilwell, Nottingham: The Institute of Quarrying ; 2021 [cited 4AD Dec]. Available from: https://885685.fs1.hubspotusercontent-na1.net/hubfs/885685/Soils%20Guidance/IQ%20Soil%20Guidance%20full%20document%20including%20all%20practitioner%20advice%20updated%20May%202022.pdf [Accessed July 2025]

[2] Avoiding danger from overhead power lines [Internet]. www.hse.gov.uk. Available from: https://www.hse.gov.uk/pubns/gs6.htm [Accessed July 2025]

[3] Ghella.it. (2023). *Tunnel Boring Machines for the Eglinton Crosstown West Extension | Ghella*. [online] Available at: https://ghella.it/en/media/news/tunnel-boring-machines-eglinton-crosstown-west-extension.

WHITESTONE
solar farm

Contact

Net Zero One Ltd

info@whitestonesolarfarm.co.uk

0800 688 9936