



AQUIND Limited

AQUIND INTERCONNECTOR

UK Joint Bay Feasibility Report

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1. INTRODUCTION

1.1. BACKGROUND

- 1.1.1.1. This report summarises the Joint Bay (JB) Location Feasibility Assessment conducted for the UK Onshore Cable Route from the Landfall to the Converter Station.
- 1.1.1.2. Two cables comprising one pole are jointed within one JB. The first JB locations onshore within the Onshore Cable Corridor are the two transition joint bays (TJBs) at the Landfall within the triangular-shaped car park, to the north of Eastney beach. This is where the marine cable will be jointed to the onshore cable.
- 1.1.1.3. Subsequently, JBs will need to be positioned at 600-2000m intervals along the Onshore Cable Route, corresponding with the lengths of cable that can fit on a drum and pulling tension limits. The lengths of cables between JBs depends on the characteristics of the respective cable route sections; in areas where there are more (or sharper) bends, the length of cable that can be safely pulled is reduced.
- 1.1.1.4. The 600-2000 m lengths were used to locate suitable sites (e.g. fields / car parks / road verges) adjacent to the proposed cable route, taking into account the characteristics of the route and informed by professional experience regarding the pulling tension for the individual sections of cable. In accordance with paragraph 5.9.1.5 of the Onshore Outline Construction Environmental Management Plan ('OOCEMP') (REP6-036), JBs are to be located off carriageway unless such positioning is unavoidable taking into account environmental and other constraints / considerations and that this requires no different traffic management measures than required for cable trenching in that part of the highway. Every effort has been made to identify JBs off carriageway (and further off highways) to evidence the feasibility of this commitment, which limits impact on traffic in connection with the construction of JBs and the pulling of the cables between them.

1.2. CONSTRUCTION METHODOLOGY

1.2.1. TRANSITION JOINT BAY (TJB)

- 1.2.1.1. TJBs require a slightly larger excavation than a standard JB. Each TJB will require an excavation of approximately 15m x 5m. Once the joint is complete, these excavations are backfilled. During the construction works, an area of 15m x 5m adjacent to the TJBs is required for the jointing workshop, storage, parking, generator, welfare and security.

1.2.1.2. The cables will be pulled into the TJB, ready for jointing. During the cable pulling operation, an area of 15m x 12m at either end of the TJBs are required for the cable drum and stand, plus space for delivery and offloading of cable drums (at one end) and the winch and anchor (at the other end).

1.2.1.3. HDD works will be used to install the cables underneath the intertidal area at Eastney beach . The use of HDD avoids the need for any trenching operations on Eastney Beach or in the nearshore area.

1.2.2. JOINT BAY (JB)

1.2.2.1. The excavation for the joint bay (for each circuit) will be approximately 15m x 3m, with the joints themselves being approximately 6m x 3m in size.

1.2.2.2. The construction duration at each JB location is anticipated to take 20 consecutive working days based on a working day of 0700 to 1700 subject to detailed design by the contractor, and this includes:

- 5 days for JB Excavation
- 5 days for HVDC Cable installation
- 5 days for Jointing
- 5 days for backfill and reinstatement.

1.2.2.3. In addition to locating the JBs every 600-2000m, it is preferable to avoid the need for the DC cables to cross the highway to access a JB location so as to limit impacts on traffic.

1.2.2.4. Cable winches will pull the cable through the duct system. The area around the winch will, when in location, be fenced off and designated as a construction zone.

1.2.2.5. The installation of the fibre optic cables is undertaken concurrently with the installation of the power cables.

1.3. ASSUMPTIONS

1.3.1.1. The following sections provide the baseline assumptions used during the Joint Bay Location Assessment.

1.3.2. STANDARD DOUBLE JOINT BAY

1.3.2.1. Plate 1-1 shows the assumption used where possible to locate two JBs alongside one another (i.e. a “double joint bay” arrangement for both cable circuits). If space permits – in both the JB location and the DC cable approach / exit from the JB – this is the preferable arrangement as it limits the overall required working area.

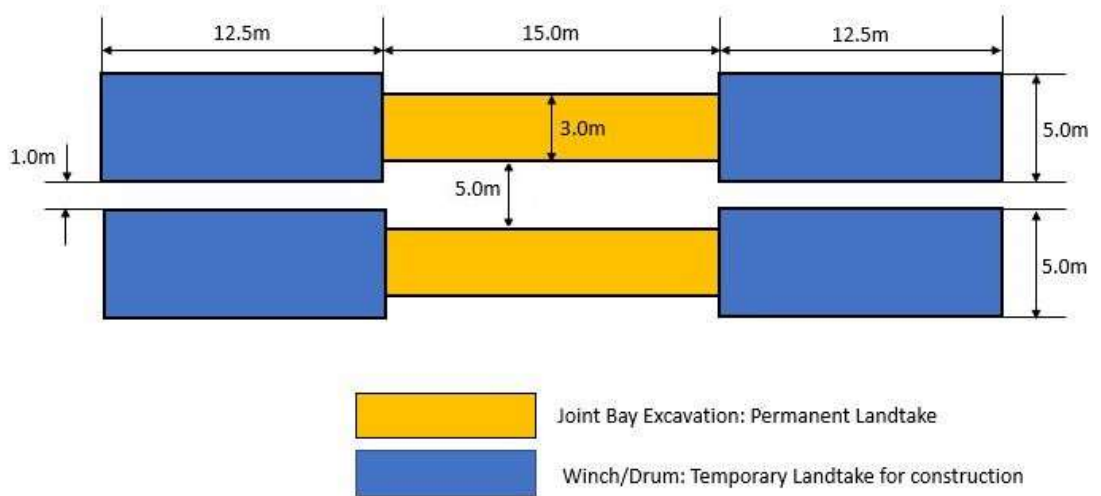


Plate 1-1 - Standard Double Joint Bay

1.3.3. STANDARD SINGLE JOINT BAY

1.3.3.1. Plate 1-2 shows the assumption for a “single joint bay” arrangement. Typically a single joint bay arrangement will be used where there is not sufficient space for a double joint bay arrangement, or where it is preferable to install single joint bays for the individual cable circuits to avoid the need for the DC cables to cross the highway to access a JB location.

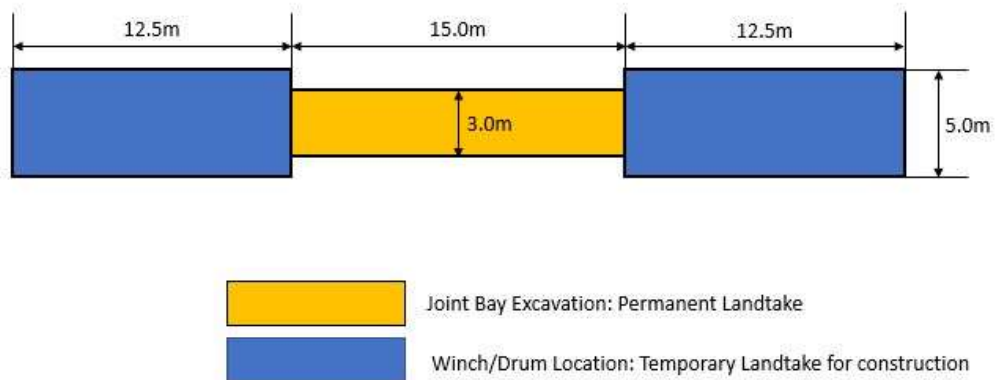


Plate 1-2 - Standard Single Joint Bay

1.3.3.2.

Plate 1-3 illustrates a typical HVDC joint bay layout, for information purposes. The dimensions given are in millimetres. It consists of a central concrete slab and two adjacent cable lead-in and lead-out areas, on either side of it. The concrete slab offers a stable permanent support (and somewhat limited protection) for the joint boxes, and is also used by the jointing team as a level, rigid and safe working platform for carrying out jointing operations. Note that one of the cable lead-in areas is required to be about double the length of the other, in order to allow sufficient flexibility in the cables to be pulled back and out of the joint box.

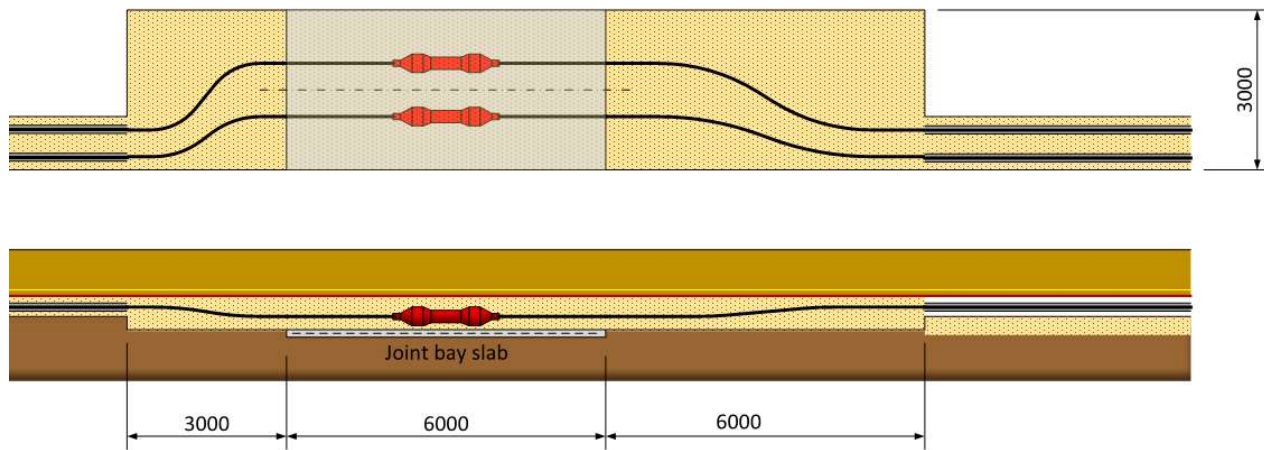


Plate 1-3 – Typical HVDC Joint Bay Layout

1.3.4. STANDARD Delivery Area

1.3.4.1. Plate 1-4 shows the standard delivery area. The “delivery area” accommodates the cable drum delivery vehicle, which is only on site for a short duration during the cable installation (where practicable to minimise impacts on traffic will be delivered outside of core working hours). The drum, winch and ancillaries will be delivered to site once joint bay construction is complete.

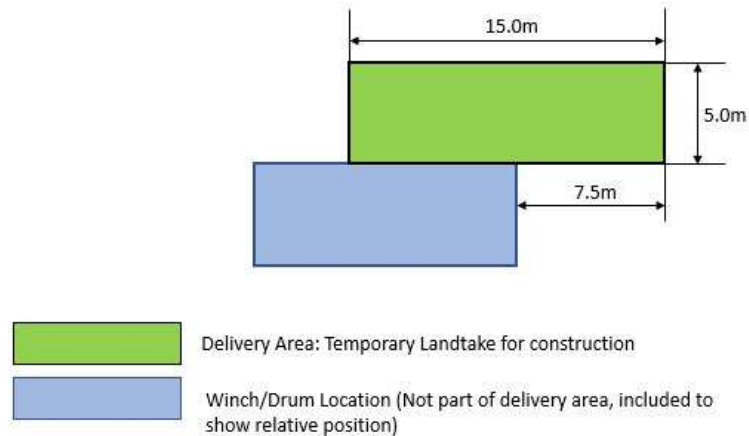


Plate 1-4 - Standard Delivery Area

1.3.4.2. For clarity, the light blue shaded area shown in Plate 1-4 above is representative of the dark blue shaded areas shown in Plate 1-1 and Plate 1-2.

1.3.5. COMPOUND AREA

1.3.5.1. A Compound Area is required for welfare facilities, parking etc. this compound would be operational during site works – see Plate 1-5 below. It should be noted the size of this Compound Area allows for some flexibility and can be amended to suit location constraints where necessary. It can also be split into two separate areas, if required.

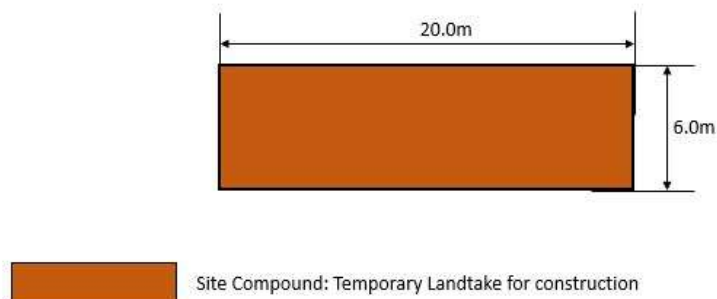


Plate 1-5 - Site Compound Area

2. INDICATIVE JOINT BAY LOCATIONS

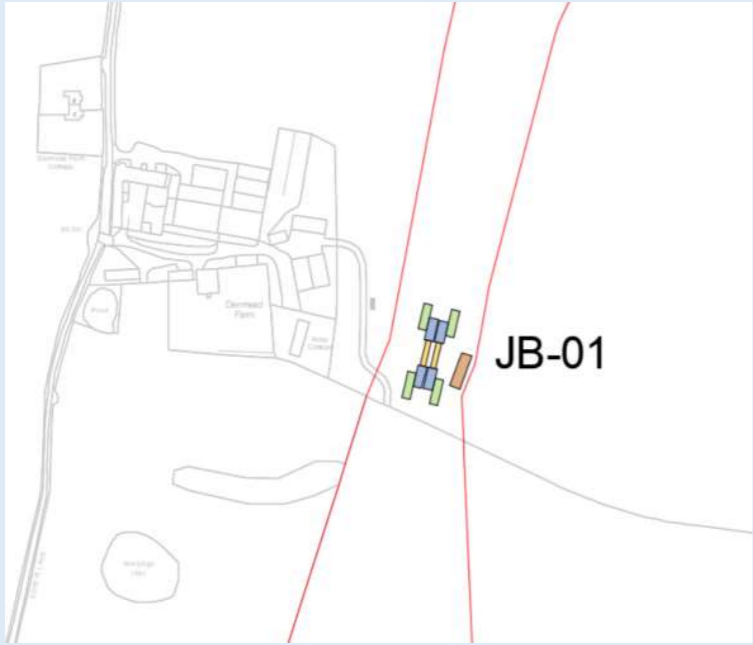

2.1. INTRODUCTION

2.1.1.1. Table 2-1 summarises indicative JB locations along the UK HVDC cable route.

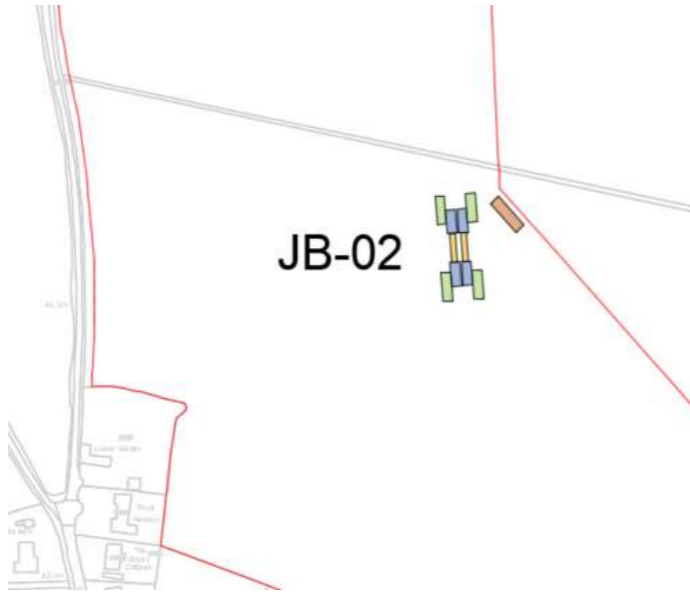

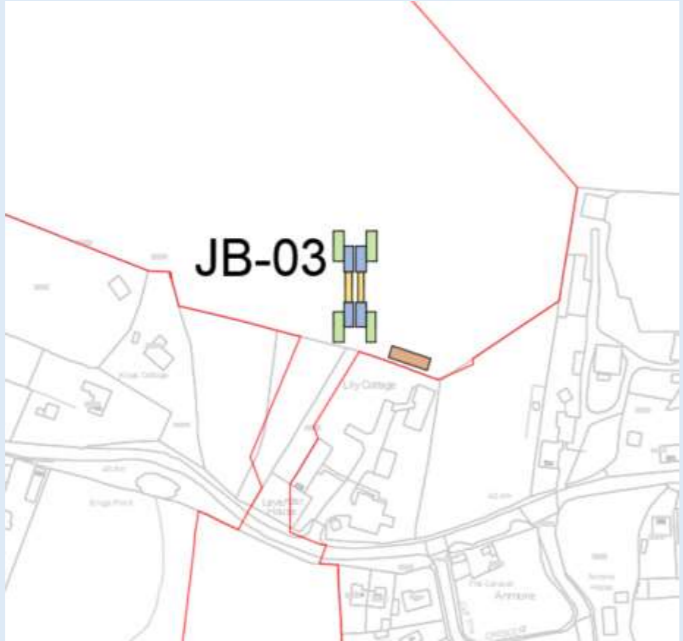

2.1.1.2. More than the required number of JBs, and the maximum amount that will be permissible as part of the Proposed Development, are identified. This is because this document is for indicative feasibility purposes, and therefore identifies flexibility within the Order limits to locate JBs. The cable drum delivery route is identified for certain joint bays (those from where the cable pull is expected to start) to confirm its feasibility, in practice a delivery to each JB may not be required as demonstrated in the assessment included in the supplementary TA.

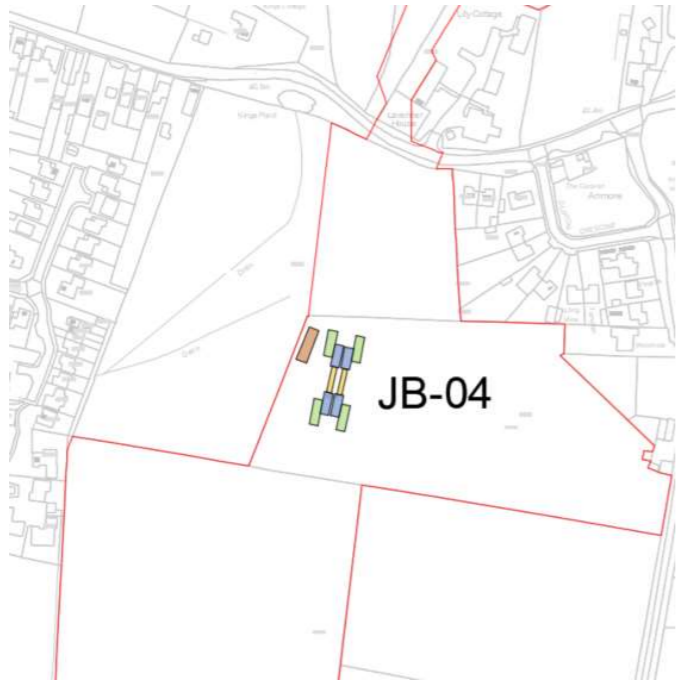

2.1.1.3. We have included a general description of Cable Drum Delivery for all potential joint bays within this report however as per the Supplementary Transport Assessment (STA) a detailed sweep path analysis was completed for JB's 01, 04, 07, 09, 17, 22, 23, 24, 25, 29, 33, 35 and 36 (i.e. TJB) and for other JB's we have considered likely drum delivery routes based on the assessments contained within the STA and vehicle routing requirements contained in the Framework Construction Traffic Management Plan (REP6-032).

Table 2.1 – Indicative Joint Bay Locations



JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB01			<p>Overview of Indicative JB Location</p> <p>JB 01 is a double joint bay location situated in agricultural land 360m south of Broadway Lane and is accessed via haul road leading south from the Converter Station.</p> <p>Cable Drum Delivery</p> <p>The cable drum delivery vehicles would use A3 Mile End Road, M275, A27 and A3(M), exiting at Junction 2 onto:</p> <ul style="list-style-type: none"> • B2149 Dell Piece West: a wide single carriageway road which serves Hazleton Industrial Estate and is subject to a 40mph speed limit; • A3 Portsmouth Rd / London Road: a wide single carriageway road with northbound bus lanes for the majority of the section used as a delivery route, subject to a 30mph speed limit; • Lovedean Lane: A single carriageway road with a 30mph speed limit, which provides access mainly to residential properties but also some commercial premises; and 	1-83

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
			<ul style="list-style-type: none"> Day Lane: a rural lane, generally wide enough to accommodate normal two-way traffic, subject to national speed <p>This follows the construction traffic route between the A3(M) and Converter Station site for all vehicles associated with construction of the Proposed Development. Access to the Converter Station site would be from the proposed site access at Broadway Lane / Day Lane discussed in Section 3.3 and controlled via the construction vehicle management strategy set-out in Section 3.4 of this Supplementary Transport Assessment (STA) (REP1-142)..</p> <p>The swept path analysis of this route is shown on Drawing 62100616/ATR/010 (Appendix D of the STA (REP1-142)), has shown that all manoeuvres can be accommodated within the existing highway layout. At the A3 Portsmouth Road / Dell Piece West / Catherington Lane traffic signals it will be necessary for the cable drum delivery vehicle to use off-side approach lanes through the junction to avoid overrunning traffic signal poles and guard railing located on the traffic islands. This manoeuvre will be completed with use of escort vehicles to manage conflicting traffic movements at the junction.</p>	



JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB02			<p><u>Overview of Indicative JB Location</u></p> <p>JB 02 is double joint bay location positioned in agricultural land 450m north of Anmore Road, accessed via haul road.</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 02 will be as per access route for JB 01, with travel continuing south along the site haul road to JB location.</p>	1-83
JB03			<p><u>Overview of Indicative JB Location</u></p> <p>JB 03 is double joint bay location positioned in agricultural land 120m north of Anmore Road, accessed via haul road.</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 03 will be as per access route for JB 01, with travel continuing south along the site haul road to JB location.</p>	1-83

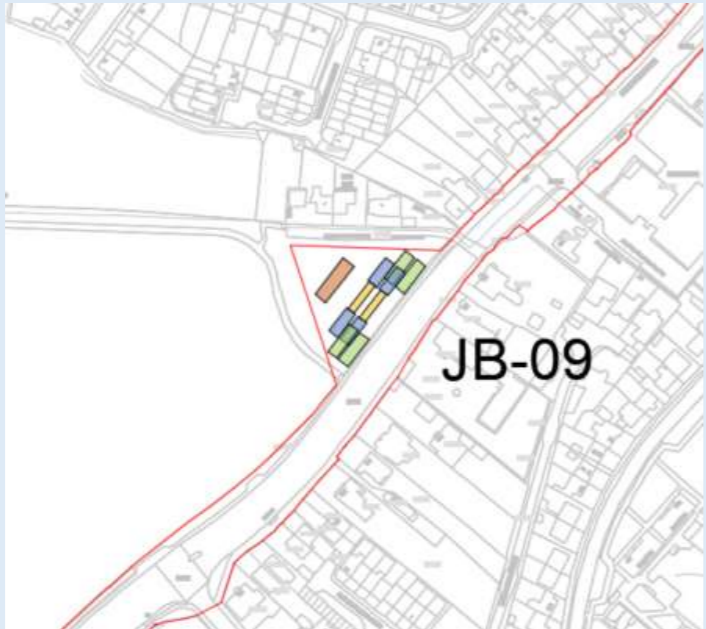

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB04			<p><u>Overview of Indicative JB Location</u></p> <p>JB 04 is double joint bay location positioned in agricultural land 150m south of Anmore Road, accessed via haul road. Cable Drum Delivery</p> <p>The cable drum delivery vehicles would use A3 Mile End Road, M275, A27 and A3(M), exiting at Junction 3 onto:</p> <ul style="list-style-type: none"> • B2150 Hulbert Road and A3 Maurepas Way: dual-carriageway roads with two lanes in each direction, subject to a 40mph speed limit; 	3-10



			<ul style="list-style-type: none"> • B2150 Hambledon Road between Maurepas Way and Milton Road: a dual-carriageway road with two lanes in each direction, subject to a 40mph speed limit, which provides access to Wellington Retail Park, Aston Road industrial estate and Brambles Business Park; • B2150 Hambledon Road between Milton Road and Mill Road: a single-carriageway road with a 30mph speed limit providing residential access and a primary route between Denmead and Waterlooville; • Mill Road: a residential road subject to a 30mph speed limit, with unrestricted on-street parking; and • Anmore Road: a rural lane, generally wide enough to accommodate normal two-way traffic, providing some residential access, subject to a 30mph speed limit. <p>The swept path analysis of this route shown on Drawing 62100616/ATR/020 (Appendix D of the STA (REP1-142)) and shows that some vehicle overrun of footways occurs on entry / exit to Mill Road from B2150 Hambledon Road, however, this would not impede access. A TTRO would be required on Mill Road to temporarily restrict on-street car parking when the cable drum is being delivered.</p> <p>As shown on 62100616/ATR/021 (Appendix D of the STA (REP1-142)), the cable drum delivery vehicle would overhang the footway located on the southern side of Anmore Road for approximately 50m. The turning movement to / from fields south of Anmore Road would be facilitated by provision of a temporary construction access point shown as location AC/2/a on Sheet 2 of the Access and Rights of Way Plans (APP-011 Rev 03).</p> <p>Entry and exit from this Joint Bay location would be achieved via the same route.</p>	
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JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB05			<p><u>Overview of Indicative JB Location</u> <u>JB 05 is double joint bay location positioned off carriageway in the grassed area south of Hambledon Road opposite Soake Lane.</u></p> <p><u>Cable Drum Delivery</u> Access to JB 05 will be via the same route as JB 07, with continued access along Hambledon Road to the JB location. Due to the off carriageway location traffic signals will not be required. There will be a requirement for suitable chapter 8 signage to be positioned to control access and egress to site.</p>	3-17



JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB06			<p><u>Overview of Indicative JB Location</u></p> <p><u>JB 06 is a double joint bay location positioned in a carpark on the north side of Hambledon Road to the left of Southdown View.</u></p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 06 will be via the same route as JB 07, with continued access along Hambledon Road to JB location.</p> <p>As both JB's are positioned in the carpark north of Hambledon Road traffic signals will not be required. There will be a requirement for suitable chapter 8 signage to be positioned to control access and egress to site. Drums will be delivered to site with the use of a single lane closure as detailed in 2.5.2.5 of the FTMS REP1-068.</p>	3-18
JB07			<p><u>Overview of Indicative JB Location</u></p> <p>JB 07 is a double joint bay location positioned in east of Hambledon Road 50m south of the junction with Milton Road.</p> <p>Note that construction of the two joint bays shown will NOT be done simultaneously, allowing works to be facilitated by single lane closures and ensuring access to properties is maintained as per the overall strategy for construction of the Onshore Cable Route contained within the FTMS.</p> <p>The bus stop will remain in use and pedestrian access will remain open (aside for the immediate vicinity of the excavated works, for safety reasons). Access to Fennell Close will be maintained at all times.</p> <p><u>Cable Drum Delivery</u></p>	4-03 and 4-06

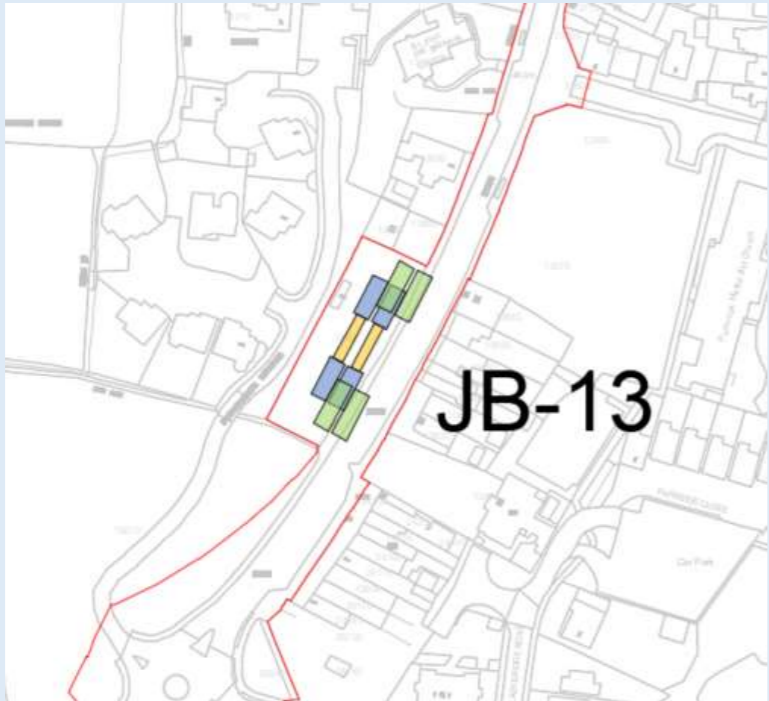

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
			<p>The cable drum delivery vehicles would use the same route as for JB 04, but only to the B2150 Hambledon Road / Milton Road roundabout. Access to and from the Hambledon Road spur road would be taken from the southbound carriageway of the B2150 Hambledon Road after completing a u-turn at the B2150 Hambledon Road / Milton Road roundabout gear.</p> <p>Exit from the site, under traffic marshall control, would be via B2150 Hambledon Road southbound carriageway.</p> <p>The swept path analysis of this route shown on Drawing 62100616/ATR/030 (Appendix D of the STA (REP1-142)) and has shown that all manoeuvres can be accommodated by the existing highway layout.</p>	
JB08			<p><u>Overview of Indicative JB Location</u></p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB08 will be as per access to JB 07.</p> <p>Both JB's would be positioned in the verge south west of the roundabout at the junction with B1250 Hambledon Rd and Maurespas Way, therefore traffic signals would not be required. There will be a requirement for suitable chapter 8 signage to be positioned to control access and egress to site.</p>	4-13

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB09			<p><u>Overview of Indicative JB Location</u></p> <p><u>JB 09 is double joint bay location positioned on the north side of London Road in a triangular parcel of land 260m of Forest Ebd roundabout.</u></p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB09 will be as per access to JB 10.</p> <p>Both JB's would be positioned in the triangular verge east of London Road 250m south of the roundabout with Maurepas Way, therefore traffic signals would not be required. There will be a requirement for suitable chapter 8 signage to be positioned to control access and egress to site.</p>	4-36

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB10			<p>Overview of Indicative JB Location</p> <p><u>JB 10 is positioned in bus lanes in both the east and west bound carriageway of London Road, 60m east of Corbett Road.</u> Joint bays will be constructed sequentially as to avoid 2no bus lane closures in the same vicinity.</p> <p>Cable Drum Delivery</p> <p>The cable drum delivery vehicles would use A3 Mile End Road, M275, A27 and A3(M), exiting at Junction 3 onto:</p> <ul style="list-style-type: none"> • B2150 Hulbert Road and A3 Maurepas Way: dual-carriageway roads with two lanes in each direction, subject to a 40mph speed limit; and • A3 London Road: a wide single carriageway road with bus lanes in both directions for the majority of its length, subject to a 30mph speed limit. <p>During delivery of the cable drums (which could be outside of core working hours to further minimise impacts), the delivery vehicle would stop on the southbound carriageway of the A3 London Road. Suitable traffic management would be employed in this scenario to provide a temporary lane closure, with two-way traffic maintained at all times.</p> <p>Exit from the site would be via the carriageway of the A3 London Road, with the delivery vehicle continuing to Ladybridge roundabout and Ladybridge Road / Stakes Road / Purbrook Way to access A3(M) Junction 4. Ladybridge Road and Stakes Road are single-carriageway roads subject to a 30mph speed limit while Purbrook Way is a part wide single-carriageway / part dual-carriageway road with a 40mph speed limit.</p> <p>The swept path analysis of this route is shown on Drawings 62100616/ATR/040, 041 and 042 (Appendix D of the STA</p>	4-42


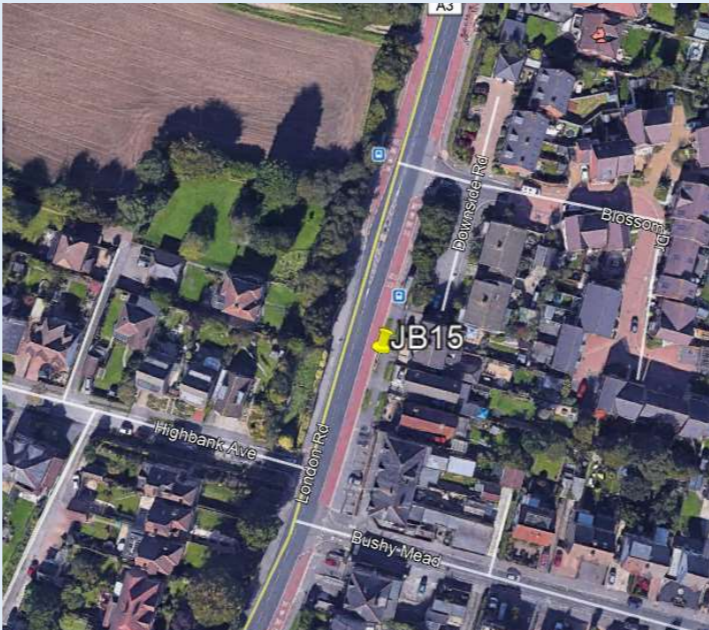

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
			(REP1-142)). This swept path analysis has shown other than overhang of the traffic island on approach to Forest End roundabout, which may require temporary removal of the existing bollard, all manoeuvres can be accommodated by the existing highway layout.	
JB11			<p>Overview of Indicative JB Location</p> <p>JB 11 is positioned in the north bound bus lane of London Road 650m north of the Ladybridge Roundabout .</p> <p>Traffic would be controlled using a single lane closure, as detailed in 2.5.2.5 of the FTMS REP1-068.</p> <p>Cable Drum Delivery</p> <p>Access to JB 11 will be as per access route for JB 10. Cable drums may be delivered outside of core working hours to further minimise impacts on traffic for the limited duration they are on site.</p>	4-42 and 5-02



JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB12			<p><u>Overview of Indicative JB Location</u></p> <p>JB 12 is positioned in the verge adjacent to Campbell Crescent / London Road 500m north of the Ladybridge Roundabout .</p> <p>Traffic will be controlled using a single lane closure, as detailed in 2.5.2.5 of the FTMS REP1-068.</p> <p>Construction work may need to be facilitated by a single lane closure of Campbell Crescent. During this period access to properties will be maintained as per the overall strategy for construction of the Onshore Cable Route contained within the FTMS.</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 12 will be as per the access route for JB 10. Cable drums may be delivered outside of core working hours to further minimise impacts on traffic for the limited duration they are on site.</p>	4-42 and 5-04

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB13			<p><u>Overview of Indicative JB Location</u></p> <p>JB13 is a double joint bay location positioned off London Road 110m north of Ladybridge Roundabout</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 13 will be as per the access route for JB 10. Cable drums may be delivered outside of core working hours to further minimise impacts on traffic for the limited duration they are on site.</p>	4-42 and 5-11





JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB14			<p>Overview of Indicative JB Location <u>JB 14 is positioned in the north bound bus lane in London Road 340m south of Ladybridge Roundabout.</u></p> <p>Traffic will be controlled using a single lane closure, as detailed in 2.5.2.5 of the FTMS REP1068.</p> <p>Cable Drum Delivery The cable drum delivery vehicles would use A3 Mile End Road, M275, A27 and A3(M), exiting at Junction 4 onto:</p>	4-42




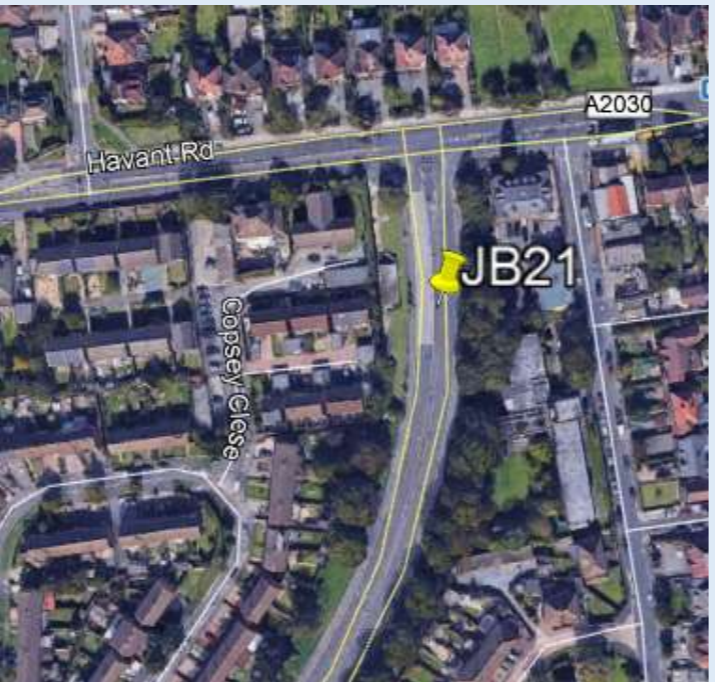
JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
			<ul style="list-style-type: none"> • Purbrook Way: a part wide single-carriageway / part dual-carriageway road with a 40mph speed limit; • Ladybridge Road / Stakes Road: a single-carriageway road, subject to a 30mph speed limit; and • A3 London Road: a wide single carriageway road with bus lanes in both directions for the majority of its length, subject to a 30mph speed limit. <p>During delivery of the cable drums, the delivery vehicle would stop on the carriageway of the A3 London Road. Suitable traffic management would be employed in this scenario to provide a temporary lane closure for the duration that the cable drum delivery vehicles is in location (which could be outside of core working hours to further minimise impacts), with two-way traffic maintained at all times.</p> <p>Exit from the site would be via the southbound carriageway of the A3 London Road to Cosham, with the delivery vehicle continuing along A3 Southampton Road to reach the M275 / M27. The A3 Southampton Road is a dual-carriageway road with two lanes in each direction and is subject to a 40mph speed limit.</p> <p>The swept path analysis of this route shown on Drawing 62100616/ATR/050 and 051 (Appendix D of the STA (REP1-068) and has shown that all manoeuvres can be accommodated by the existing highway layout.</p>	

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB15			<p><u>Overview of Indicative JB Location</u></p> <p>JB 15 is positioned in the south bound bus lane of London Road 650m south of the Ladybridge Roundabout.</p> <p>Traffic will be controlled using a single lane closure, as detailed in 2.5.2.5 of the FTMS REP1068.</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 15 will be as per the access route for JB 14. Cable drums may be delivered outside of core working hours to further minimise impacts on traffic for the limited duration they are on site.</p>	4-42, 5-21, 5-23, 5-24 and 5-25
JB16			<p><u>Overview of Indicative JB Location</u></p> <p>JB 16 is positioned in both the western foot path of London Road, and the car park of The Hampshire Rose Public House east of London Road.</p> <p>Joint bays will be constructed sequentially as to avoid 2no single lane closures in the same vicinity.</p> <p>Traffic will be controlled using a footpath closure as detailed in the FTMS REP1068.</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 16 will be as per access to JB 14. Cable drums may be delivered outside of core working hours to further minimise impacts on traffic for the limited duration they are on site.</p>	4-42, 5-28 and 5-29

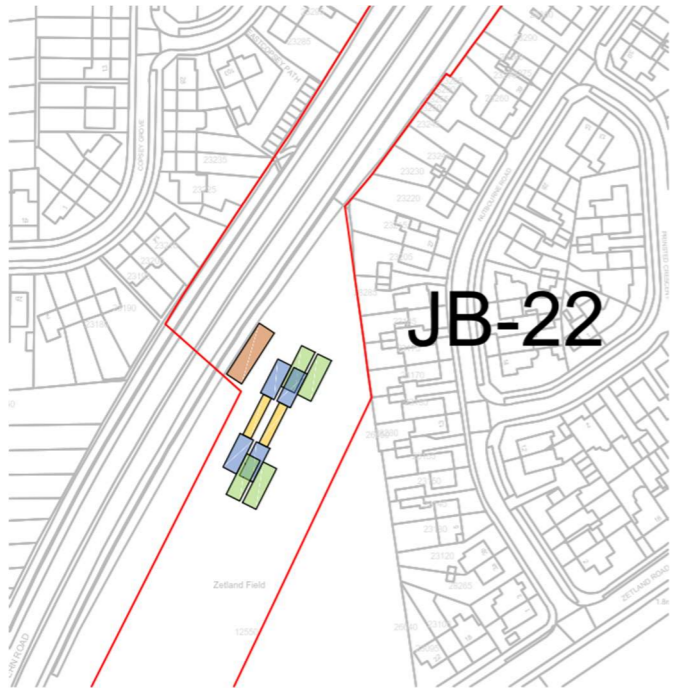

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB17			<p><u>Overview of Indicative JB Location</u></p> <p>JB 17 is positioned to the east of the carpark at Portsdown Hill Road.</p> <p><u>Cable Drum Delivery</u></p> <p>The cable drum delivery vehicles would use the M275, A27 Havant Bypass and the A3 (M), upon exiting A3 (M) at Junction 4, the construction vehicle would travel westbound along Purbrook Way, Stakes Road and Ladybridge Road before travelling south on A3 London Road and onto B2177 Portsdown Hill Road. Upon arrival, the delivery vehicles, under control of traffic marshall, would reverse into the Portsdown Hill Car Park to offload the cable drum and avoid blocking the public highway. Exit would then be taken in forward gear onto B2177 Portsdown Hill Road, before travelling onwards southbound on A3 London Road and A3 Southampton Road. Finally, the vehicle would enter M275 and travel southbound towards Portsmouth Cargo Terminal.</p>	6-10 and 6-15

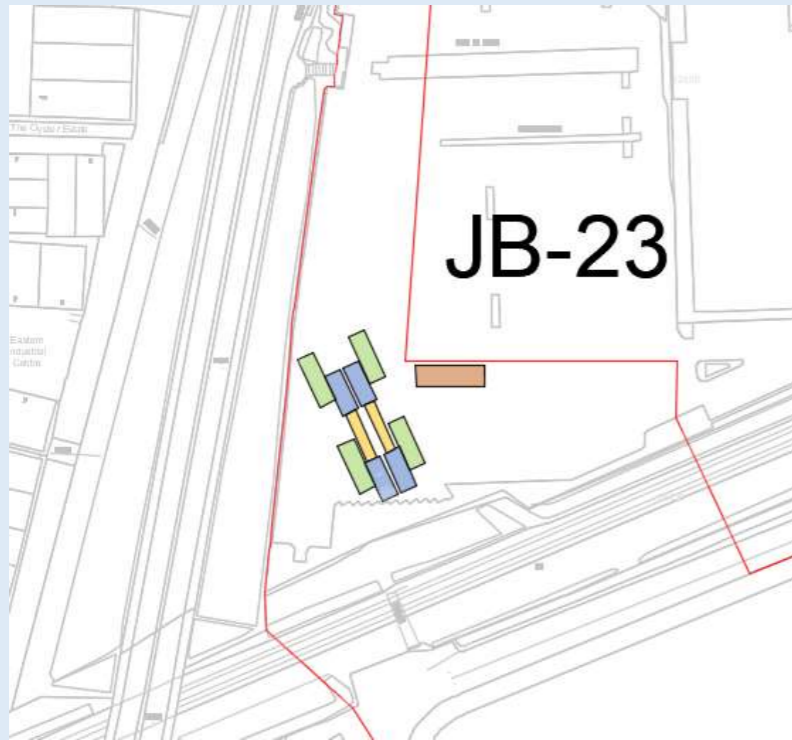

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
			<p>The swept path analysis of this route shown on Drawing 62100616/ATR/060 (Appendix D of the STA (REP1-068) and has shown that all manoeuvres on approach to Portsdown Hill car park can be accommodated by the existing highway layout. To enter and exit the car park itself, the existing traffic island and posts at the access junction will need to be temporarily removed as shown on Drawing 62100616/ATR/061 (Appendix D of the STA (REP1-068)).</p> <p>It is noted that the vehicle would be required to travel under a road bridge on A3 London Road, a bridge which forms part of B2177 Portsdown Hill Road. The cable drum delivery vehicle will have a maximum height of 4.9m, and as the road bridge in question is not specifically signposted to state otherwise, a headroom of at least 5.03m is available as per guidance set out in paragraph 104 of DfT guidance document "Prevention of Strikes on Bridges over Highways".</p>	


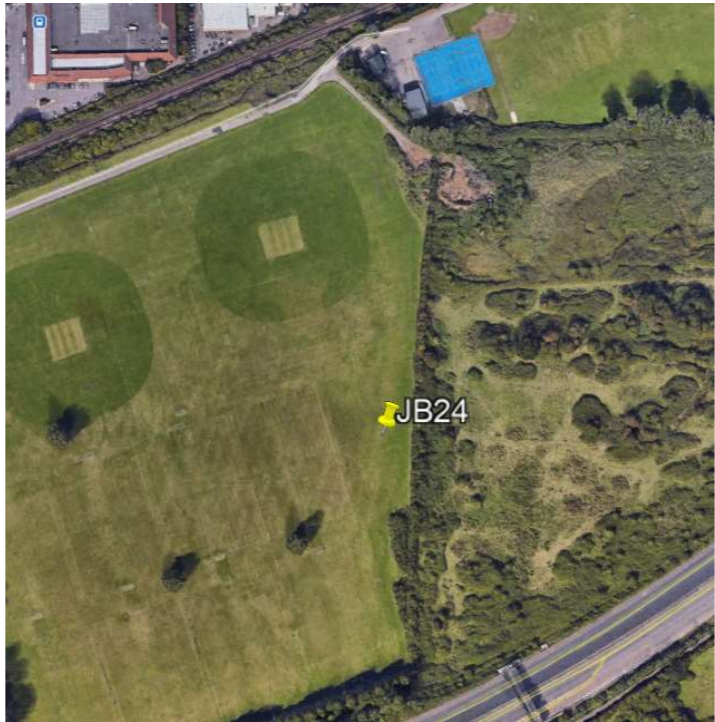
JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB18			<p><u>Overview of Indicative JB Location</u></p> <p>JB 18 is positioned in the east foot path of Farlington Avenue 45m north of Burnham Road.</p> <p>Within this location shuttle working would be put in place to facilitate the construction of the JB, as detailed in 2.5.2.3 of the FTMS REP1068.</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 18 will be as per JB 17but with the cable drum delivery vehicle continuing down Farlington Avenue from Portsdown Hill Road. Cable drums may be delivered outside of core working hours to further minimise impacts on traffic for the limited duration they are on site.</p>	6-16
JB19			<p><u>Overview of Indicative JB Location</u></p> <p>JB 19 is positioned in the western foot path of Farlington Avenue 60m north of Moortown Avenue</p> <p>Within this location shuttle working would be put in place to facilitate the construction of the JB, as detailed 2.5.2.3 of the FTMS REP1068.</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 19 will be as per JB 17. Cable drums may be delivered outside of core working hours to further minimise impacts on traffic for the limited duration they are on site.</p>	6-16 and 6-18

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB20			<p>The location of this JB and cable route on this Portsmouth Water land is currently under ongoing discussion with Portsmouth Water.</p> <p>Overview of Indicative JB Location</p> <p>JB20 is a single joint bay located in the parcel of land next to Scoutland's south of Eveleigh Road, positioned on the eastern boundary to avoid existing water services.</p> <p>Cable Drum Delivery</p> <p>Access to JB 20 will be as per JB 17 proceeding down south to Havant Road. Cable drums may be delivered outside of core working hours to further minimise impacts on traffic for the limited duration they are on site.</p>	6-22
JB21			<p>Overview of Indicative JB Location</p> <p>JBs 21 are positioned in the footpath and carriageway of Eastern Road 70m south of the junction with Havant Road.</p> <p>Joint bays will be constructed sequentially as to avoid 2no single lane closures in the same vicinity.</p> <p>Traffic will be controlled using a single lane closure, as detailed in 2.5.2.5 of the FTMS REP1068.</p> <p>Cable Drum Delivery</p> <p>Access to north bound JB will be as per JB 22 with continuation north along Eastern Rd.</p> <p>Access to the south bound JB will be via A2030 Havant Rd and the A3m Junction 5.</p>	7-02

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
			Cable drums may be delivered outside of core working hours to further minimise impacts on traffic for the limited duration they are on site.	

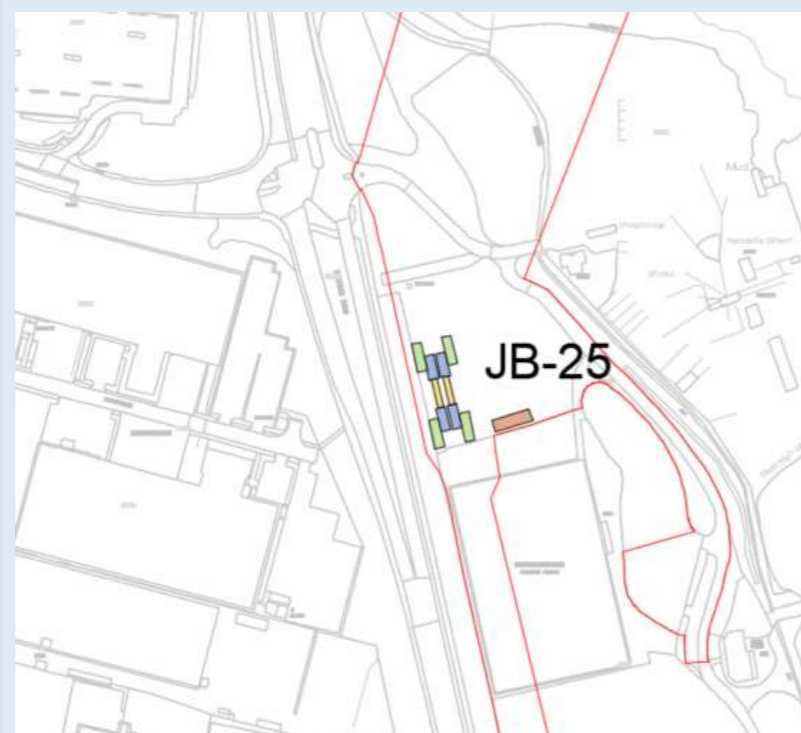
JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB22			<p><u>Overview of Indicative JB Location</u></p> <p>JB 22 is positioned in the northern edge of Zetland Fields.</p> <p><u>Cable Drum Delivery</u></p> <p>The cable drum delivery vehicles would use A3 Mile End Road, M275 and A27 and exiting at the junction with A2030 Eastern Road onto:</p> <ul style="list-style-type: none"> • A2030 Eastern Road (north of the A27): a dual carriageway road with two lanes in each direction, subject to a 40mph speed limit. <p>Access to Zetland Fields would be via the A2030 Eastern Road northbound carriageway, under traffic marshall control, towards the northern boundary of the open space area. Access would be facilitated by provision of a temporary construction access junction to / from Zetland Fields shown as location AC/7/a on Sheet 7 of the Access and Rights of Way Plans (APP-011 Rev03).</p> <p>Exit from the site would be achieved via the same route with delivery vehicles manoeuvring back onto the A2030 Eastern Road southbound carriageway under control of traffic marshall.</p> <p>The swept path analysis of this route shown on Drawing 62100616/ATR/070 (Appendix D of the STA) and shows how the cable drum delivery vehicles would access Zetland Fields from A2030 Eastern Road, requiring overrun of the existing centre island and temporary removal of fencing at the Zetland Fields boundary.</p>	7-04

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB23			<p><u>Overview of Indicative JB Location</u></p> <p>JB 23 is positioned in the south of Sainsburys Carpark.</p> <p><u>Cable Drum Delivery</u></p> <p>The cable drum delivery vehicles would use A3 Mile End Road, M275 and A27 and A2030 Eastern Road as with Joint Bay 22. Access into Sainsbury's car park would be via the A2030 Eastern Road / Fitzherbert Road traffic signal junction which is designed to accommodate HGV traffic due to it providing an access point to the retail part and Farlington industrial estate.</p> <p>Entry and exit from this Joint Bay location would be achieved via the same route.</p> <p>The swept path analysis of this route shown on Drawing 62100616/ATR/080 (Appendix D of the STA) and has shown that entry into Sainsbury's car park will require overrun of the existing central island. On exit the temporary removal of traffic signal poles may be required on the nearside footway of Fitzherbert Road to provide adequate width for the cable drum delivery vehicles.</p>	7-10

<p>JB24</p>			<p><u>Overview of Indicative JB Location</u></p> <p>JB 24 is positioned on the very eastern edge of Farlington Playing Fields.</p> <p><u>Cable Drum Delivery</u></p> <p>The cable drum delivery vehicles would use A3 Mile End Road, M275 and A27 and A2030 Eastern Road as with Joint Bay 22. Access into Farlington Playing Fields would be via the existing access to the public car park under the control of traffic marshall.</p> <p>As shown on Drawing 0616-ATR-002 (Appendix D of the STA), the cable drum delivery vehicle can access the site by straddling the offside and nearside lanes of the northbound carriageway of the A2030 Eastern Road. At the entrance to the Farlington Playing Fields car park, the cable drum delivery vehicle would overrun the existing central island and grass verge on the inside corner.</p> <p>The verge on the inside corner of the entrance to Farlington Playing Fields car park has a small earth bank, which already appears to have been partly flattened through existing vehicle use and there is no kerb where the overrun is anticipated to occur. This creates a wider carriageway width than shown on the OS mapping but, if required, the bank will be temporarily flattened to facilitate access, before being reinstated once works are complete. The central island is also in a poor state of repair and would be removed to facilitate access and reinstated on completion of construction.</p> <p>Further into the Farlington Playing Fields site there are wooden bollards adjacent to the carriageway and a width / height restricting barrier which would need to be removed to facilitate access and then reinstated once works are complete. . All entry and exit manoeuvres would be completed with traffic marshalling and / or traffic management.</p>	<p>7-12</p>
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JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
			<p>Track way or suitable alternative will be used to provide access around the boundary of the playing fields to the joint bay.</p> <p>Exit from Farlington Playing Fields would use the same access point for entry, with the cable drum delivery vehicle turning left onto the A2030 Eastern Road southbound carriageway under control of a traffic marshal. This is to avoid conflicts with vehicles using the Shell Petrol Filling Station and Holiday Inn site.</p> <p>Vehicle overhang of the existing grass verges at the entrance to the Farlington Playing Fields car park would occur on the nearside and offside of the vehicle. Like ingress, the existing central island would be over-run. To turn left onto the A2030 Eastern Road southbound carriageway, vehicle over-run would occur on the nearside verge and vehicle overhang would occur on the central island separating the two carriageways of the A2030 Eastern Road. The existing Advanced Directional Sign on the nearside verge and guard-railing situated in the central island would not be affected.</p>	

JB25



Overview of Indicative JB Location

8-03

JB 25 is positioned to the west of Kendall Wharf.

Cable Drum Delivery

The cable drum delivery vehicle would use A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:

- Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit;
- A2030 Velder Avenue: a single-carriageway road with one lane northbound and two lanes southbound, subject to a 30mph speed limit; and
- A2030 Eastern Road: a mixture of single-carriageway and dual-carriageway with two lanes northbound and two lanes southbound for all but a 1.0km section adjacent to Milton Common, which has two lanes northbound and one lane southbound. The A2030 also has a mix of speed limits ranging from 30mph to 50mph.

At the A288 Milton Road / A2030 Velder Avenue / Rodney Road traffic signal junction, cable drum delivery vehicles would be required to use the westbound exit lane (to Rodney Road) to travel through the junction to avoid overrunning traffic signal poles on the existing traffic islands. This is shown on Drawing 62100616/ATR/090 (Appendix D of the STA).. This manoeuvre would be completed with support from escort vehicles to manage vehicle conflicts at the junction.



The indicative Joint Bay location is in Kendall Wharf, directly accessible via Anchorage Road at the junction of A2030 Eastern Road / Anchorage Road / Kendalls Wharf. As vehicles are not permitted to turn right into Kendalls Wharf when travelling from the A2030 Eastern Road (south)

approach, access to this arm must be from the Anchorage Road approach, as such access is proposed using the existing highway network via the following:

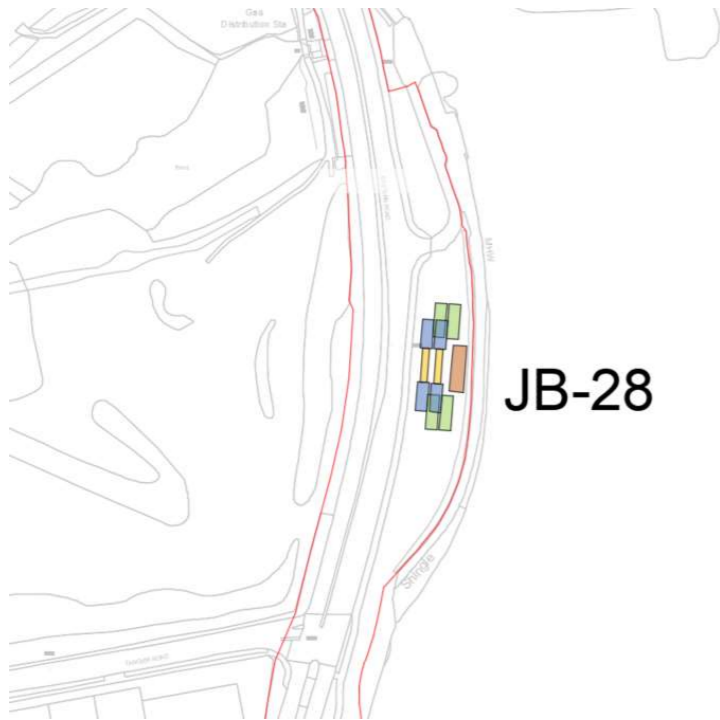

- Airport Service Road: a wide single-carriageway road that provides access to various industrial and commercial units, subject to a 30mph speed limit;
- Robinson Way: a single-carriageway road, which provides access to Interchange Park industrial estate and other commercial premises, subject to a 30mph speed limit; and
- Anchorage Road: a part wide single-carriageway / dual-carriageway with two lanes in each direction, subject to a 30mph speed limit.

At the A2030 Eastern Road / Anchorage Road traffic signal junction, cable drum delivery vehicles would be required to use the westbound exit lane (to Anchorage Road) to travel through the junction to avoid overrunning traffic signal poles on the existing traffic islands. This is shown on Drawing 62100616/ATR/091 (Appendix D of the STA).. This manoeuvre would be completed with support from escort vehicles to manage vehicle conflicts at the junction. Following this manoeuvre, the cable drum delivery vehicle would gain access to the Joint Bay from the existing Kendalls Wharf access road. Entry and exit would be completed in forward gear under the control of a traffic marshall. Access to this Joint Bay will be facilitated by provision of a temporary construction access point shown as location AC/8/a on Sheet 8 of the Access and Rights of Way Plans (APP-011 Rev03)

Vehicles exiting the site would travel north along the A2030 Eastern Road and onto the A27.

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB26			<p><u>Overview of Indicative JB Location</u></p> <p>JB 26 is positioned in the verge to the east of Eastern Road, north of the junction with Airport Service Road, therefore traffic signals will not be required.</p> <p>There will be a requirement for suitable chapter 8 signage to be positioned to control access and egress to site.</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 26 will be as per JB 25.</p>	8-03e, 8-04 and 8-05

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB27			<p><u>Overview of Indicative JB Location</u></p> <p>Joint bay 27 is to be located on grass area south of Great Saltens Mansions Harvester, therefore traffic signals will not be required.</p> <p>There will be a requirement for suitable chapter 8 signage to be positioned to control access and egress to site.</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 27 will be as per JB 29.</p>	8-09 and 8-10

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB28			<p><u>Overview of Indicative JB Location</u></p> <p>JB 28 is positioned in the grassed area south of Langstone Harbour viewing carpark, therefore traffic signals will not be required.</p> <p>There will be a requirement for suitable chapter 8 signage to be positioned to control access and egress to site.</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 28 will be as per JB 29.</p>	9-02

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB29			<p><u>Overview of Indicative JB Location</u> JB 29 is positioned at the very northern end of Milton Common.</p> <p><u>Cable Drum Delivery</u> The cable drum delivery vehicle would use A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:</p>	9-06



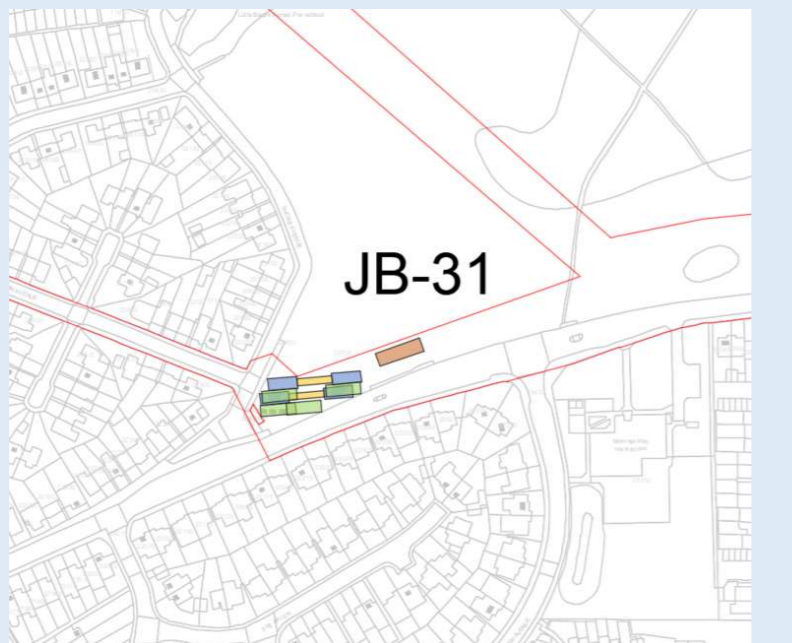

- Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit;
- A2030 Velder Avenue: a single-carriageway road with one lane northbound and two lanes southbound, subject to a 30mph speed limit; and
- A2030 Eastern Road: a mixture of single-carriageway and dual-carriageway with two lanes northbound and two lanes southbound for all but a 1.0km section adjacent to Milton Common, which has two lanes northbound and one lane southbound. The A2030 also has a mix of speed limits ranging from 30mph to 50mph.



The same manoeuvre would be required at the A288 Milton Road / A2030 Velder Avenue / Rodney Road traffic signal junction as described for access to JB25 as shown on Drawing 62100616/ATR/091 (Appendix D of the STA)..

Given that the indicative Joint Bay location is adjacent to the southern carriageway of the A2030 Eastern Road and on a dual-carriageway link subject to a 50mph speed limit it would not be recommended that cable drum delivery vehicles turn across the carriageway, even if this manoeuvre was to be completed with banksmen. Instead the delivery vehicles would use the existing highway network to access the southbound carriageway of the A2030 via the following:

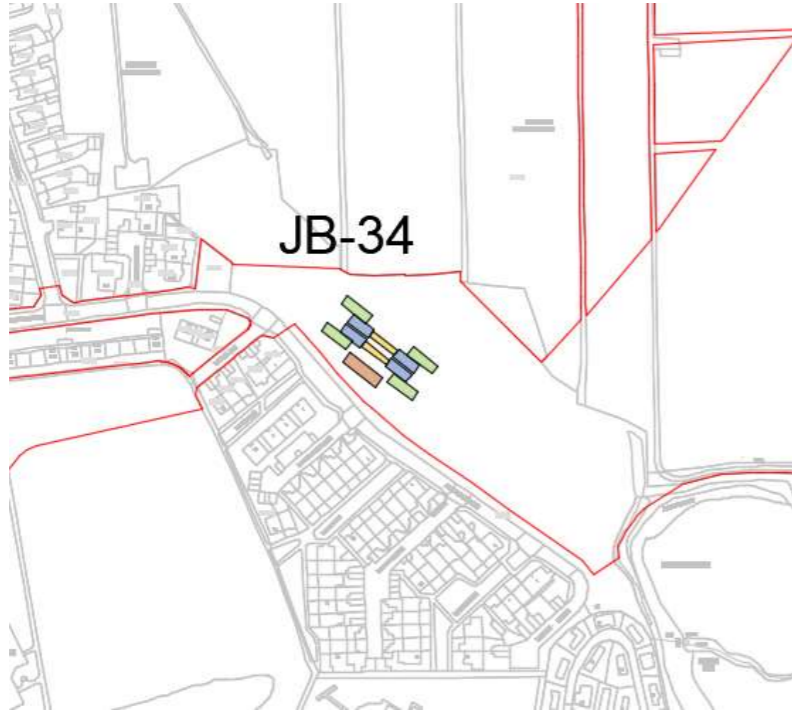

- Anchorage Road: a part wide single-carriageway / dual-carriageway with two lanes in each direction, subject to a 30mph speed limit;
- Robinson Way: a single-carriageway road, which provides access to Interchange Park industrial estate and other commercial premises, subject to a 30mph speed limit; and

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
			<ul style="list-style-type: none"> • Airport Service Road: a wide single-carriageway road that provides access to various industrial and commercial units, subject to a 30mph speed limit. <p>Following this manoeuvre, the cable drum delivery vehicle would gain access to the A2030 Eastern Road southbound carriageway. Access to the Joint Bay from A2030 Eastern Road will be facilitated by provision of a temporary construction access point shown as location AC/9/a on Sheet 9 of the Access and Rights of Way Plans (APP-011 Rev 03). Entry and exit would be completed in forward gear under the control of a traffic marshall.</p> <p>Cable drum delivery vehicles leaving the site would continue southbound along the A2030 Eastern Road and follow A2030 Velder Avenue, Fratton Way / Rodney Road, A2030 Goldsmith Avenue, A2030 Victoria Road North, A2030 Winston Churchill Avenue, A3 Anglesea Road, A3 Marketway and A3 Hope Street to reach Portsmouth Cargo Port.</p> <p>The swept path analysis of this route shown on Drawing ATR/090 (Appendix D of the STA), which as shown that other than at the A288 Milton Road / A2030 Velder Avenue / Rodney Road traffic signal junction, all manoeuvres can be accommodated by the existing highway layout.</p>	

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB30			<p><u>Overview of Indicative JB Location</u></p> <p>JB 30 is positioned on the western edge of Milton Common at the junction with Eastern Road and East Shore Way, therefore traffic signals will not be required.</p> <p>There will be a requirement for suitable chapter 8 signage to be positioned to control access and egress to site.</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 30 will be as per JB 29, continuing south along Eastern Road.</p>	9-06
JB31			<p><u>Overview of Indicative JB Location</u></p> <p>JB 31 is situated in the south east edge of Milton Common opposite Eastern Avenue.</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 31 will be via Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:</p>	9-13 and 9-06

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
			<ul style="list-style-type: none"> • Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit; and • A2030 Velder Avenue: a single-carriageway road with one lane northbound and two lanes southbound, subject to a 30mph speed limit; and continue east along Moorings Way 	
JB32			<p>Overview of Indicative JB Location</p> <p>JB 32 is positioned south of Milton Common to the east of Moorings Way and 100m to the north of Sanderling Road.</p> <p>Cable Drum Delivery</p> <p>Access to JB 32 will be via Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:</p> <ul style="list-style-type: none"> • Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit; and • A2030 Velder Avenue: a single-carriageway road with one lane northbound and two lanes southbound, subject to a 30mph speed limit; and continue east along Moorings Way. 	9-06 and 9-20

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB33			<p><u>Overview of Indicative JB Location</u></p> <p>JB 33 is positioned in grassed area south of Portsmouth University land. Access to JB33 from Longshore Way will require sections of fence to be removed temporarily.</p> <p><u>Cable Drum Delivery</u></p> <p>The cable drum delivery vehicle would use via A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:</p> <ul style="list-style-type: none"> • Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit; • A288 Milton Road: a wide single-carriageway with one lane northbound and two lanes southbound, subject to a 30mph speed limit; and • Locksway Road: a single-carriageway mainly residential road which also provides access to St James' Hospital and University of Portsmouth Langstone Campus, subject to a 20mph speed limit. 	9-29

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
JB34			<p><u>Overview of Indicative JB Location</u></p> <p>JB 34 is located in the grassed area north of Kingsley Road.</p> <p><u>Cable Drum Delivery</u></p> <p>Access to JB 34 via A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:</p> <ul style="list-style-type: none"> • Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit; • A288 Milton Road: a wide single-carriageway with on-street parking passing through Milton local centre, subject to a 30mph speed limit; and • Kingsley Road: a single-carriageway residential road, subject to a 20mph speed limit. 	10-14c

JB35



Overview of Indicative JB Location

JB 35 is positioned in the very southern edge of Bransbury Park.

Cable Drum Delivery

The cable drum delivery vehicle would use via A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:

- Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit;
- A288 Milton Road: a wide single-carriageway with on-street parking passing through Milton local centre, subject to a 30mph speed limit; and
- Bransbury Road: a wide single-carriageway residential road with on-street parking, subject to a 30mph speed limit.

The same manoeuvre would be required at the A288 Milton Road / A2030 Velder Avenue / Rodney Road traffic signal junction as described for access to JB 33.

Access to the Bransbury Park car park would be via the existing access junction. Entry and exit from the site would be in forward gear, controlled by banksmen. The existing gate and fence would need to be temporarily removed to facilitate access by cable drum delivery vehicles.

The swept path analysis of this route shown on Drawing ATR/110 (Appendix D of the STA) has shown that all manoeuvres can be accommodated by the existing highway layout, including on-street parking that occurs on Milton Road and Bransbury Road.

On exit, the cable drum delivery vehicles would head north along Milton Road and A2030 Eastern Road to reach the A27. At the A288 Milton Road / Goldsmith Avenue traffic

10-21
and 10-22

JB ID	JB Plan	Aerial Imagery	Notes	Land Plot(s)
			<p>signal junction the cable drum delivery vehicles would need to use the southbound exit lane to travel through the junction to avoid overrunning traffic signal poles on the existing traffic islands. This is shown on Drawing 62100616/ATR/303 Appendix D of the STA. This manoeuvre would be completed with support from escort vehicles to manage vehicle conflicts at the junction.</p>	
JB36			<p><u>Overview of Indicative JB Location</u></p> <p>JB 36, which is the TJBs, is positioned in the carpark at Fort Cumberland Road.</p> <p><u>Cable Drum Delivery</u></p> <p>The cable drum delivery vehicle would use via A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:</p> <ul style="list-style-type: none"> • Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit; 	10-32

			<ul style="list-style-type: none"> • A288 Milton Road: a wide single-carriageway with on-street parking passing through Milton local centre, subject to a 30mph speed limit; • Bransbury Road: a wide single-carriageway residential road with on-street parking, subject to a 30mph speed limit; • Bransbury Road: a wide single-carriageway residential road with on-street parking, subject to a 30mph speed limit; • Fort Cumberland Road: a single-carriageway residential road with some on-street parking, subject to a 30mph speed limit. <p>The same manoeuvre would be required at the A288 Milton Road / A2030 Velder Avenue / Rodney Road traffic signal junction as described for access to JB 33.</p> <p>Access to the Fort Cumberland car park would be from the existing access junction, albeit facilitated by removal of the existing height restriction when deliveries are taking place. Entry and exit from the site would be in forward gear, controlled by banksmen.</p> <p>On exit, the cable drum delivery vehicles would head north along Milton Road and A2030 Eastern Road to reach the A27, with the same manoeuvre required at the A288 Milton Road / Goldsmith Avenue traffic signal junction as described for access to JB 35.</p> <p>The swept path analysis of this route shown on Drawing 62100616/ATR/300, 301, 302 and 303 (Appendix D of the STA) has shown that all manoeuvres can be accommodated by the existing highway layout, with the exception of manoeuvres through the A288 Milton Road / A2030 Velder Avenue / Rodney Road and A288 Milton Road / Goldsmith Avenue traffic signal junctions described above. This includes on-street parking that occurs on Milton Road, Bransbury Road and Henderson Road.</p>	
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