Appendix TA - J

ACCESS TECHNICAL NOTE

PUBLIC

London Resort Company Holdings Ltd

THE LONDON RESORT

Access Road Design Note

DECEMBER 2020

PUBLIC

TYPE OF DOCUMENT PUBLIC

PROJECT NO. 70063529

DATE: DECEMBER 2020

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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	00			
Date	16/12/2020			
Prepared by	Oliver Faulkner			
Signature				
Checked by	David Dixon			
Signature				
Authorised by	Stephen Dellow			
Signature				
Project number	70063529			
Report number	DE-TN01			
File reference	70063529-de-tn01.docx			

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1. PRELIMINARIES

1.1. INTRODUCTION

1.1.1. WSP have been engaged to provide transport advice and input to the proposed development of The London Resort (hereafter “the Resort”) at the Swanscombe Peninsula in Kent, developing the transport, highway and infrastructure masterplan for the development business case. WSP have since been commissioned to prepare supporting transport documents for the DCO application, including outline design documents and drawings. The site masterplan is shown in **Figure 1.1** below.

1.1.2. This Technical Note (DE-TN01) sets out the principles of the highway design in terms of geometry and constructability, in conjunction with the design requirements of the wider design team. Of particular note is the package of information providing the transport and traffic assessments, also provided by WSP and contained within the main body of the Transport Assessment. These assessments determine the final capacities and traffic movements to which the highways should be designed.

Figure 1-1 - Site Masterplan (courtesy of APT)

1.2. BACKGROUND

1.2.1. The London Resort is to be provided with a dedicated Access Road, linking the Resort on the Swanscombe Peninsula with the A2 Ebbsfleet Junction to the south. The proposed Access Road is a 4-lane road of 40mph design speed and will be the primary access to the Resort for both visitors and staff, accommodating a variety of modes of transport (car, bus, coach and service vehicles).

1.2.2. In addition to the main Access Road, a route has been identified for a proposed "People Mover" track, providing dedicated access for pedestrians, cyclists or people arriving to the Resort by public transport at Ebbsfleet International Station. The form of the people mover route has currently been designed for a bus-sized vehicle as a worst-case, but could function for trams, monorails or other forms of transport in the future.

1.2.3. The people mover route will also provide intermittent access to land around the Bamber Pit former landfill site. This access is intended for maintenance and supply and does not allow for visitors or staff who have an alternative route available to use.

1.2.4. There have been considerable discussions with regards to the routing of the Access Road since the initiation of the development. The proposed route passes between several existing constraining features, such as topography, highways, flooding, proximity to the nearby high-speed rail track (HS1), designated SSSI lands and areas of landfill. In addition, Ebbsfleet and the surrounding lands are managed or within the authority of a number of stakeholders, including Ebbsfleet Development Corporation (EDC), Gravesham Borough Council, Dartford Borough Council, the Environment Agency, Highways England, National Rail, Kent County Council, the local communities and third-party landowners. This report does not seek to summarise or review these discussions, but considers the resultant option presented within the Development Consent Order (DCO) application.

1.2.5. The route of the Access Road is presented in **Appendix A**. General mitigative effects of the proposed route are localising sources of noise and light pollution, minimising the infrastructure corridor created by these highways and the HS1 track, minimising construction within designated SSSI and landfill sites and maximising the available lands for EDC known as Station Quarter South and Station Quarter North.

1.2.6. Further details of design principles and mitigation measures are presented in section 3.

2. ACCESS ROAD OPTION TESTING

2.1. INTRODUCTION

2.1.1. To determine the most appropriate access strategy, WSP have reviewed several constraints that affect the cost and ability to construct an access to the Resort.

2.1.2. The proposals for the development require a dual carriageway layout to accommodate the predicted level of traffic (exceeding 2,000 movements during peak Resort periods, which is set out in greater detail in the Transport Assessment. The design should prevent queueing back onto the A2 whilst also allowing for the future expansion to the Ebbsfleet Garden City (EGC).

2.1.3. There are a number of local constraints as well as national design standards to be considered. These are set out below;

- Junction proximity (Design Manual for Roads & Bridges) and potential for relaxations or departures from standard
- Design Standards to be achieved with no or minimal Departures from Standards required;
- Capacity and road safety of the highway alignment and (A2) junction capacity;
- Ability to provide suitable free flow movement from the A2 and reduce potential for queueing back onto the Strategic Road Network;
- Ability for alignment to be gateway to the Resort;
- Potential overall cost to develop scheme;
- Topography of route and the potential for environmental impacts close to existing or future residential properties;
- Potential Impact upon identified SSSIs and Scheduled Monuments;
- Impact on the developable land identified for the Ebbsfleet Garden City;
- Co-ordination of proposed infrastructure with existing to minimise overall impact;
- Impact on existing Landfill areas, including the residual environmental and economic impact on the access route;
- Impact upon existing users of the highway network;
- Impact on existing residents regarding air and noise; and
- Requirement for extensive earthworks.

2.1.4. The next section sets out 5 options that have been considered as potential access opportunities to the Resort and considers the existing and future constraints on each option and its potential impacts. WSP Drawing **3529-DI-SK-118 Rev A** shows the 5 options considered alongside a review of the pros and cons of each option (See **Appendix B**).

2.2. OPTION 1

2.2.1. **Option 1** enables the Resort traffic and the residential traffic to be segregated by upgrading the existing roundabouts north of the A2 for local traffic and by providing a new Resort only access. The existing roundabouts in this option are to be upgraded and replaced by a new single signalised junction that will provide additional capacity. It is proposed that this junction would primarily serve the local area including the approved residential developments (and potential EGC). The new junction would also provide access to the Resort for traffic from the east (a lower level of traffic is expected from the east, with most visitors accessing from the west).

2.2.2. The Resort access will run along the eastern side of the access corridor alongside the existing High Speed 1 (HS1) rail line, allowing for further development (Garden City) between the access corridor and the existing Ebbsfleet car park access route. The route should not require any significant construction on the landfill site located within the corridor. This route will affect the Site of Special Scientific Interest (SSSI) and scheduled monument, however, all options discussed within this technical note have some form of impact upon the SSSI / scheduled monument.

2.2.3. Given that the road will run along the eastern side of the corridor close to HS1, the proposal would have limited impact upon existing residents with regards to both air and noise whilst also restricting the potential for severance when the Garden City is developed. The aim of the scheme is also to run the road in a cutting to pass under the existing highway infrastructure and structures along the corridor which will also reduce any visual impacts associated with the road.

2.2.4. **Table 2-1** sets out a summary of the key constraints of Option 1.

Table 2-1 - Option 1 Summary of Constraints

Constraint	SSSI and Scheduled Monument	Landfill	Magnitude	Impact on existing and proposed residents	Impact on local highway network	Design Standards	Impact on delivery of EGC
Impact	Significant	Moderate	££	Low	Low	Possible departures	Low

2.2.5. **Table 2-2** sets out the positives and negatives of this option.

Table 2-2 - Positives and Negatives of Option 1

Positives	Negatives
▪ Uses existing infrastructure for local traffic; ▪ Does not require the moving or replacement of any pylons south of Ebbsfleet Station; ▪ Minimal build on landfill, reducing environmental and cost implications; ▪ Segregated Resort/local traffic allows improved capacity for both; ▪ Limited impact upon Ebbsfleet International overflow car park; ▪ Provides additional capacity to already constrained roundabouts; ▪ Allows greater infrastructure improvement for new Garden City; ▪ Removes potential for severance at Garden City with access located along eastern edge of corridor; and ▪ Minimises environmental impact by being in cutting.	▪ Requires third-party land; ▪ New access road from A2 requires large bridge structures with associated costs; ▪ Impact upon SSSI and ancient monuments; ▪ Bridges required along corridor, with associated cost implications; and ▪ Requires departures from standard.

2.4. OPTION 2

2.4.1. Option 2 is significantly different to Option 1. This arrangement puts the proposed access road to the Resort along the western side of the corridor, closer to the residential development at Eastern Quarry. The proposal combines both Resort and local traffic, at least as they exit the A2 with the B259.

2.4.2. Option 2 includes the provision of a grade separated roundabout some 650m north of the A2. This arrangement concentrates the traffic into a single free flowing corridor removing some of the existing capacity constraint at the existing junctions.

2.4.3. However, following any development of the Garden City, the combination of traffic onto one route is likely to cause congestion and associated capacity issues; this will be a common feature on those options with integrated networks. It is also worth noting that the western side of the site has severe level differences (+/- 12m) that will require extensive earthworks to retain any of the existing highway infrastructure, while the width and location of the link would likely require the removal of an existing electricity pylon. Given the complexities of the gradients in this location, to provide the route would severely restrict the number of HS1 parking spaces that could be retained and limit the land for any Garden City proposal in the future. Having the route run along the western edge of the access corridor would also restrict accessibility for future residents of any Garden City due to severance.

2.4.4. Furthermore, the route would cross the landfill, which has associated costs and environmental implications.

2.4.5. This option will also cause difficulties to the approved developments located on the west of the road, with access requiring drivers to navigate further north to a new roundabout and heading back south into the site. This would increase their journeys by some 1.2km.

2.4.6. **Table 2-3** sets out a summary of the key constraints of Option 2.

Table 2-3 - Option 2 Summary of Constraints

Constraint	SSSI and Scheduled Monument	Landfill	Magnitude	Impact on existing and proposed residents	Impact on local highway network	Design Standards	Impact on delivery of EGC
Impact	Significant	Very Significant	£££	Significant	Potential to get caught up in Resort traffic	Some departures	Medium – loss of station car park area but allows room south next to A2

2.4.7. **Table 2-4** sets out the positives and negatives of this option.

Table 2-4 - Positives and Negatives of Option 2

Positives	Negatives
▪ Provides additional capacity at the A2 by removing existing junctions and becoming free flow; ▪ No need for new merge / diverges from the A2; and ▪ All traffic along single corridor.	▪ Combining Resort and local traffic may lead to congestion following development of Garden City; ▪ Reliant on single roundabout which is unlikely to accommodate Garden City alongside Resort traffic; ▪ Electricity pylons will require relocation; ▪ Dual carriageway through landfill – significant costs and environmental implications; ▪ Minimal use of existing infrastructure; ▪ Potential departures form standards; ▪ Poor access to new residential developments and any future IKEA development; ▪ Topography on western side of corridor - increase cost and potential requirement to relocate or close existing highway; ▪ Impact upon SSSI and ancient monuments; and ▪ Impact upon existing Ebbsfleet overflow car park.

2.5. OPTION 3

2.5.1. **Option 3** provides a grade-separated junction consisting of a dumbbell pair of roundabouts which allow for a more compact highway arrangement compared to the gyratory options. The highway alignment north of the A2 to the junction is similar to that of Option 2 and has been designed to avoid the existing electrical pylon. There are several Departures from standards shown on this Option: There are sub-standard radii on the A2 junction; the radii to the south of the A2 are all 127m, which is two steps below the desirable minimum for the design speed. The eastbound lane of the A2 may also have sub-standard distances between the diverge from the A2 and the merge with the northbound lane of the new link, approximately 400m instead of the 450m required of a 70mph road.

2.5.2. **Table 2-5** sets out a summary of the key constraints of Option 3.

Table 2-5 - Option 3 Summary of Constraints

Constraint	SSSI and Scheduled Monument	Landfill	Magnitude	Impact on existing and proposed residents	Impact on local highway network	Design Standards	Impact on delivery of EGC
Impact	Significant	Very Significant	£££	Significant	Potential to get caught up in Resort traffic	Significant	Medium – loss of station car park area but allows room south next to A2

2.5.3. **Table** 2-6 sets out the positives and negatives of this option.

Table 2-6 - Positives and Negatives of Option 3

Positives	Negatives
▪ No requirement to relocate pylons; ▪ Provides additional capacity at the A2 by removing existing junctions and becoming free flow; ▪ No need for new merge / diverges from the A2; and	▪ Combining Resort and local traffic may lead to congestion following development of Garden City; ▪ Reliant on single junction which is unlikely to accommodate Garden City alongside Resort traffic; ▪ Dual carriageway through landfill – significant costs and environmental implications; ▪ Minimal use of existing infrastructure;

Positives	Negatives
▪ All traffic along single corridor.	▪ Poor access to new residential developments and any future IKEA development; ▪ Topography on western side of corridor - increase cost and potential requirement to relocate or close existing highway; ▪ Impact upon SSSI and ancient monuments; ▪ Impact upon existing Ebbsfleet overflow car park; and ▪ Departures from standards.

2.6. OPTION 4

2.6.1. Option 4 again segregates the Resort traffic and the local traffic although, in this case, by using some of the existing infrastructure to take the Resort traffic and providing an additional A2 junction to the east to take the local traffic. As with Option 1, there is potential for additional capacity to be created by the Garden City, building upon the new infrastructure. Option 4 also includes the removal of the roundabouts on both routes, allowing free-flowing traffic and improving capacity. However, it does require both routes to cross over each other and the A2, requiring bridging in several locations.

2.6.2. Again, this alignment requires the new dual carriageway to be built over the landfill site as well as along the western side of the corridor requiring extensive earthworks due to the existing roads and gradients in the area. This option also requires the moving of an electrical pylon along with all the associated costs and disruption and it uses little in the way of existing infrastructure.

2.6.3. This option will again provide accessibility issues should the Garden City come forward with a large dual carriageway located between residential areas although restricting available space for development.

2.6.4. **Table 2-7** sets out a summary of the key constraints of Option 4.

Table 2-7 - Option 4 Summary of Constraints

Constraint	SSSI and Scheduled Monument	Landfill	Magnitude	Impact on existing and proposed residents	Impact on local highway network	Design Standards	Impact on delivery of EGC
Impact	Significant	Very Significant	££££	Moderate	Low	Significant	Medium – land available but access issues

2.6.5. **Table** 2-8 sets out the positives and negatives of this option.

Table 2-8 - Positives and Negatives of Option 4

Positives	Negatives
▪ Segregates Resort and local traffic;	▪ Electricity pylons will require relocation;

Positives	Negatives
▪ Provides additional capacity at the A2 by removing existing junctions and becoming free flow; ▪ Ability to accommodate additional Garden City traffic; and ▪ Limited impact upon Ebbsfleet International overflow car park.	▪ Combining Resort and local traffic may lead to congestion following development of Garden City; ▪ Reliant on single junction which is unlikely to accommodate Garden City alongside Resort traffic; ▪ Dual carriageway through landfill – significant costs and environmental implications; ▪ Minimal use of existing infrastructure; ▪ Limited development space for future Garden City development; ▪ Topography on western side of corridor - increase cost and potential requirement to relocate or close existing highway; ▪ Impact upon SSSI and ancient monuments; ▪ Impact upon existing Ebbsfleet overflow car park; ▪ Increase cost of new roads both sides of corridor; and ▪ Potential departures from standard.

2.7. OPTION 5

2.7.1. **Option 5** has a similar approach to Options 2 and 3 with an integrated link carrying both Resort and local traffic, albeit one with an adjacent network to carry additional local traffic should it be required. This additional local section does not require further links onto the A2 and operates on the same junction as the main link. While this does allow traffic to be split from different locations in the area, it may also provide some additional capacity for the Garden City, although this will be constrained by the A2 offslips. The proposal may increase cost with the introduction of the additional structures alongside the need for the relocation of an existing pylon.

2.7.2. **Table 2-9** sets out a summary of the key constraints of Option 5.

Table 2-9 - Option 5 Summary of Constraints

Constraint	SSSI and Scheduled Monument	Landfill	Magnitude	Impact on existing and proposed residents	Impact on local highway network	Design Standards	Impact on delivery of EGC
Impact	Significant	Very Significant	££££	Moderate	Potential to get caught up in Resort traffic	Significant	Medium – loss of station car park area but allows room south next to A2

2.7.3. **Table** 2-10 sets out the positives and negatives of this option.

Table 2-10 - Positives and Negatives of Option 5

Positives	Negatives
▪ Allows for some segregation of Resort and local traffic; ▪ Provides additional capacity at the A2 by removing existing junctions and becoming free flow; ▪ Limited impact upon existing Ebbsfleet station parking; and	▪ Electricity pylons will require relocation; ▪ Combining Resort and local traffic may lead to congestion following development of Garden City; ▪ Restricts access into Ebbsfleet station car park; ▪ Reliant on single off-slip which is unlikely to accommodate Garden City alongside Resort traffic;

Positives	Negatives
▪ No new junctions on the A2.	▪ Significant substandard distant between successive merge / diverge - departures from standards; ▪ Dual carriageway through landfill – significant costs and environmental implications; ▪ Minimal use of existing infrastructure; ▪ Limited development space for future Garden City development; ▪ Topography on western side of corridor - increase cost and potential requirement to relocate or close existing highway; ▪ Impact upon SSSI and ancient monuments; and ▪ Increase cost of two new roads.

2.8. SUMMARY

Table 2-11 below provides a summary of the constraints associated with the options assessed.

Table 2-11 - Summary of Constraints

Constraint	SSSI and Scheduled Monument	Landfill	Magnitude	Impact on existing and proposed residents	Impact on local highway network	Design Standards	Impact on delivery of EGC
Option 1	Significant	Moderate	££	Low	Low	Possible departures	Low
Option 2	Significant	Very Significant	£££	Significant	Potential to get caught up in Resort traffic	Some departures	Medium – loss of station car park area but allows room south next to A2
Option 3	Significant	Very Significant	£££	Significant	Potential to get caught up in Resort traffic	Significant	Medium – loss of station car park area but allows room south next to A2
Option 4	Significant	Very Significant	££££	Moderate	Low	Significant	Medium – land available but access issues
Option 5	Significant	Very Significant	££££	Moderate	Potential to get caught up in Resort traffic	Significant	Medium – loss of station car park area but allows room south next to A2

2.8.1. Based on the assessment of each option, option 1 was considered to be the preferred approach for the following reasons:

- The Resort-based traffic can be provided with a free-flowing route north of the A2 junction, (although traffic from the east will need to utilise the new junction- around 20% of Resort traffic) and minimising the potential for queuing back onto the A2 which is part of the Strategic Road Network (SRN), which is a significant priority for Highways England;
- Reduces the risk of traffic congestion on the A2 junctions. If the Resort and local traffic were to be mixed there is greater potential for queuing to occur because of the weaving / lane changing that would occur and this would impact on the free flow nature of the A2 as well as increasing journey times for local traffic;
- Provides additional capacity at the A2 junctions to allow future development at Ebbsfleet Garden City alongside preserving capacity for existing and future communities;
- Allows future development west of the new road (Ebbsfleet Garden City) without creating severance between existing and new development;
- Road to be in cutting rather than at grade. This is due to the number of east / west routes across the corridor that need to be maintained. The additional benefits include minimising the impact (air and noise) on existing and proposed residents by routing alongside an existing transport corridor (HS1) as well as reducing the visual intrusion of the access road. The route will be in cutting at the same level as the HS1 rail line;
- Stays clear of existing local roads and infrastructure along the western side of the corridor that could require extensive earthworks and realignment of these roads; and
- Reduces the amount of construction on the former landfill site located within the corridor.

2.8.2. Whilst Option 1 will require a number of substantial structures, the advantages of the Access Road being on the eastern side of the development area are important in avoiding the implications of the extensive earthworks associated with the existing highway infrastructures major level differences to the west. Being on the eastern side also enables the road to avoid most of the landfill site.

2.8.3. It is evident from the assessments that whilst the other options have some benefits, none of them can be considered optimal given the constraints present on the site.

2.8.4. Since the principle of the access strategy was agreed and Option 1 was preferred, WSP have undertaken a suite of assessments to determine the appropriate layout to be promoted for the DCO. This is set out further in Section 3 of this note.

3. DESIGN PRINCIPLES

3.1.1. The following section reviews the design of the Access Road in sections, starting at the southern connection with the A2 and ending at The Resort to the north. The route of the Access Road is nominally north-south, with little deviation.

3.2. A2 JUNCTION

3.2.1. Following Option 1 being identified as the preferred access strategy, as set out in Section 2, Highways England submitted and obtained approval in the summer of 2020 for a revised Ebbsfleet Junction. The Highways England scheme has been designed to accommodate the local growth in the area, primarily the new development of the Station Quarter South & North regions, as part of the wider Ebbsfleet Garden City concept. The approved scheme layout is contained within **Appendix C**.

3.2.2. In doing so, it was considered appropriate to consider upgrades to the proposed layout rather than the single gyratory contained within Option 1. Through ongoing engagement with HE, the proposed HE Ebbsfleet Junction improvement scheme has been tested with the addition of Resort traffic. This has identified a suitable addition that could be delivered that would accommodate the increase in traffic. This includes;

- Revised access into Station Quarter South (SQS)
- Widening on both eastbound and westbound links between the two roundabouts
- Widened Eastern roundabout for 2 lanes circulation
- Widened eastbound A2 offslip onto eastern roundabout.

3.2.3. In addition, to maintain suitable pedestrian provision the proposed crossing on the northern eastbound link between the roundabouts has been relocated into the revised SQS access. This will improve the capacity of the junction and maintain suitable connections for those walking and cycling.

3.2.4. Vertical and horizontal alignments for the above adjustments are to be in accordance with DMRB design guidance and there are no known departures that will be required following the introduction of the revised layout.

3.2.5. All drainage proposed for the Highway England scheme is to be retained, with minimal increases in capacity where required for the small increase in impermeable catchment area. The proposed layout is shown in more detail within **Figure 3-1**.

Figure 3-1 - Highways England A2 Junction (WSP additions in colour)

3.3. GENERAL ACCESS ROAD CRITERIA

3.3.1. The overall form of the Access Road has 2no. 7.3m width carriageways, one northbound and the other southbound, each carrying two lanes of traffic. The access road contains a central reserve for the majority of its route northbound, although in locations is narrowed to 4 lanes of carriageway only due to existing constraints. This is discussed in more detail later.

3.3.2. Vertical and horizontal geometry is designed to DMRB standards, with a 40mph design speed.

3.3.3. All drainage to the Access Road is to be managed and attenuated in accordance with Sustainable Urban Drainage (SuDS) best practise. The Lead Local Flood Authority has been consulted and associated drainage strategy developed. Where possible, surface water is to be discharged to ground via infiltration but will have overflows to the Ebbsfleet River to cope with extreme storm situations.

3.3.4. To improve the quality of the highway runoff, basins, swales and filter drains are used to collect water and convey it to the discharge locations.

3.3.5. The carriageways are to be constructed in traditional asphaltic surfacing on road foundations. Where necessary, proprietary sub-base replacement systems will be used where the route of the carriageway requires “no-dig” construction. For further detail on the drainage strategy please refer to the Flood Risk Assessment (FRA)

3.4. A2 JUNCTION TO A2260 CROSSING

3.4.1. The A2 Ebbsfleet junction sits at a vertical level of approximately 14-18m AOD, however the land to the north of the junction reduces in level significantly to 6-7m AOD. As such, in order for the road to be able to route north and pass underneath the A2260, the Resort road link into the junction has been projected at a 5% gradient falling to the north. This “ramped" section of highway will be approximately 2-3m above existing ground level and will have earthworks embankments and retaining walls either side.

3.4.2. The route of the carriageway is restricted by the extent of the Ebbsfleet River effective floodplain, as defined by Environment Agency modelling. Retaining structures alongside the carriageway in this area will be installed to avoid embankments within the floodplain. Flood compensation areas have been identified to ensure that the capacity and level of the floodplain remains unaffected by the Access Road, if needed. The level of the Access Road is above the level of the floodplain.

3.4.3. The drainage for the southern section of carriageway will be directed to a series of individual ring soakaways located along the eastern and western boundaries of the embankments. Further towards the A2260 crossing, the drainage takes the form of attenuation storage beneath the line of the carriageway (box culverts or similar structural units).

3.4.4. The route of this section of highway passes over an existing pond. This pond will be relocated on a like-for-like basis to the east of its current location, to minimise impact on the local ecology and hydrology.

3.5. A2260 CROSSING

3.5.1. Where the new Access Road alignment crosses the existing A2260 carriageway, the proposed highway is to drop in level and create an underpass beneath the existing highway in order to minimise any impact upon existing traffic movements.

3.5.2. The structural report (see **Appendix D**) has identified the means by which this underpass can be created, also considering the methods by which traffic can be maintained across the A2260 and allowing for future upgrading of the existing highway to a dual carriageway.

3.5.3. Maintenance access to the HS1 rail track will be retained by a junction on the eastern side of the new Access Road. Due to the low frequency of movements that is expected into this maintenance access, a simple crossover between the dual carriageways of the Access Road will prove adequate with suitable waiting areas for vehicles to turn right. This removes the need for a more complex systems to avoid crossing carriageways.

3.6. A2260 TO EBBSFLEET STATION

3.6.1. The route of the new Access Road passes alongside the line of an existing structure locally called the ‘Bridge to Nowhere’ which was installed to provide an access across the HS1 rail line to connect to the Garden City in the future, but which is currently not in use.

3.6.2. In order that the Access Road does not obstruct the potential use of this structure in the future, it is proposed to extend the bridge over the new carriageways, such that it retains its original future proof function. See **Appendix D**.

3.6.3. The level of the Access Road between the A2260 and Ebbsfleet Station drops to a similar level to the adjacent HS1 rail tracks. bringing the access road at track level will enable the access road to

route past the existing station without affecting access and egress for passengers. Furthermore, it will enable suitable access into the UK Power Networks compound access/egress arrangements to the southeast.

3.6.4. The proposed route of the Access Road in this location will not impact upon the existing Ebbsfleet Station car park, however, will impact upon spaces yet to be built. Relevant discussions have been had with HS1 around the relocation of these spaces on a 'lift and shift' basis which will be subject to a separate agreement. The lift and shift plan is shown in WSP Drawing 3529-DI-SK-114.

3.6.5. Immediately before reaching the Ebbsfleet International Rail Station, the proposed route crosses the line of the existing International Way road and access way to carpark D. The impacts of this are discussed in further detail below and shown in **Figure 3-2**.

Figure 3-2 - Carpark D & "Bridge to Nowhere"

3.7. INTERNATIONAL WAY & CARPARK D

3.7.1. International Way currently links the A2260 to the south with the entrance to Ebbsfleet International Station and provides access into what is known as Car Park D. Located just to the south of the Station, International Way crosses the HS1 rail tracks via an existing bridge. To enable delivery of the access road, this bridge will be extended over the proposed new Access Road.

3.7.2. **Appendix D** provides additional structural information on the outline proposals for this bridge extension.

3.7.3. The existing roundabout junction located to the west of the existing bridge will need relocating further to the west, to allow space for the proposed Access Road to route below and connection to the new people mover route at the higher level linking the station with the London Resort to the north.

3.7.4. The above actions will force the link from International Way to carpark D to require a new route, and therefore a new section of road will be created.

3.7.5. Access into carpark D will now be further to the west, making use of an existing aisle within the carpark to minimise loss of parking spaces. The access takes the form of a new left in / right in junction allowing entry from both northbound and southbound traffic, and entrance ramp. The carpark barriers will be located on this ramp.

3.7.6. A small roundabout will be provided on International Way prior to this access, such that vehicles that do not intend to enter the parking barriers have the capacity to turn around.

3.7.7. The new section of carriageway will be 7.3m width, with adjacent footway/cycleway to ensure pedestrian routes remain continuous, alongside the introduction of a new pedestrian route on the northern side of International Way to tie into existing facilities.

3.8. PEOPLE MOVER

3.8.1. In order to provide a dedicated route for pedestrians, cyclists and other users of public transport to access the Resort, a “People Mover” carriageway is proposed between Ebbsfleet Station and The Resort.

3.8.2. The form of the people mover will be a 6m carriageway, with 5m footway/cycleway located on the western flank.

3.8.3. The southern terminus of the people mover will be horseshoe shaped concourse to allow coaches/trams/buses using the route to collect passengers and to turn around. The concourse sits at high level partially over the route of the adjacent Access Road, at a similar level to that of Ebbsfleet International Station.

3.8.4. As per the Design and Access Statement, a plaza is to be provided south of the concourse, to provide a pick-up/drop-off area for local public transport (busses, coaches, taxis, etc.) and provide a security barrier to restrict access to the people mover route itself.

3.8.5. The people mover route will intermittently be required for maintenance vehicles travelling to the sports centre and warehouses further to the north at Bamber Pits.

3.8.6. Immediately north of the people mover concourse, the route passes along the western boundary of the SSSI/Scheduled Monument area. This has been chosen in discussion with stakeholders, following confirmation that this section of the SSSI has already had significant investigation over the years and follows a path of minimal impact. The route avoids passing over historic landfill. This section of the route will be constructed using “no-dig” methods, to minimise disruption. The level of the carriageway is therefore above that of existing ground, whilst passing through the SSSI. **Figure 3-3** sets out the location of the SSSI and Scheduled monument in this location.

3.8.7. The use of a proprietary lightweight sub-base replacement system within the “no-dig” areas allows the carriageway to be constructed without disturbing the ground beyond removal of topsoil. Should archaeological or geological investigations prove necessary in the future, the carriageway may be broken up and the proprietary system removed.

Figure 3-3 - SSSI & Scheduled Monuments

3.8.8. To the north of the SSSI, the route follows parallel to that of the Access Road, and any design considerations applicable to the Access Road also impact the people mover. For the subsequent paragraphs of this section, references to the Access Road can be taken to include the people mover unless otherwise stated.

3.8.9. The Transport Assessment **Appendix TA-**I provides further details on the route options for the people mover route and the impacts upon the existing constraints.

3.9. EBBSFLEET INTERNATIONAL STATION

3.9.1. The Access Road passes to the west of Ebbsfleet International Station immediately after passing beneath the International Way bridge (see section 3.5).

3.9.2. Ebbsfleet Station sits on multiple levels, with the rail tracks and platforms at low level, whilst the ticket station and concourse sit at higher level. As a comparative, the Access Road is at low level adjacent to the rail tracks, whereas the people mover is at high level with the ticket station. The proposed layout in this section is shown in **Figure 3.4**.

3.9.3. To ensure that the Access Road does not affect the existing station, contiguous piled walls are proposed either side of the new carriageway to retain the existing high ground and structures.

3.9.4. The people mover concourse will be constructed on a separate structural deck to that of the International Way bridge, to aid with maintenance and ownership in the future. This will also allow an air gap to be created between the two elements.

3.9.5. **Appendix D** contains further details on the structural outline and drawings for the piling, bridging and decking around the station.

Figure 3-4 - Ebbsfleet Station, People Mover Concourse & International Way Bridge

3.10. EBBSFLEET STATION TO CHALK SPINES

3.10.1. North of Ebbsfleet station there are a number of constraints that the proposed Access Road scheme needed to consider including the SSSI, existing pylons, existing landfill and the HS1 rail tracks.

3.10.2. North of the station the Access Road routes as close to the HS1 alignment as possible in order to have the least impact upon the SSSI and landfill which is located on its western side. As the route continues north, the central reserve is removed, reducing the corridor width to four lanes of traffic in order to pass the existing pylon.

3.10.3. The Access Road then crosses the path of an existing public right of way currently served by a pedestrian bridge over the HS1 rail tracks.

3.10.4. It is proposed to extend this footbridge over the Access Road. The deck of this bridge should strike the rising ground level to the west of the road before reaching the people mover route. Continuity over the people mover will be served by a simple pedestrian crossing.

3.10.5. The Access Road crosses the site of an existing pond near the Bamber Pit area. Similar to section 3.3.3, the pond is to be relocated on a like-for-like basis to the west, such that ecological and hydrological impacts are minimised.

3.10.6. Due to restrictions on the widths of cutting into the chalk spines to the north, the Access Road carriageways are split apart with a wider central reservation in this area. The widths of the carriageways themselves will remain the same at 7.3m.

3.10.7. Target levels for the northern section of this area are dictated by the crossing points through the chalk spines. Buro Happold are providing the engineering detail for these, since they are tied directly to the structural design of the Resort entrance building/carpark.

3.10.8. The people mover has a small junction in the southwest of this area, to provide maintenance access to proposed warehouses south of the new pond location.

3.11. CHALK SPINES

3.11.1. Two chalk spines pass the northern end of the Access Road, immediately before connecting to the Resort proper. These run on an east-west line, carrying local network rail tracks (southern spine) and the existing A226 highway (northern spine). **Figure 3-5** show the details in this location.

Figure 3-5 - Chalk Spines, Security Area & Resort Access

3.11.2. The spines take the form of tall thin geological features, c18m in height with existing infrastructure running along the top ridge.

3.11.3. The Access Road and people mover carriageways are to pass through the chalk spines at lower level via jacked boxes or similar structural means (designed as part of the on-site works)

3.11.4. The level of the cuttings through the chalk spines has been dictated by the required levels of the Resort carpark/entrance area.

3.11.5. Between the two chalk spines, a security area is proposed. This is to provide the Resort with a means to perform security checks on vehicles prior to their accessing the Resort, and to be able to turn them from the northbound to the southbound Access Road carriageways if required without going into the Resort entrance or carpark.

3.11.6. The security area will also be providing checks on large vehicles, such as goods, maintenance or multiple-person vehicles. This section has been sized such that these vehicles can be taken off the main line of the Access Road carriageway and provide sufficient stacking to avoid creating jams.

3.11.7. The provision of 2no. roundabouts has been proposed such that vehicles can turn away prior to accessing the Resort and also to slow vehicular traffic down with a horizontal deflection to the Resort approach, such that vehicles are unable to approach the Resort at speed.

3.11.8. The security area and roundabouts are to have their own surface drainage system, given the likelihood of stationary vehicles and difficulties in crossing the spines with drainage routes. This system is to incorporate SuDS to improve water quality, biodiversity and provide attenuation, as well as provide a feature as visitors arrive at the Resort.

3.11.9. The people mover has a small bellmouth junction for the Sports Centre to the west, before passing through the northern spine.

3.11.10. Immediately north of the chalk spines, the Access Road connects onto the Resort's onsite highways network at the carpark/entrance plaza.

3.12. SUMMARY

3.12.1. The access strategy for the London Resort has been through a stringent technical process, firstly looking at the options available to enable suitable access for visitors from the A2. Following this optioneering, WSP have undertaken significant traffic modelling and technical review of the access to enable a deliverable layout taking into account the considerable constraints in this location.

3.12.2. The proposals minimise the impact upon the existing SSSI and Scheduled monument as is reasonably possible. Furthermore, the Resort Access Road, where necessary retains all existing highway infrastructure so that no impact is made upon existing users.

3.12.3. The junction arrangement at the A2 Ebbsfleet Junction has been tested through detailed traffic modelling as contained within the Transport Assessment and can accommodate the level of traffic associate d with the London Resort.

DO NOT SCALE

KEY:

- PROPOSED RETAINING WALL
- EDGE OF PERMANENT WORKS BOUNDARY
- ORDER LIMIT
- INDICATIVE LOCATION OF EXISTING OR PLANNED CAR PARKING BAY
- CAR PARK BAY TO BE TEMPORARILY REMOVED DURING WORKS (1,173)
- CAR PARK SPACE TO BE REMOVED DUE TO HIGHWAY LOCATION (975)
- CAR PARK SPACE ADDED (22)
- POTENTIAL MULTISTORY CAR PARK DEVELOPMENT AREA (802)
  7 DECKS REQUIRED TO ACCOMMODATE 5,500 BAYS
- POTENTIAL MULTISTORY DEVELOPMENT AREA FOR RELOCATED SPACES (404)
  3 DECKS REQUIRED TO RELOCATE 1,051 LOST BAYS
- EXISTING UNBUILT CAR PARK E
- CUT INDICATOR
- FILL INDICATOR

CAR PACK SPACES	TEMPORARY AFFECTED	PERMANENTLY AFFECTED
BUILT SPACES VIP (CAR PARK F)	–	324
BUILT SPACES CAR PARK D	264	39
BUILT SPACES CAR PARK E	–	–
UNBUILT SPACES VIP (CAR PARK F)	–	–
UNBUILT SPACES CAR PARK D	–	–
UNBUILT SPACES CAR PARK E	909	611
TOTAL	1,173	975

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P04	11/12/2020	SB	TABLE ADDED AND MINOR AMENDMENTS	JJ	JJ
P03	09/12/2020	SB	CAR PARK D LAYOUT AMENDED	JJ	JJ
P02	10/11/2020	SB	MINOR AMENDMENTS	OJF	JJ
P01	03/11/2020	SB	FIRST ISSUE	OJF	JJ

DRAWING STATUS: S2 - FOR INFORMATION

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CLIENT: THE LONDON RESORT

PROJECT: THE LONDON RESORT

ARCHITECT: APT

TITLE: HIGHWAY IMPACT ON HS1 PARKING - FUTURE AND EXISTING

SCALE @ A1:	CHECKED:		APPROVED:
1:2000	OJF		DD
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70063529	SB	SB	December 20

DRAWING No: 3529-DI-SK-114 REV: P05

File name: \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70063XX\70063529 - LONDON PARAMOUNT RESORT\03 VIP\DE DEVELOPMENT\02 CAD BIM MODELS\AUTOCAD\SK\SK-114.DWG, printed on 15 December 2020 14:47:30, by Bebij, Silvia

Appendix A

GENERAL ARRANGEMENT

THE LONDON RESORT

The London Resort Development Consent Order

BC080001

Highways
General Arrangement

Document reference: 2.12
Revision: 0

December 2020

Planning Act 2008
The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009
Regulations 5(2)(o), (p) & 6(2)

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THE LONDON RESORT

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THE LONDON RESORT DEVELOPMENT CONSENT ORDER

Regulation 5(2)(o) – Location Plan

DARTFORD BOROUGH COUNCIL, GRAVESHAM BOROUGH COUNCIL AND THURROCK COUNCIL

Sheet 1 of 1

THE LONDON RESORT

Key

- Order limits
- Local Authority Boundary
- Area outside Order Limits

Apt

235 St John Street London EC1V 4NG www.apt.london

Project	Project No.
The London Resort	19072

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THE LONDON RESORT DEVELOPMENT CONSENT ORDER

Regulation 5(2)(o) – Location Plan

DARTFORD BOROUGH COUNCIL, GRAVESHAM BOROUGH COUNCIL AND THURROCK COUNCIL

Sheet 1 of 1

Application Number
BC080001

Drawing Reference
LR-PL-APT-DCP-2.1

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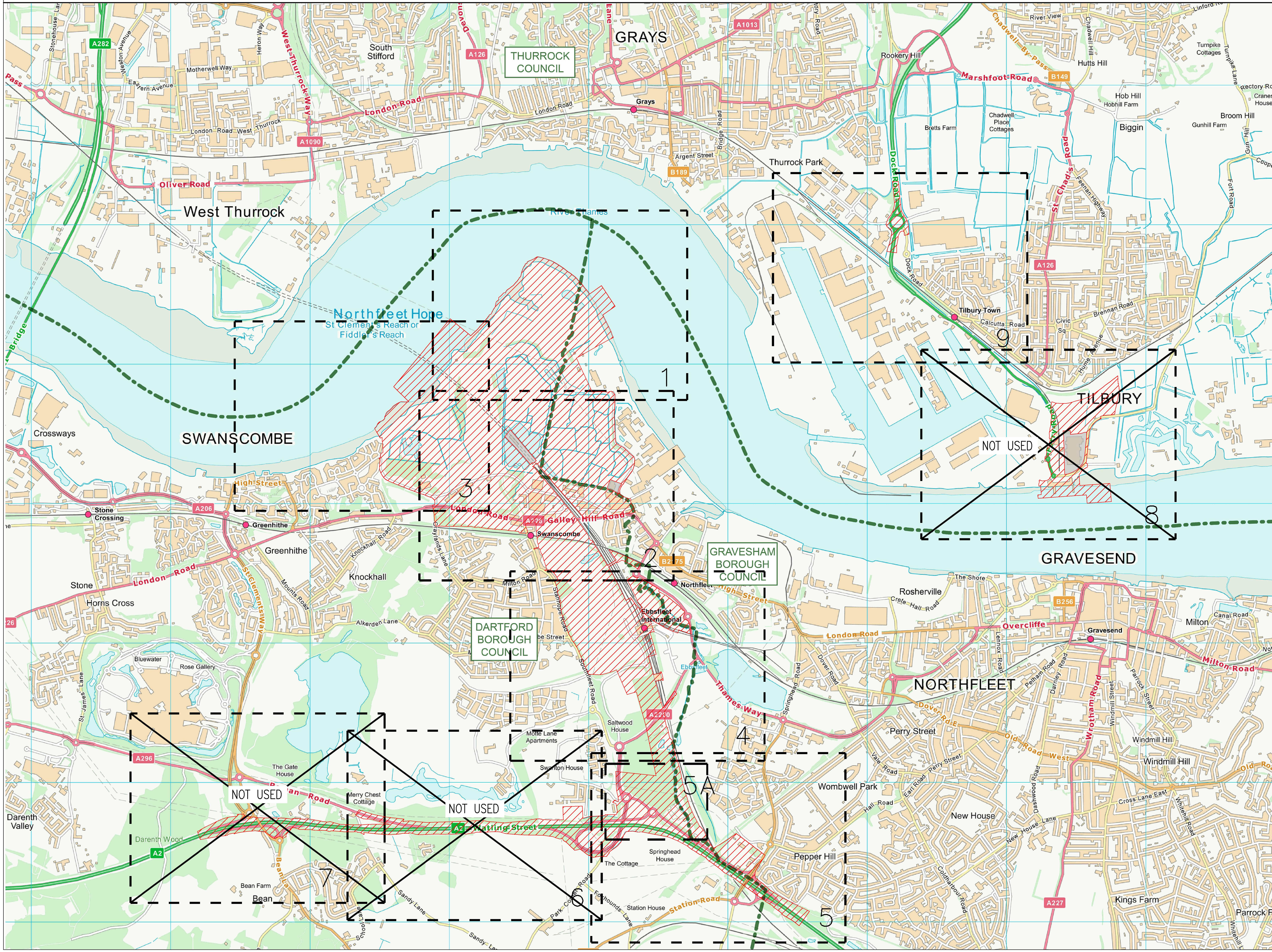
1 : 12500 @ A1	1 of 1	0

THE LONDON RESORT DEVELOPMENT CONSENT ORDER

Regulation 5(4) - Key Plan

DARTFORD BOROUGH COUNCIL, GRAVESHAM BOROUGH COUNCIL AND THURROCK COUNCIL

Sheet 1 of 1



KEY:

- ORDER LIMITS
- LOCAL AUTHORITY BOUNDARY
- AREA OUTSIDE ORDER LIMITS

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Regulation 5(4) - Key Plan

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Sheet 1 of 1

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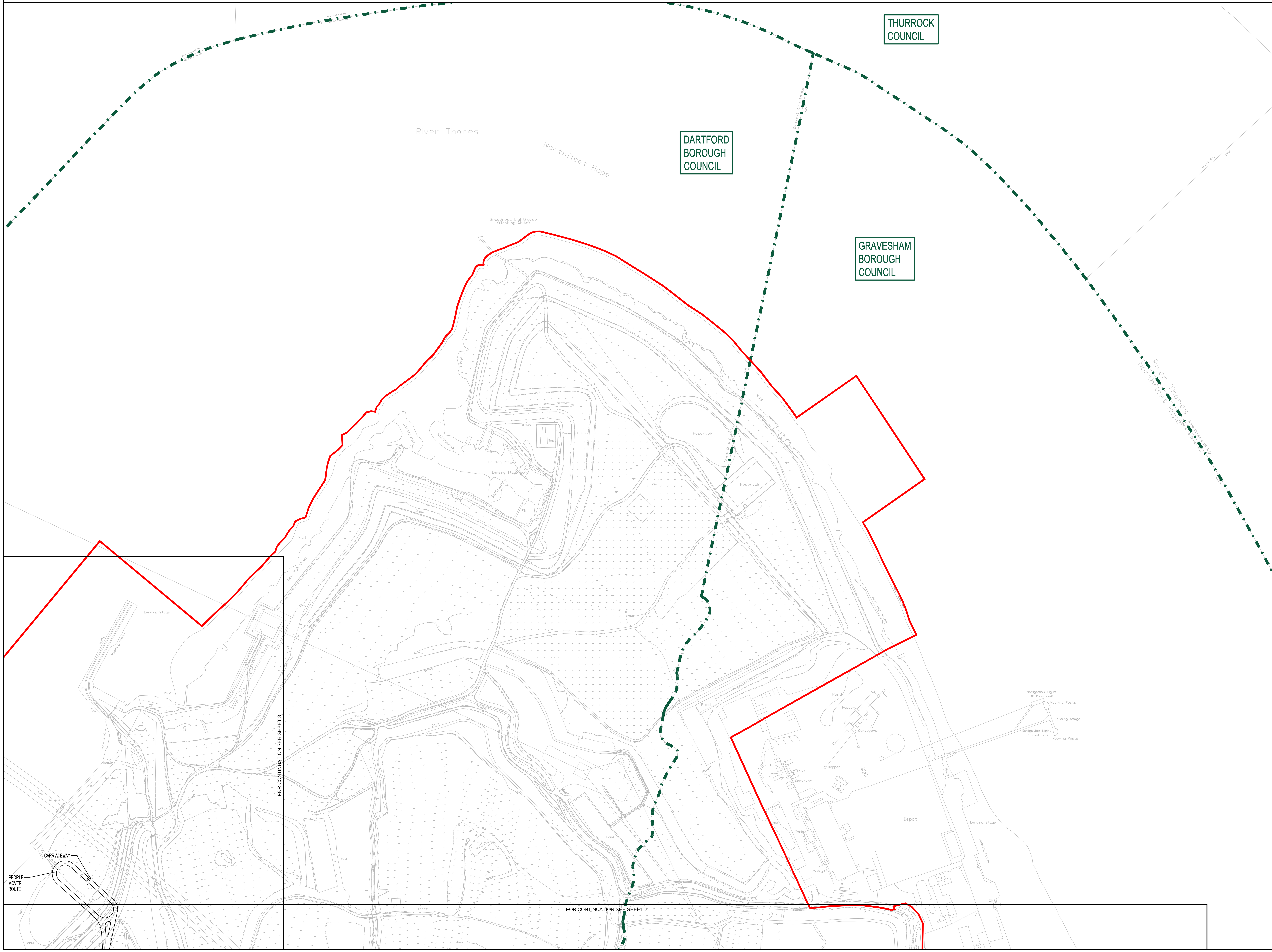

THE LONDON RESORT

KEY:

- ORDER LIMITS
- LOCAL AUTHORITY BOUNDARIES
- KERB

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THE LONDON RESORT DEVELOPMENT CONSENT ORDER

Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement

DARTFORD BOROUGH COUNCIL, GRAVESHAM BOROUGH COUNCIL AND THURROCK COUNCIL

Sheet 1 of 9

Application Number
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THE LONDON RESORT DEVELOPMENT CONSENT ORDER
Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement
DARTFORD BOROUGH COUNCIL AND GRAVESHAM BOROUGH COUNCIL
Sheet 2 of 9

ILLUSTRATIVE

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FOR CONTINUATION SEE SHEET 1

FOR CONTINUATION SEE SHEET 3

PEOPLE MOVER ROUTE

CARRIAGEWAY

DARTFORD BOROUGH COUNCIL

GRAVESHAM BOROUGH COUNCIL

Botany Marshes

NEW HIGHWAYS TO CONNECT TO ONSITE WORKS AS SHOWN ON THE WORKS PLANS

PILGRIMS ROAD

HIGH STREET

SWANSCOMBE TRAIN STATION

EXISTING HIGH SPEED RAIL TRACK

HS1 HIGH SPEED RAIL

A226

A226–GALLEY HILL ROAD

PROPOSED UNDERPASS

EXISTING ROAD BRIDGE OVER RAILWAY

SECTION F–F
REFER TO NOTE 11

SEE INSET A

BAMBER PIT

VERGE/LANDSCAPING

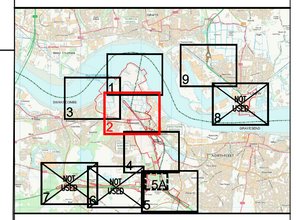
EXISTING OVERHEAD LINE

EXISTING BASIN TO BE RELOCATED

EXISTING PEDESTRIAN BRIDGE OVER RAILWAY TO BE EXTENDED OVER NEW HIGHWAY

FOR CONTINUATION SEE SHEET 4

INSET A
SCALE @ 1:1000



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- AREA OUTSIDE OF ORDER LIMITS
- CUT INDICATOR
- FILL INDICATOR
- KERB
- VERGE/LANDSCAPING
- RETAINING STRUCTURE
- INDICATES A RESIDUAL RISK AS A WARNING.
- ATTENUATION STORAGE OR INFILTRATION BASINS
- EXISTING POND TO BE RELOCATED

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Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement
DARTFORD BOROUGH COUNCIL AND GRAVESHAM BOROUGH COUNCIL
Sheet 2 of 9

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BC080001	
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DARTFORD BOROUGH COUNCIL AND THURROCK COUNCIL
Sheet 3 of 9

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THURROCK COUNCIL

DARTFORD BOROUGH COUNCIL

River Thames

Stoneness Lighthouse (Flashing white)

Stone Ness

FOR CONTINUATION SEE SHEET 1

FOR CONTINUATION SEE SHEET 2

CARRIAGEWAY

PEOPLE MOVER ROUTE

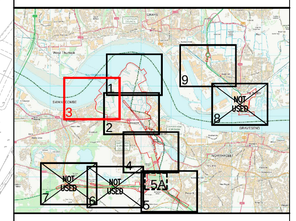
CARRIAGEWAY

PEOPLE MOVER ROUTE

CARRIAGEWAY

PEOPLE MOVER ROUTE

CARRIAGEWAY



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DARTFORD BOROUGH COUNCIL AND THURROCK COUNCIL

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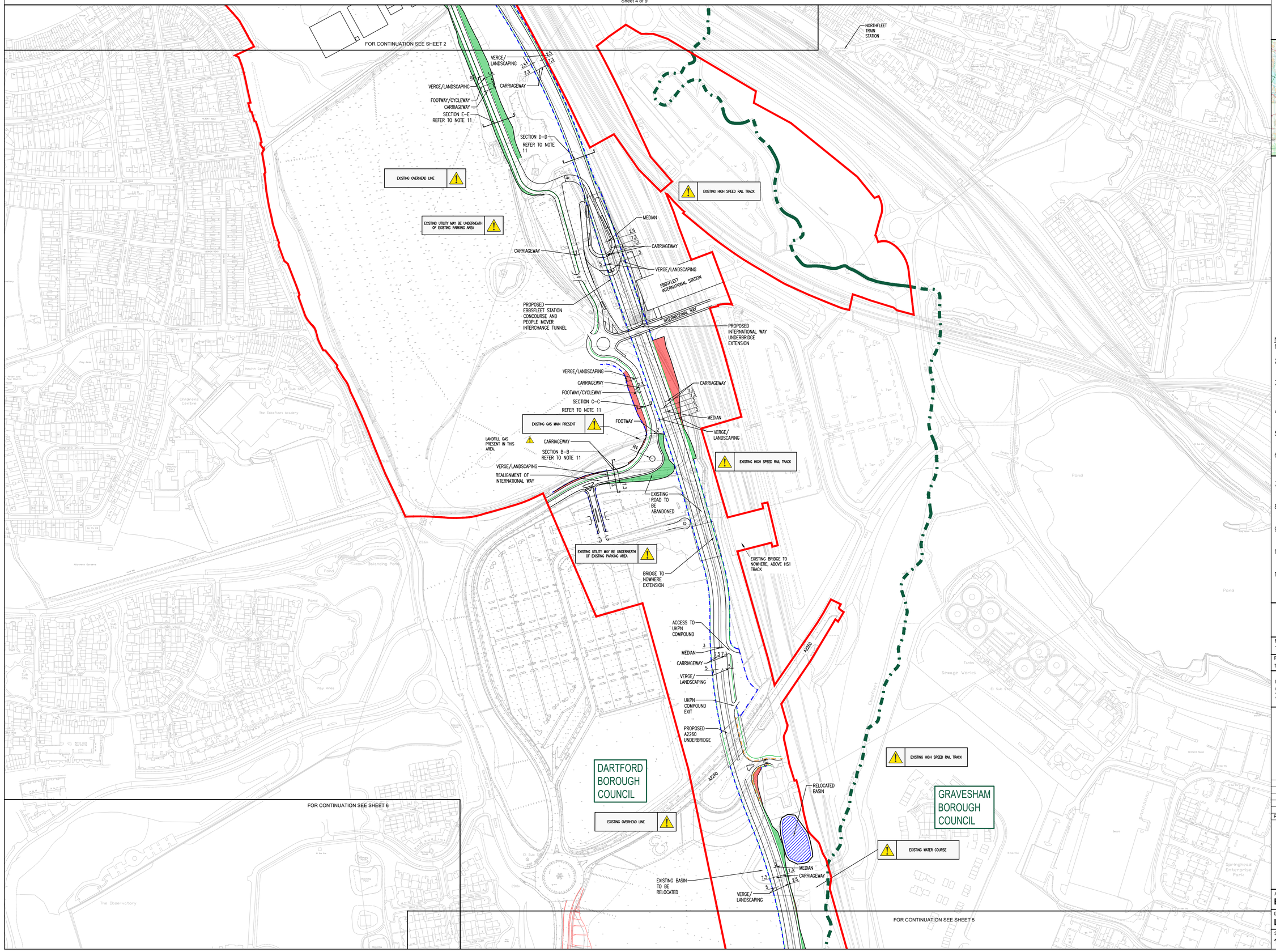

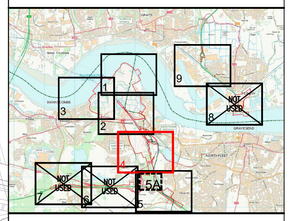

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- LOCAL AUTHORITY BOUNDARIES
- CUT INDICATOR
- FILL INDICATOR
- KERB
- VERGE/LANDSCAPING
- RETAINING STRUCTURE
- VEHICLE RESTRAINT SYSTEM
- INDICATES A RESIDUAL RISK AS A WARNING.
- PROPOSED HIGHWAYS ENGLAND SCHEME

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Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement

DARTFORD BOROUGH COUNCIL AND GRAVESHAM BOROUGH COUNCIL

Sheet 4 of 9

Application Number
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THE LONDON RESORT DEVELOPMENT CONSENT ORDER
Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement
DARTFORD BOROUGH COUNCIL AND GRAVESHAM BOROUGH COUNCIL
Sheet 5 of 9

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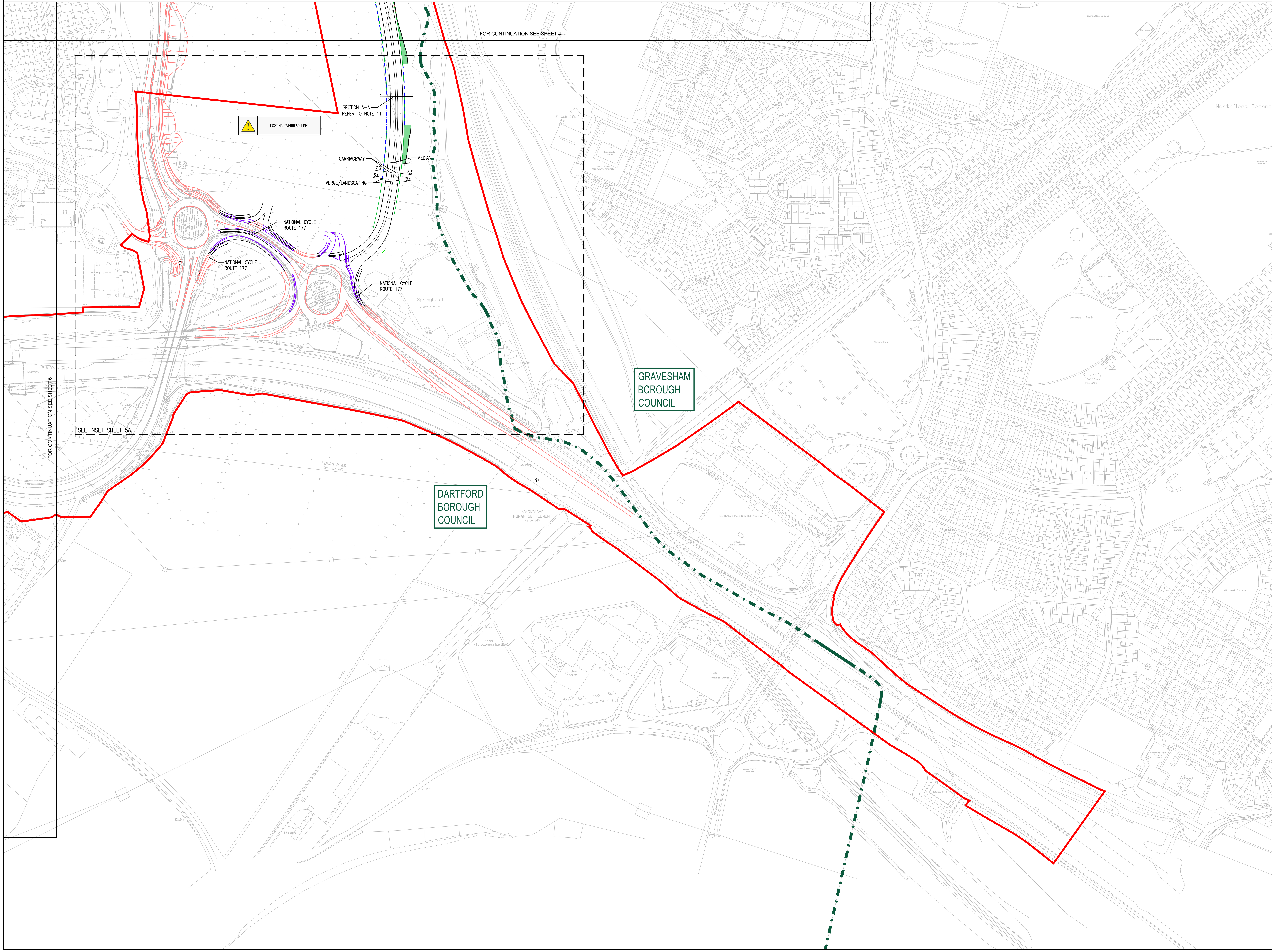
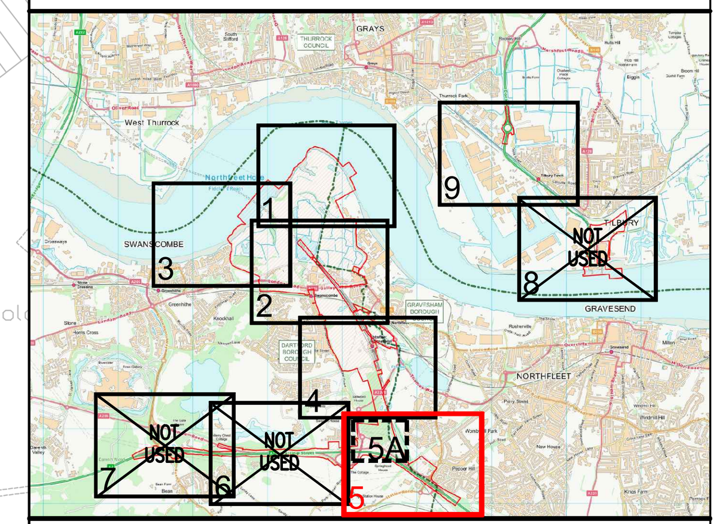


THE LONDON RESORT



KEY:

- ORDER LIMITS
- LOCAL AUTHORITY BOUNDARIES
- CUT INDICATOR
- FILL INDICATOR
- KERB
- VERGE/LANDSCAPING
- RETAINING STRUCTURE
- INDICATES A RESIDUAL RISK AS A WARNING.
- PROPOSED HIGHWAYS ENGLAND SCHEME
- PROPOSED HIGHWAYS ENGLAND SCHEME TO BE REMOVED

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Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement
DARTFORD BOROUGH COUNCIL AND GRAVESHAM BOROUGH COUNCIL

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Application Number
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Drawing Reference
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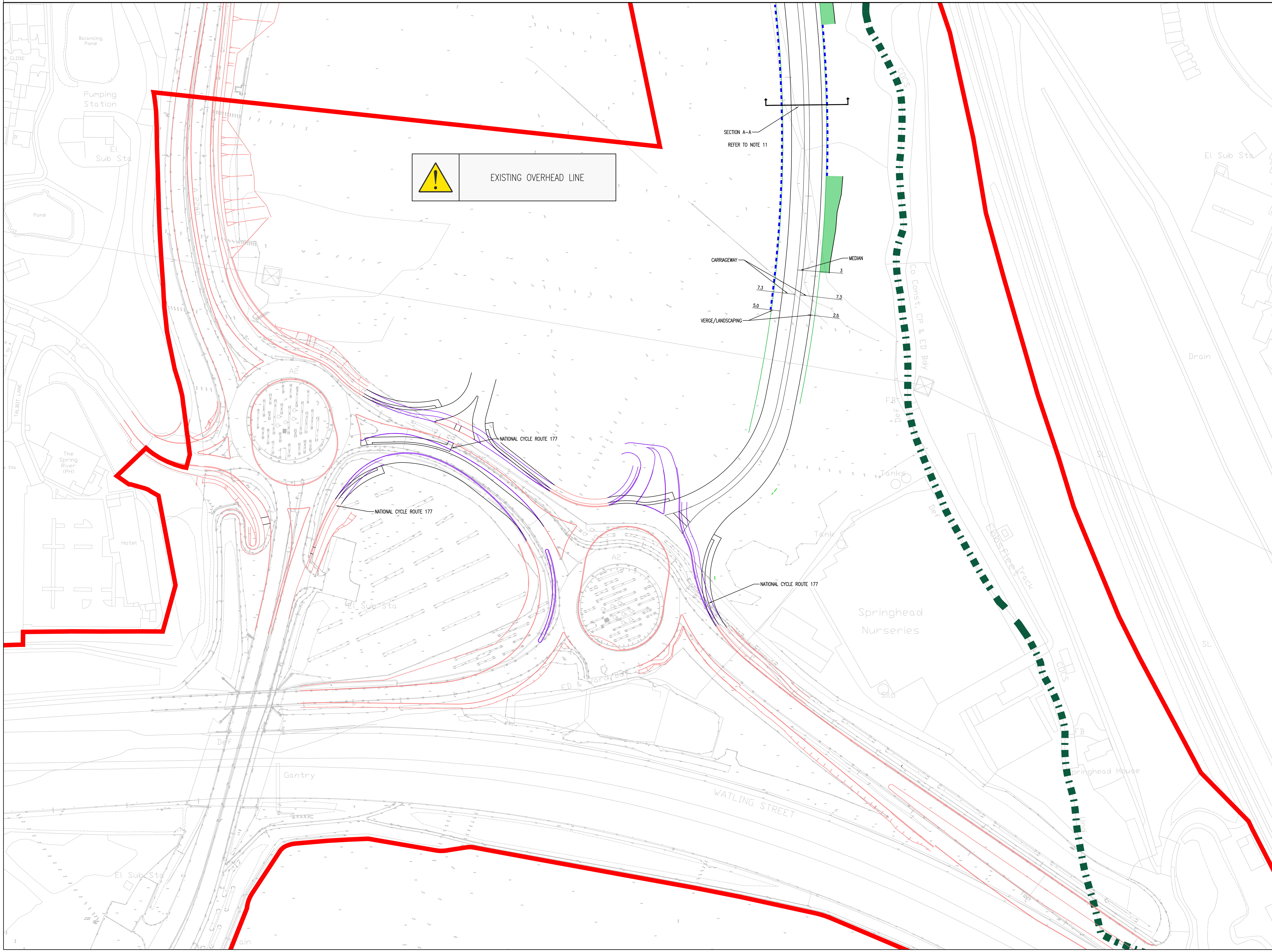

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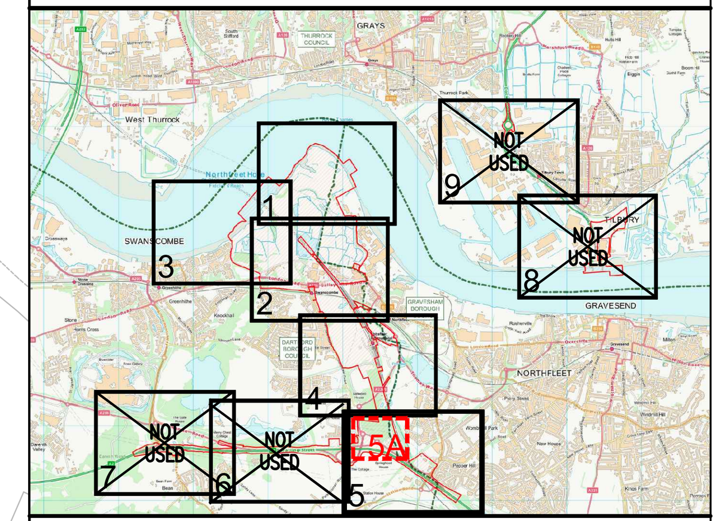

KEY:

- ORDER LIMITS
- LOCAL AUTHORITY BOUNDARIES
- FILL INDICATOR
- KERB
- VERGE/LANDSCAPING
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Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement
DARTFORD BOROUGH COUNCIL AND GRAVESHAM BOROUGH COUNCIL

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Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement
DARTFORD BOROUGH COUNCIL
Sheet 6 of 9

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1:2500
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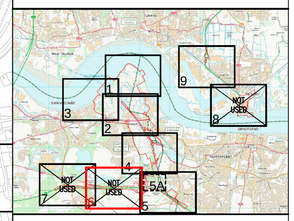
EBBSFLEET VALLEY

DARTFORD BOROUGH COUNCIL

FOR CONTINUATION SEE SHEET 4

FOR CONTINUATION SEE SHEET 7

FOR CONTINUATION SEE SHEET 5



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Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement

DARTFORD BOROUGH COUNCIL

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BC080001

Drawing Reference
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THE LONDON RESORT DEVELOPMENT CONSENT ORDER
Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement
DARTFORD BOROUGH COUNCIL
Sheet 7 of 9

ILLUSTRATIVE

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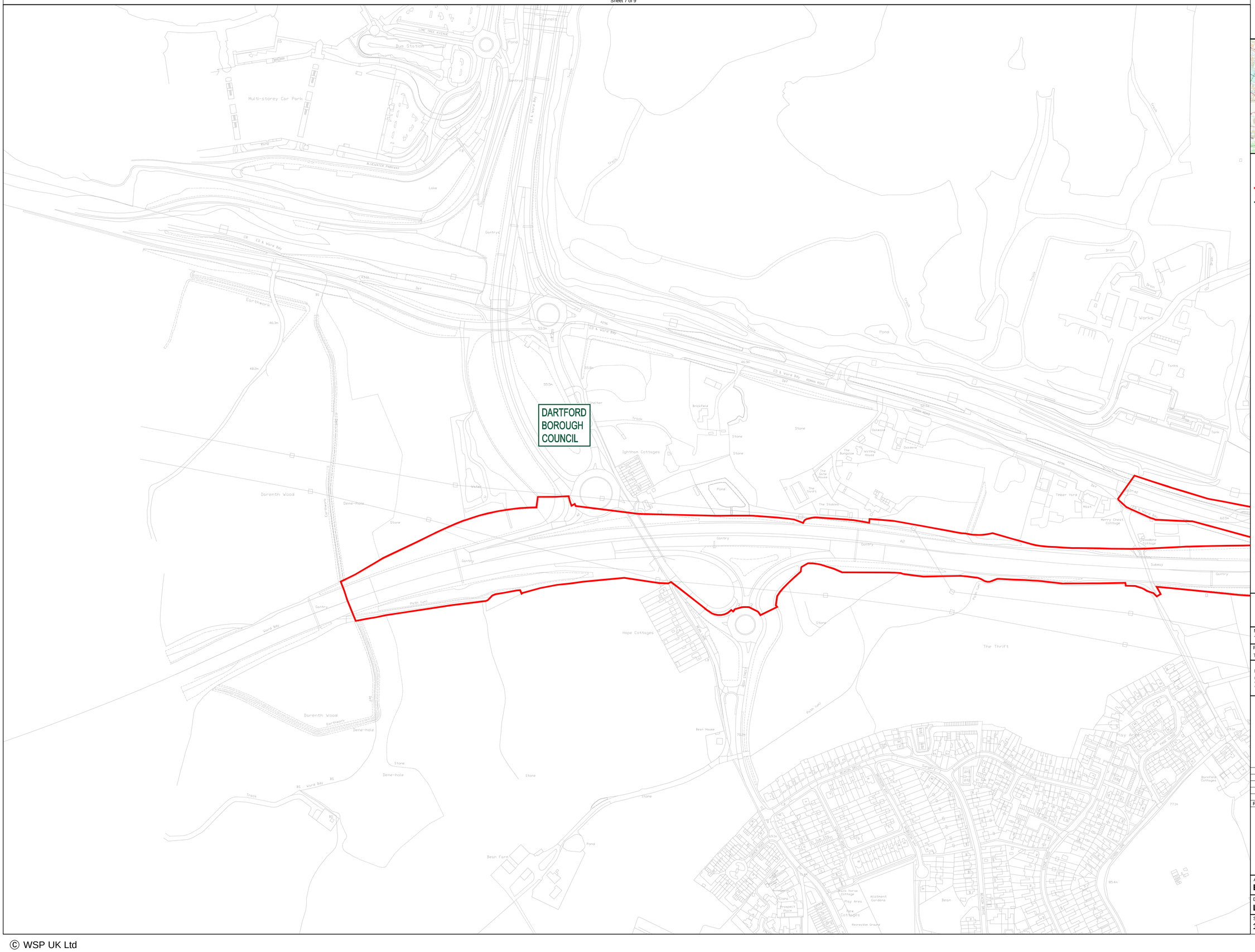

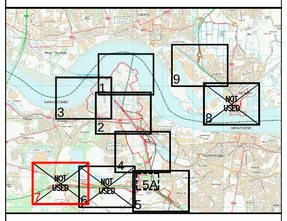

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Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement
DARTFORD BOROUGH COUNCIL

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Application Number
BC080001

Drawing Reference
LR-PL-WSP-DCP-2.12.7

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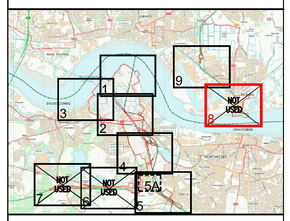
THE LONDON RESORT DEVELOPMENT CONSENT ORDER
Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement
GRAVESHAM BOROUGH COUNCIL AND THURROCK COUNCIL
Sheet 8 of 9

ILLUSTRATIVE

FOR CONTINUATION SEE SHEET 9



KEY:

- ORDER LIMITS
- LOCAL AUTHORITY BOUNDARY
- AREA OUTSIDE ORDER LIMITS

NOTES:

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THURROCK COUNCIL

GRAVESHAM BOROUGH COUNCIL

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Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement

GRAVESHAM BOROUGH COUNCIL AND THURROCK COUNCIL

Sheet 8 of 9

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THE LONDON RESORT DEVELOPMENT CONSENT ORDER
Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement
THURROCK COUNCIL
Sheet 9 of 9

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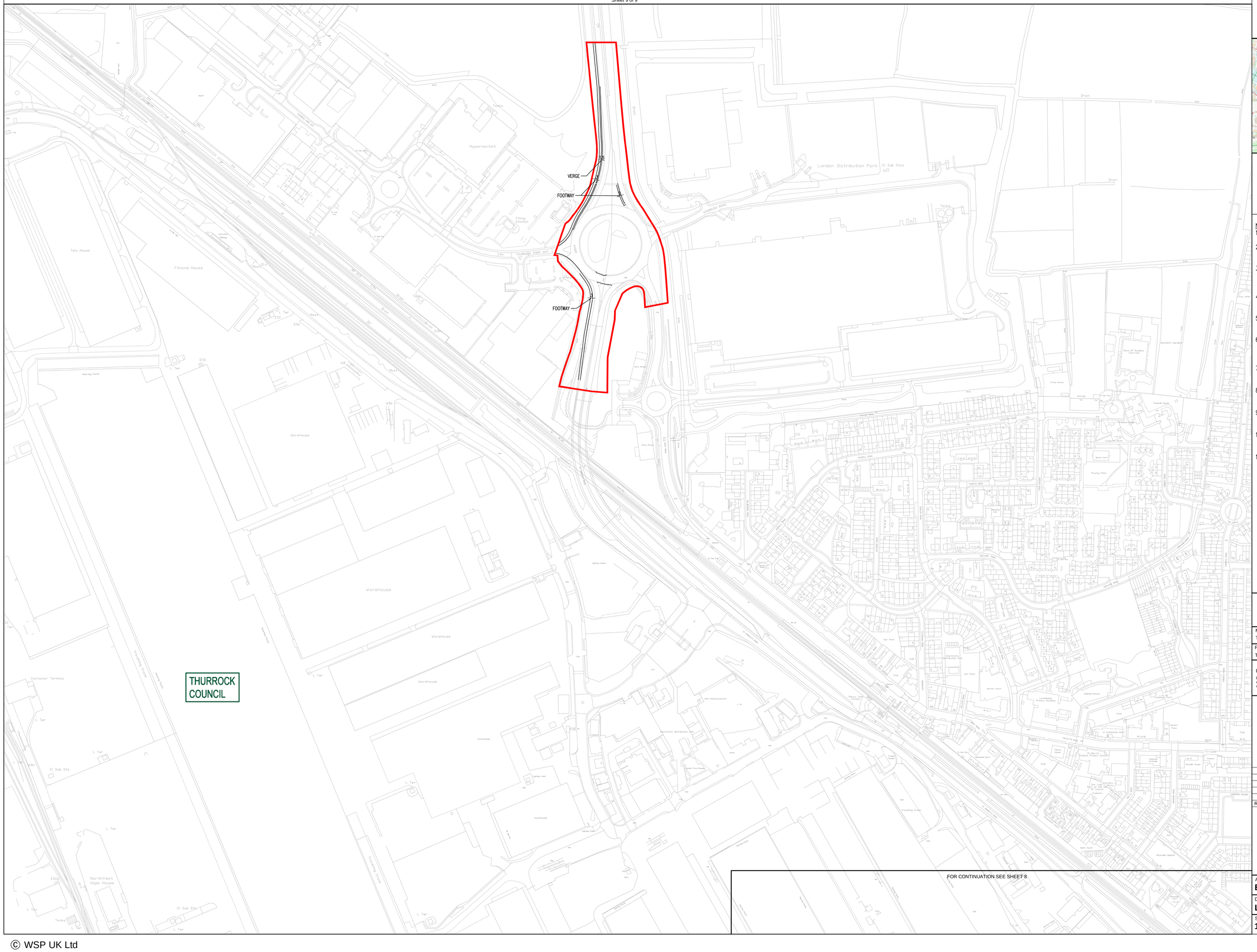

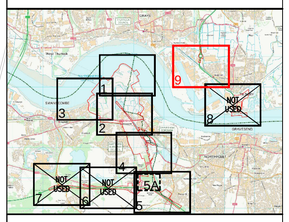

KEY:

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- KERB

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Regulation 5(2)(o), (p) & 6(2) - Highway Plans - General Arrangement
THURROCK COUNCIL

Sheet 9 of 9

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Drawing Reference		
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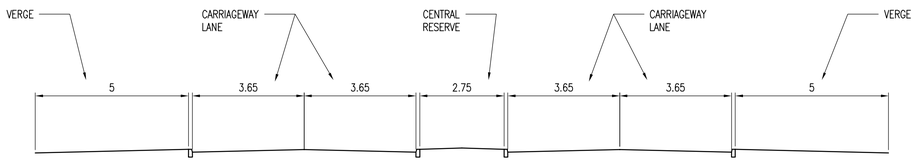
SECTION A–A
TYPICAL SPINE ROAD SECTION
SCALE 1:200



SECTION B–B

TYPICAL INTERNATIONAL WAY SECTION – NEAR CAR PARK ACCESS
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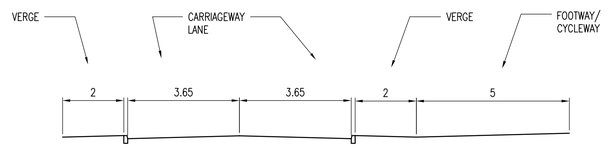

SECTION C–C

TYPICAL INTERNATIONAL WAY SECTION – APPROACH TO ROUNDABOUT
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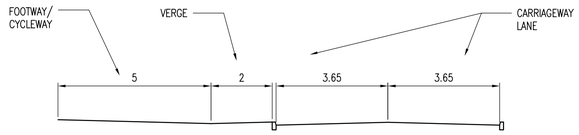

SECTION D–D

TYPICAL SPINE ROAD SECTION – NO CENTRAL RESERVATION
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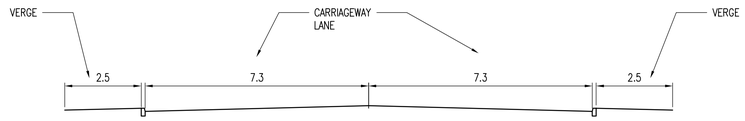
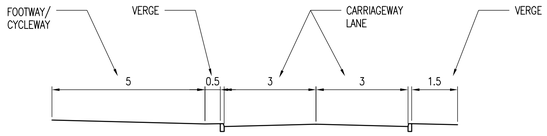


SECTION E–E

TYPICAL PEOPLE MOVER ROUTE SECTION
SCALE 1:200



SECTION F–F

TYPICAL SPINE ROAD SECTION ON APPROACH TO SECURITY ROUNDABOUTS
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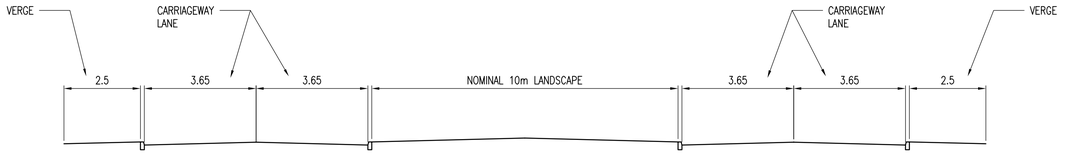

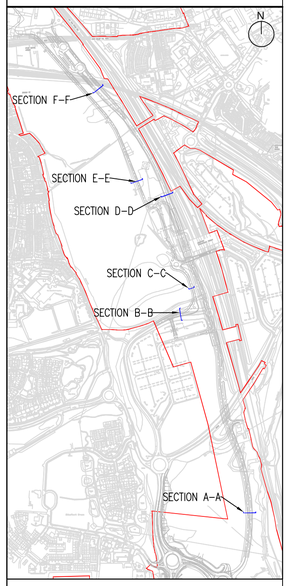

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Regulation 5(2)(o), (p) & 6(2) - Highway Plans - Typical Sections

DARTFORD BOROUGH COUNCIL AND GRAVESHAM BOROUGH COUNCIL

Sheet 1 of 1

Application Number
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THE LONDON RESORT DEVELOPMENT CONSENT ORDER

Regulation 5(4) - Key Plan to Sections

DARTFORD BOROUGH COUNCIL, GRAVESHAM BOROUGH COUNCIL AND THURROCK COUNCIL

Sheet 1 of 1

THE LONDON RESORT

SECTION 9

SECTION 6

SECTION 8

SECTION 4

SECTION 7

SECTION 3

SECTION 5

SECTION 2

SECTION 1

KEY:

- ORDER LIMITS
- LOCAL AUTHORITY BOUNDARY
- AREA OUTSIDE ORDER LIMITS

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Regulation 5(4) - Key Plan to Sections

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Sheet 1 of 1

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THE LONDON RESORT DEVELOPMENT CONSENT ORDER
Regulation 5(2)(o), (p) & 6(2) - Highway Plans - Sections
DARTFORD BOROUGH COUNCIL AND GRAVESHAM BOROUGH COUNCIL
Sheet 1 of 2

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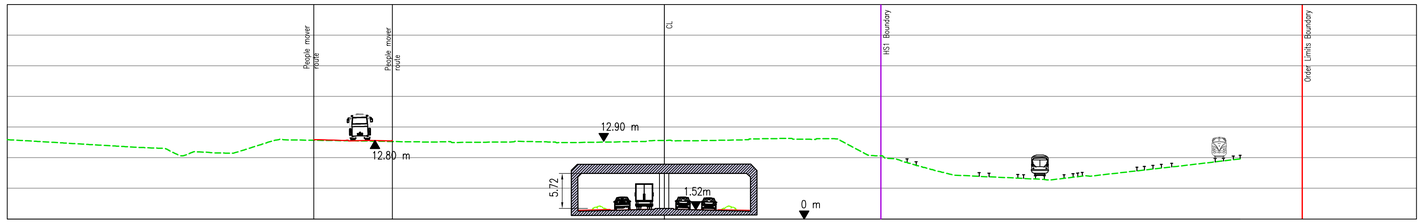
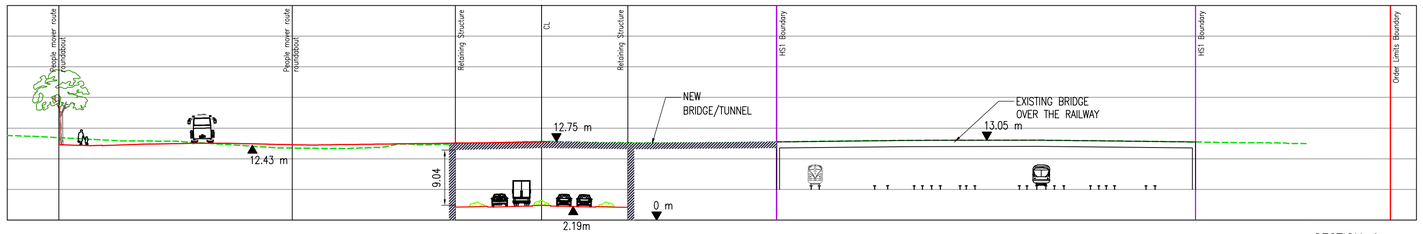


SECTION 5



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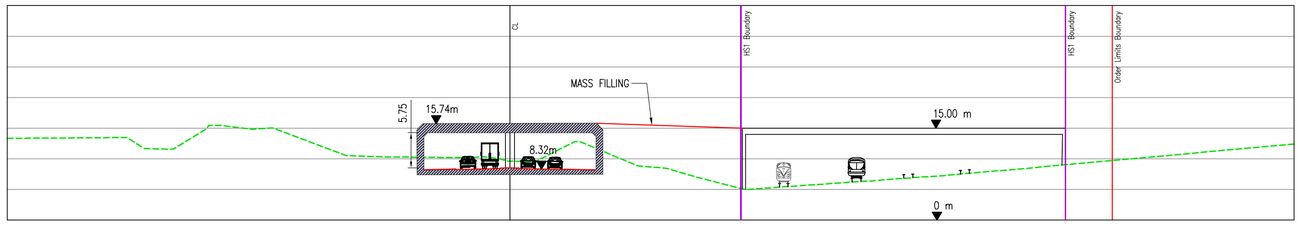

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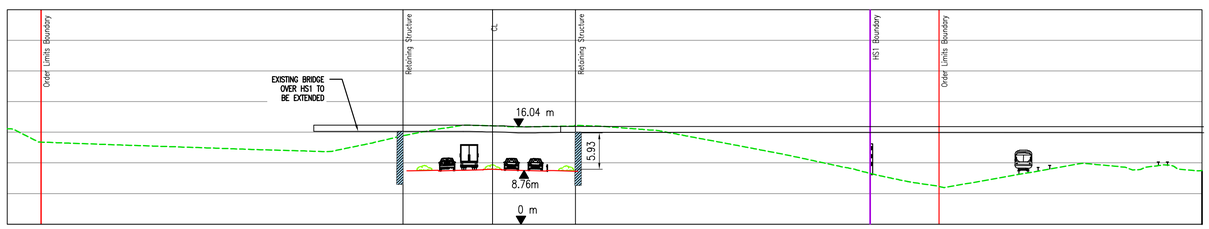
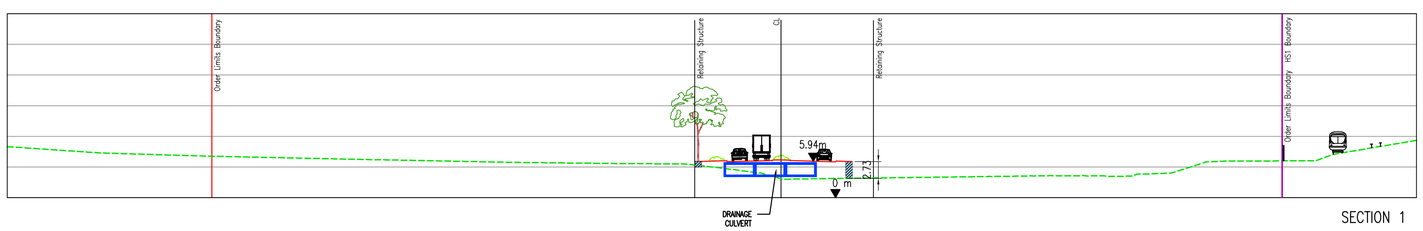


SECTION 2



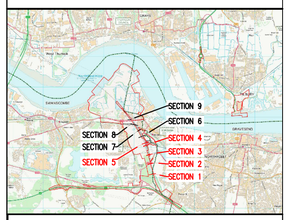
SECTION 1

NOTE:

1. EXISTING GROUND PROFILE EXTRACTED FROM DIGITAL MODEL BASED ON LIDAR DATA. ALL LEVELS TO BE CONFIRMED ON SITE, AND SIGNIFICANT VARIATIONS REPORTED TO THE CONSTRUCTION MANAGER.

2. ALL THE LEVELS ARE SUBJECT TO DETAIL DESIGN.

THE LONDON RESORT



KEY

- ORDER LIMITS
- HS1 BOUNDARY
- EXISTING GROUND PROFILE
- PROPOSED GROUND PROFILE
- TRAIN TRACK
- EXISTING STRUCTURE
- PROPOSED STRUCTURE
- PROPOSED TUNNEL
- DRAINAGE CULVERT

NOTES:

1. ALL DIMENSIONS ARE IN METRES, UNLESS OTHERWISE STATED.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SCHEME DRAWINGS AND SPECIFICATIONS.
3. THIS DRAWING IS SCALED AT PAPER SIZE A1, THEREFORE ANY PRINTS TAKEN AT SMALLER SIZES WILL AFFECT ACCURACY OF THE MEASUREMENT UNITS AND SHOULD NOT BE SCALED AGAINST.
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5. FOR SECTIONS LOCATION PLAN REFER TO KEY PLAN TO SECTIONS (2.12), DRAWING LR-KP-WSP-DCP-2.12.11

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Project	Project No.
The London Resort	70063529

Rev	Reason for Issue	Date	Drw | Chk
0	ISSUE FOR DCO SUBMISSION	24/12/20	WSP | TS-S

THE LONDON RESORT DEVELOPMENT CONSENT ORDER

Regulation 5(2)(o), (p) & 6(2) - Highway Plans - Sections

DARTFORD BOROUGH COUNCIL AND GRAVESHAM BOROUGH COUNCIL

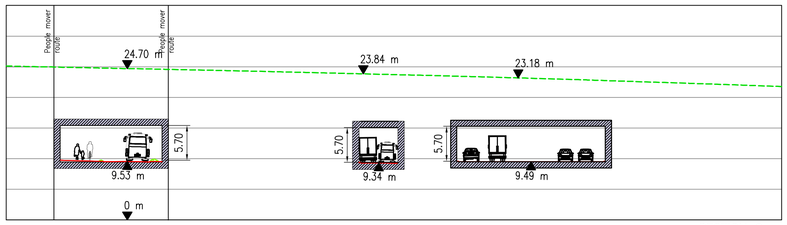
Sheet 1 of 2

Application Number		
BC080001		
Drawing Reference		
LR-PL-WSP-DCP-2.12.12		
Scale	Sheet:	Revision
1:500 @ A1	**1 of 2**	**0**

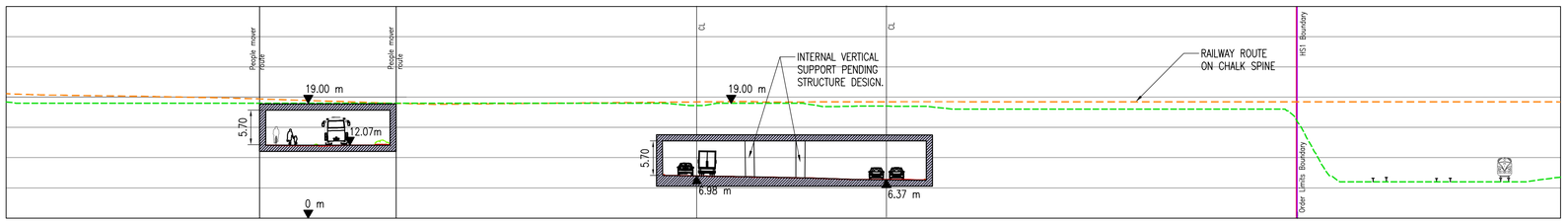
ILLUSTRATIVE

N

1:2500
0 20K 50K 100K



SECTION 9



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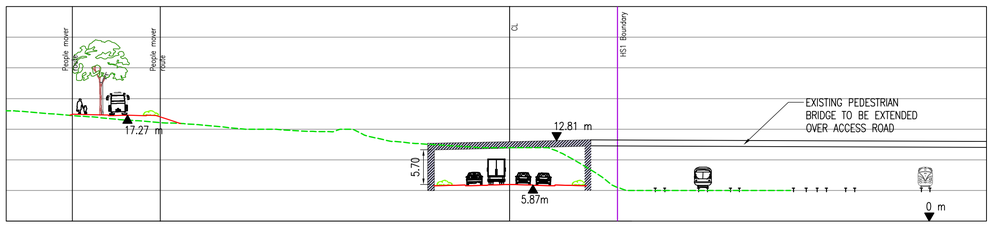

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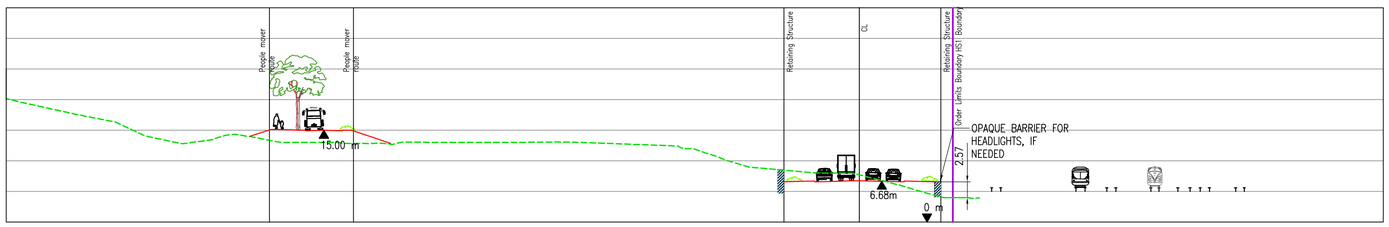
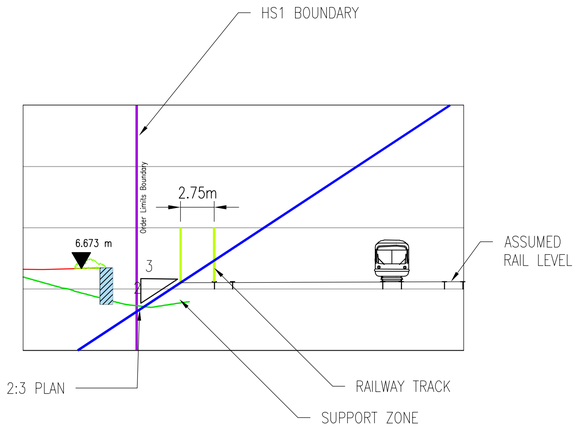


SECTION 6

NOTE:

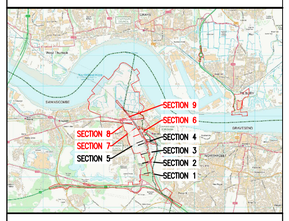
1. EXISTING GROUND PROFILE EXTRACTED FROM DIGITAL MODEL BASED ON LIDAR DATA. ALL LEVELS TO BE CONFIRMED ON SITE, AND SIGNIFICANT VARIATIONS REPORTED TO THE CONSTRUCTION MANAGER.

2. ALL THE LEVELS ARE SUBJECT TO DETAIL DESIGN.



TRACK SUPPORT ZONE
SCALE 1:25

THE LONDON RESORT



KEY

- ORDER LIMITS
- HS1 BOUNDARY
- EXISTING GROUND PROFILE
- PROPOSED GROUND PROFILE
- TRAIN TRACK
- EXISTING STRUCTURE
- PROPOSED STRUCTURE
- PROPOSED TUNNEL
- DRAINAGE CULVERT

NOTES:

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Project	Project No.
The London Resort	70063529

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Rev	Reason for Issue	Date	Drw | Chk
0	ISSUE FOR DCO SUBMISSION	24/12/20	WSP | TS-S

THE LONDON RESORT DEVELOPMENT CONSENT ORDER
Regulation 5(2)(o), (p) & 6(2) - Highway Plans - Sections
DARTFORD BOROUGH COUNCIL AND GRAVESHAM BOROUGH COUNCIL
Sheet 2 of 2

Application Number	
BC080001	
Drawing Reference	
LR-PL-WSP-DCP-2.12.13	
Scale: **1:500 @ A1**	Sheet: **2 of 2** Revision: **0**

Appendix B

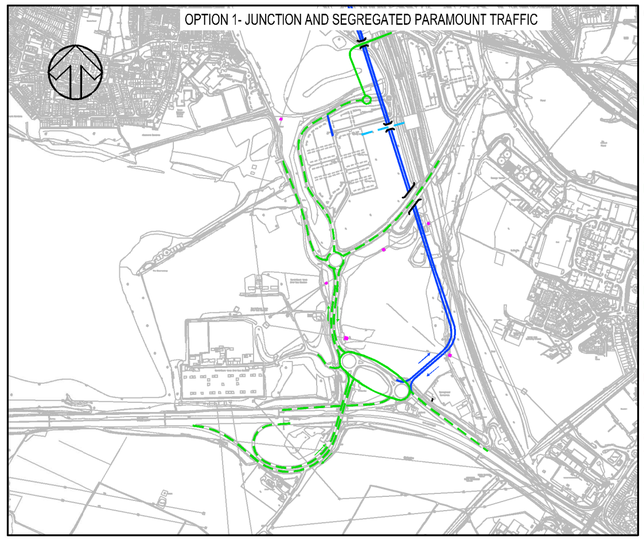
ACCESS ROAD OPTIONS

DO NOT SCALE

NOTE:

1. THIS CONCEPT DRAWING IS PRODUCED WITHIN THE SCOPE OF OUR CLIENT BRIEF. UNDER THE CDM REGULATIONS, BASED ON THE INFORMATION AVAILABLE TO THE DESIGNER AT THE DATE BELOW, NO RESIDUAL RISKS HAVE BEEN IDENTIFIED. SHOULD THIS CONCEPT DRAWING ADVANCE TO THE PRELIMINARY DESIGN STAGE, THE DESIGNER WILL BE RESPONSIBLE FOR ENSURING THAT ADEQUATE INFORMATION IS AQUIRED TO UNDERTAKE A MORE THOROUGH ASSESSMENT IN ACCORDANCE WITH THE REGULATIONS.

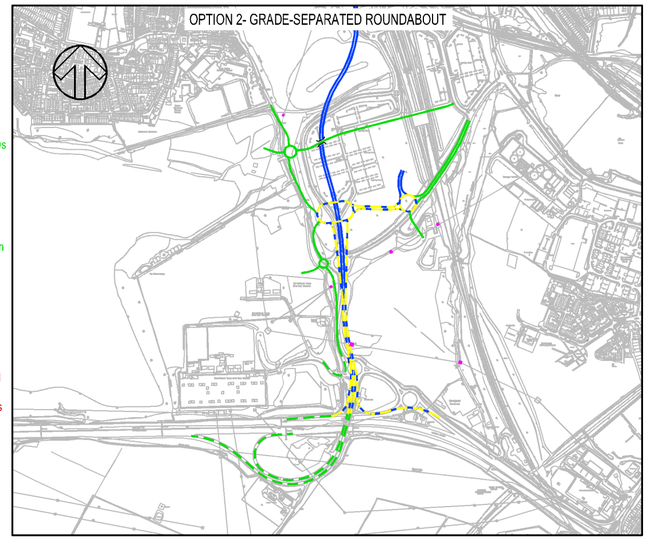
2. DRAWING TO BE READ IN CONJUNCTION WITH DOCUMENT 70063529-DE-TN01 "ACCESS ROAD DESIGN NOTE"



OPTION 1

+ Uses existing infrastructure for local traffic
+ Does not require the moving or replacement of any pylons south of Ebbsfleet Station
+ Minimal build on landfill, reducing environmental and cost implications
+ Segregated Resort/ local traffic allows improved capacity for both
+ Limited impact upon Ebbsfleet International overflow car park
+ Provides additional capacity to already constrained roundabouts
+ Allows greater infrastructure improvement for new Ebbsfleet Garden City
+ Removes potential for severance at Ebbsfleet Garden City with access located along eastern edge of corridor

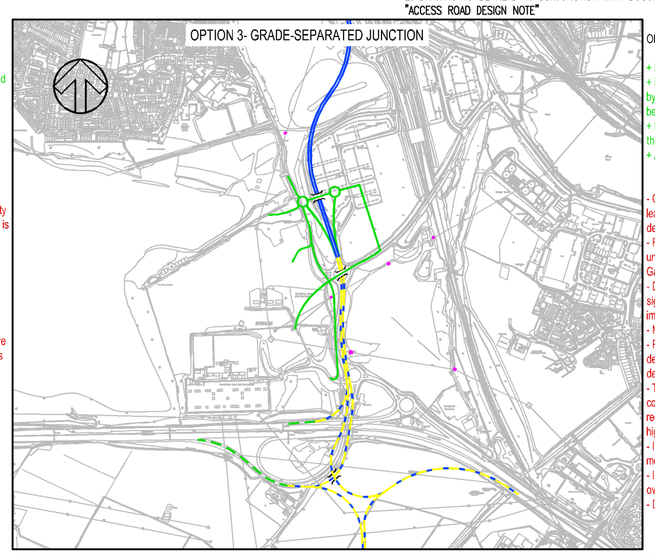
- Requires third-party land
- New access road from A2 requires large bridge structures with associated costs
- Affects SSSI and ancient monuments
- Bridges required along corridor, with associated cost implications
- Requires departures from standard



OPTION 2

+ Provides additional capacity at the A2 by removing existing junctions and becoming free flow
+ No need for new merge / diverge from the A2
+ All traffic along single corridor

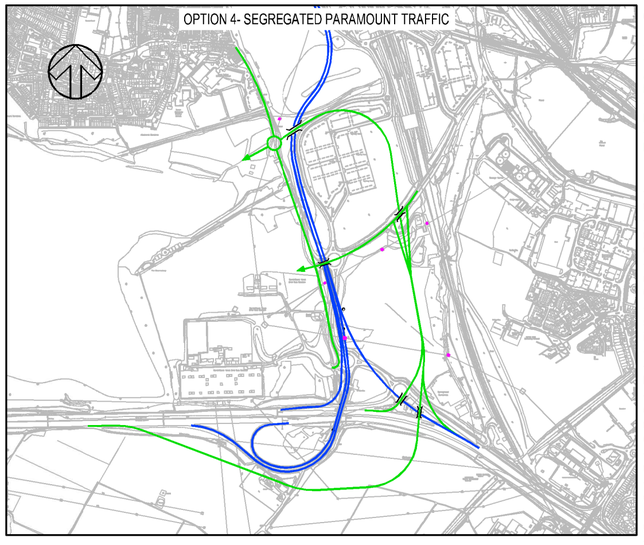
- Combining Resort and local traffic may lead to congestion following development of Ebbsfleet Garden City
- Reliant on single roundabout which is unlikely to accommodate Ebbsfleet Garden City alongside resort traffic.
- Electricity pylons will require relocation
- Dual carriageway through landfill - significant costs and environmental implications
- Minimal use of existing infrastructure
- Potential departures form standards
- Poor access to new residential developments and any future IKEA development
- Topography on western side of corridor - increase cost and potential requirement to relocate or close existing highway
- Impact upon SSSI and ancient monuments
Impact upon existing Ebbsfleet overflow car park.
- Departures from standards



OPTION 3

+ No requirement to relocate pylons
+ Provides additional capacity at the A2 by removing existing junctions and becoming free flow
+ No need for new merge / diverge from the A2
+ All traffic along single corridor

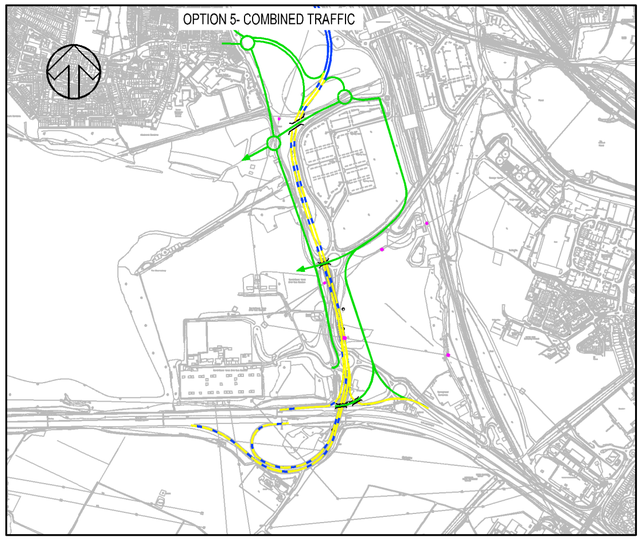
- Combining Resort and local traffic may lead to congestion following development of Ebbsfleet Garden City
- Reliant on single junction which is unlikely to accommodate Ebbsfleet Garden City alongside resort traffic.
- Dual carriageway through landfill - significant costs and environmental implications
- Minimal use of existing infrastructure
- Poor access to new residential developments and any future IKEA development
- Topography on western side of corridor - increase cost and potential requirement to relocate or close existing highway
- Impact upon SSSI and ancient monuments
- Impact upon existing Ebbsfleet overflow car park.
- Departures from standards



OPTION 4

+ Segregates resort and local traffic
+ Provides additional capacity at the A2 by removing existing junctions and becoming free flow
+ Ability to accommodate additional Ebbsfleet Garden City traffic
+ Limited impact upon Ebbsfleet International overflow car park

- Electricity pylons will require relocation
- Combining Resort and local traffic may lead to congestion following development of Ebbsfleet Garden City
- Reliant on single junction which is unlikely to accommodate Ebbsfleet Garden City alongside resort traffic.
- Dual carriageway through landfill - significant costs and environmental implications
- Minimal use of existing infrastructure
- Limited development space for future Ebbsfleet Garden City development
- Topography on western side of corridor - increase cost and potential requirement to relocate or close existing highway
- Impact upon SSSI and ancient monuments
- Impact upon existing Ebbsfleet overflow car park.
- Increase cost of new roads both sides of corridor
- Potential departures from standard



OPTION 5

+ Allows for some segregation of Resort and local traffic
+ Provides additional capacity at the A2 by removing existing junctions and becoming free flow
+ Limited impact upon existing Ebbsfleet station parking
+ No new junctions on the A2

- Electrcity pylons will require relocation
- Combining Resort and local traffic may lead to congestion following development of Ebbsfleet Garden City
- Restricts access into Ebbsfleet station car park
- Reliant on single off-slip which is unlikely to accommodate Ebbsfleet Garden City alongside resort traffic.
- Significant substandard distant between successive merge / diverge - departures from standards
- Dual carriageway through landfill - significant costs and environmental implications
- Minimal use of existing infrastructure
- Limited development space for future Ebbsfleet Garden City development
- Topography on western side of corridor - increase cost and potential requirement to relocate or close existing highway
- Impact upon SSSI and ancient monuments

REV	DATE	BY	DESCRIPTION	CHK	APP
A	16/12/2020	CJF	FIRST ISSUE	SD	SD

DRAWING STATUS:
S2 - FOR INFORMATION

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CLIENT:
THE LONDON RESORT

ARCHITECT:
APT

PROJECT:
THE LONDON RESORT

TITLE:
ACCESS ROAD OPTIONS

SCALE @ A2:	CHECKED:		APPROVED:
#######	SD		SD
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70063529	OJF	OJF	December 20

DRAWING No: 3529-DI-SK-118
REV: A

File name: \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70063500\XX\70063529 - LONDON PARAMOUNT RESORT\03 WIP\DE DEVELOPMENT\02 CAD BIM MODELS\AUTOCAD\SK SKETCHES\3529-DI-SK-118.DWG, printed on 18 December 2020 15:09:06, by Faulkner, Oliver

Appendix C

HIGHWAYS ENGLAND A2 JUNCTION

DO NOT SCALE

Millimetres 0 10 100

FOR CONTINUATION REFER TO SHEET 16

FOR CONTINUATION REFER TO SHEET 7

FOR CONTINUATION REFER TO SHEET 15

FOR CONTINUATION REFER TO SHEET 9

EBBSFLEET GREEN

EBBSFLEET JUNCTION

EBBSFLEET RIVER

SPRINGHEAD NURSERIES

A2260

A2

PROPOSED LIGHTING HAZARD (SEE GENERAL NOTE 3 AND KEY)

NORTHBOUND A2260 WIDENED TO THREE LANES ON EXIT FROM WEST ROUNDABOUT WITH LANE DROP TO TIE INTO EXISTING TWO LANES

PROPOSED RETAINING WALL MAXIMUM RETAINED HEIGHT 7m

SOUTHBOUND A2260 WIDENED TO THREE LANES. TIE-IN TO EXISTING TWO LANES

ENTRY TO EBBSFLEET WEST ROUNDABOUT WIDENED FROM ONE LANE TO TWO LANES

ACKERS DRIVE

PROPOSED RETAINING WALL MAXIMUM HEIGHT 1m

PROPOSED ACCESS TO EBBSFLEET GREEN

EBBSFLEET WEST ROUNDABOUT ENLARGED AND SIGNALISED

ENTRY TO EBBSFLEET WEST ROUNDABOUT WIDENED FROM TWO LANES TO THREE LANES

PROPOSED MAINTENANCE ACCESS TO PYLON (SEE GENERAL NOTE 8)

EXISTING EASEMENT TO DRAINAGE

HS/HGN/01

ENTRY TO EBBSFLEET WEST ROUNDABOUT WIDENED FROM TWO LANES TO THREE LANES

HS/HGT/31/36

LINK ROAD WIDENED TO TWO LANE DUAL CARRIAGEWAY

ENTRY TO EBBSFLEET EAST ROUNDABOUT WIDENED FROM TWO LANES TO THREE LANES

PROPOSED MAINTENANCE ACCESS TO PYLON (SEE GENERAL NOTE 8)

ACCESS TO PROPOSED STATION QUARTER SOUTH DEVELOPMENT

EBBSFLEET MARSHES LOCAL WILDLIFE SITES

EBBSFLEET EAST ROUNDABOUT ENLARGED AND SIGNALISED

HS/HGT/30

CONSTRUCTION STORAGE COMPOUND AND WELFARE AREA

NON-DESIGNATED ARCHAEOLOGICAL AREA OF SCHEDULABLE QUALITY

COMBINED SLIP ROAD TO A2 AND PEPPERHILL LINK ROAD WIDENED FROM TWO LANES TO THREE LANES

PEPPERHILL LINK ROAD

EBBSFLEET JUNCTION EASTBOUND OFFSLIP

EBBSFLEET JUNCTION EASTBOUND ONSLIP

HS/HGT/20

EXISTING CONFIRMATORY ADS PORTAL GANTRY CH.6631

EXISTING CONFIRMATORY ADS PORTAL GANTRY CH.6649

EXISTING EASTBOUND OFFSLIP UNDERBRIDGE (CX05) RETAINED

EXISTING TAPER DIVERGE TYPE A RETAINED

EXISTING LIGHTING HAZARD (SEE GENERAL NOTE 3 AND KEY)

EXISTING PARALLEL DIVERGE TYPE B (OPTION 2 NON PREFERRED) - PARALLEL DIVERGE RETAINED

EXISTING PARK CORNER UNDERBRIDGE (CX04) RETAINED

CONSTRUCTION STORAGE COMPOUND AND WELFARE AREA

EBBSFLEET JUNCTION WESTBOUND OFFSLIP

HS/HGN/01

EXISTING FINAL ADS PORTAL GANTRY CH.6880

NEW SEGREGATED LEFT TURN LANES WITH PHYSICAL ISLAND

ACCESS TO FORMER PETROL STATION SITE

PROPOSED ACCESS TO EIGP AND DGE LAND

PROPOSED MS4 CANTILEVER GANTRY CH.7146

Scale 1:1000

10m 0m 10m 20m 30m 40m 50m 60m 70m

NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. FOR GENERAL NOTES AND KEY REFER TO DRG. No. HE543917-ATK-HGN-XX-DR-CH-000200.

"THESE DRAWINGS ARE A PRELIMINARY DESIGN FOR USE DURING PCF STAGE 3. THEY SHOW AN INDICATION OF THE PROPOSED LAYOUT BUT DO NOT SHOW FULL CONSTRUCTIONAL DETAILS OR WIDTHS. FURTHER REFINED DETAILED DESIGN WILL BE UNDERTAKEN DURING LATER STAGES OF DEVELOPMENT OF THE SCHEME PRIOR TO CONSTRUCTION. FOR INFORMATION ONLY."

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made to the design hazard log).

Construction

1. HS/HGT/31&36-WORKING ADJACENT TO EXISTING PYLON NEAR A2260.
2. HS/HGN/01-WORKING ADJACENT TO EXISTING OH HV LINES AND PYLONS.
3. HS/HLG/01 & 03-PROPOSED COLUMN IN THE VICINITY OF THE EXISTING OH LINE.
4. HS/HGT/20-CONTAMINATED AREA (DISUSED PETROL STATION).
5. HS/HGT/30-EXISTING JAPANESE KNOTWEED BURIAL SITE AREA.

Maintenance / Cleaning

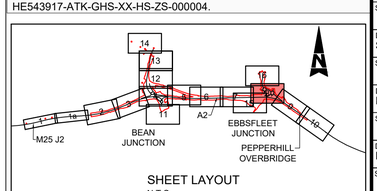
HS/HLG/02-EXISTING COLUMN IN THE VICINITY OF THE EXISTING OH LINE.

Use

REFER TO HEALTH AND SAFETY RISK REGISTER DOCUMENT No. HE543917-ATK-GHS-XX-HS-ZS-000004.

Decommissioning / Demolition

REFER TO HEALTH AND SAFETY RISK REGISTER DOCUMENT No. HE543917-ATK-GHS-XX-HS-ZS-000004.



SHEET LAYOUT
N.T.S

Description	Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
FOR HE REVIEW	B1	C01	RKK	OP	CT	CH	05/07/18
STAGE 3 DESIGN FIX 3	A1	C02	RKK	JA	CT	CH	22/08/18
FOR STAGE 3 SIGN-OFF	A1	C03	RKK	JA	AEM	CH	21/11/18
FOR INFORMATION; EBBSFLEET PYLON ACCESS REVISED ON SHEETS 8 AND 16	A1	C04	RKK	AEM	CH	CH	18/01/19
FOR INFORMATION	A2	C05	RKK	EBB	AEM	RJM	22/02/19

Drawing Suitability: APPROVED - ORDERS / LICENSES

Status: A2

Project Title: A2 Bean and Ebbsfleet Junctions Improvement

Drawing Title: PCF STAGE 3 – PRELIMINARY DESIGN ENGINEERING GENERAL ARRANGEMENT

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Client: Working on behalf of highways england

Drawing Number: Project HE543917 - Originator ATK - Volume HGN - XX - Location - Type DR - Role CH - Number 000208

Original Size: A1 | Scale: 1:1000 | Project Ref No: 5158159 | Sheet: 8 of 16 | Rev: C05

Appendix D

HIGHWAY BRIDGES TECHNICAL DESIGN NOTE

TECHNICAL NOTE 1 – HIGHWAY BRIDGES CONCEPT

70063529-WSP-CBG-TN-0001 Issue P02

DATE:	18 December 2020	**CONFIDENTIALITY:**	Restricted
SUBJECT:	Technical Note		
PROJECT:	London Resort	**AUTHOR:**	Georgios Savvidis
CHECKED:	Georgios Savvidis	**APPROVED:**	Steve Dellow

INTRODUCTION

This short Technical note describes the outline proposals for the structures (bridges and a tunnel) required as part of the proposed London Resort Access road.

PROPOSED A2260 UNDERPASS

Span: 36.71m at 38.8º skew (c/c of supports)
Width: 25.0m
Drawing ref: 3529-WSP-CBG-SK-S2-001

It is currently envisaged that the new A2260 underpass will be constructed either using a large concrete jacked box(es), or traditional single span bridge either constructed in phases (to allow minimum one lane contraflow traffic to operate), or cut-and-cover method under a 48-72hrs road closure.

The jacked box(es) option would minimise disruption to the traffic on the A2260 as jacking operations are generally well controlled, minimising disturbance to the ground and live carriageway.

The phased construction would consist of three main phases.

- Phase 1 – all traffic would be diverted to use the eastbound lane under TM (traffic lights). This would provide sufficient space to undertake the temporary works and construction of the south section of the new underpass. It is envisaged that the southern section will be sufficiently wide to accommodate two lanes of traffic in the next phase (Phase 2).
- Phase 2 – once the south section of the new underpass is complete, traffic would be diverted over the new deck (with temporary wearing course) and the northern section of the new underpass built.
- Phase 3 – lay final wearing course, install street furnishing etc. and remove TM.

The cut-and-cover option would need to take place over a 48-72hr road closure of the A2260, when the earthworks would take place, and the bridge (built in the compound) would be transported into place using a self-propelled modular transporter (SPMT).

This structure for the phased and cut-and-cover options would comprise steel main girders composite with a reinforced concrete deck. The deck would be supported on reinforced concrete abutments, on piled foundations. Due to the high skew (38º), bearings will be required at the abutments to accommodate thermal movement of the deck.

The preferred option will be subject to detailed review of the ground investigation information, topographical survey and costs.

TECHNICAL NOTE 1 – HIGHWAY BRIDGES CONCEPT

70063529-WSP-CBG-TN-0001 Issue P02

DATE:	18 December 2020	**CONFIDENTIALITY:**	Restricted
SUBJECT:	Technical Note		
PROJECT:	London Resort	**AUTHOR:**	Georgios Savvidis
CHECKED:	Georgios Savvidis	**APPROVED:**	Steve Dellow

PROPOSED BRIDGE TO NOWHERE EXTENSION

Span: 28.5m at 0^{o} skew (c/c of supports)
Width: 52.0m
Drawing ref: 3529-WSP-CBG-SK-S3-001

The proposed bridge would be a single span, supported on reinforced concrete abutments on piled foundations. The substructure and foundations would be designed for both the interim (no traffic on topside) and future states (with traffic on topside). In the interim state, there is no backfill behind the abutments so they would need to be designed as free standing; in the future state, substructure would need to resist horizontal earth pressures and traffic surchage forces.

It is envisaged that the deck will be integral with the abutments (no bearings) to reduce maintainace liability associated with bearing replacement and expansion joints. Weathering steel is also proposed for the main girders to eliminate routine maintenance of steelwork, although Principal Inspection of the beams and deck slab will still be required.

PROPOSED EBBSFLEET INTERNATIONAL STATION (EISC) CONCOURSE AND PEOPLE MOVER INTERCHANGE TUNNEL

Span: 22.5m at 0^{o} skew (c/c of supports)
Length: 238.0 m
Drawing ref: 3529-WSP-CBG-SK-S4-001

It is envisaged that the proposed structure supporting the concourse to the west of Ebbsfleet International, and proposed people mover intecrchange, will comprise precast, pretensioned deck beams with reinforced concrete slab, supported on reinforced contiguous pile abutments. The deck will be integral with the contiguous pile abutments. As the structure would exceed the 150m in length, it is categorised as Tunnel in accordance with DMRB CD 352 and would therefore need to include tunnel safety provisions (alarm systems, Fire, lighting, escape, drainage etc.).

This form of construction was chosen to ensure that the existing Ebbsfleet International station structure will not be affected/undermined during construction works of the new road and bridge. Furthermore, a minimum 5m “exclusion zone” between the existing station structure foundations and proposed structure contiguous pile abutments will be maintenained.

The construction methodology is envisaged as follows:

- Drive contiguous piles to form the abutments and approaches.
- Remove fill between the contiguous piled wall in layers. Proping at top level may be required, subject to detailed design.

- Construct concrete rib slab at ground level (below surfacing) which will act as a prop to the contiguous pile walls in the permanents condition. The extent of the concrete rib slab will be determined at detailed design stage.
- Install the prestressed beams. Pour concrete slab and diaphragm to make the deck integral with the contig. Pile abutments. The integral deck, will act as a prop to the contiguous piles at top level.
- Install facing to the contiguous pile wall (shotcrete, or brick faced)
- Install road surfacing and other highways furnishing.

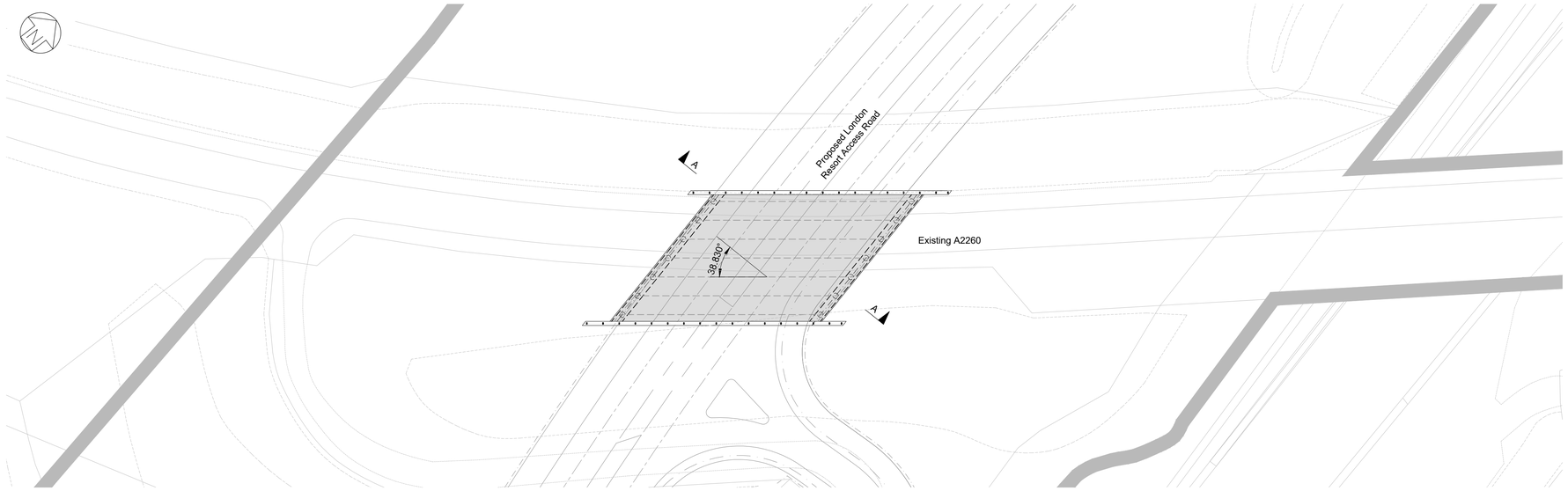
It should be noted that the proposed International Way Bridge West (south of the station) will be of similar construction.

PROPOSED INTERNATIONAL WAY UNDERBRIDGE EXTENSION

Span: 22.5 m at 0^{o} skew (c/c supports)
Width: 13.8m
Drawing ref: 3529-WSP-CBG-SK-S5-001

Similar to the EISC bridge, this structure will comprise precast, pretensioned deck beams with reinforced concrete slab, supported on reinforced contiguous pile abutments. The deck will be integral with the contiguous pile abutments. Utilising the same substructure and superstructure form and materials would reduce overall project costs due to reduced requirement for bespoke fabrication, installation methodologies, and design.

The construction methodology would also be the same as that of the EISC bridge, where it is envisaged that the contiguous pile wall for both structures will be built at the same time. However, it is proposed to provide a gap between the two decks for ownership and maintenance purposes. The gap will be minimum 3.0 m wide to provide access for inspection/maintenance.



PLAN
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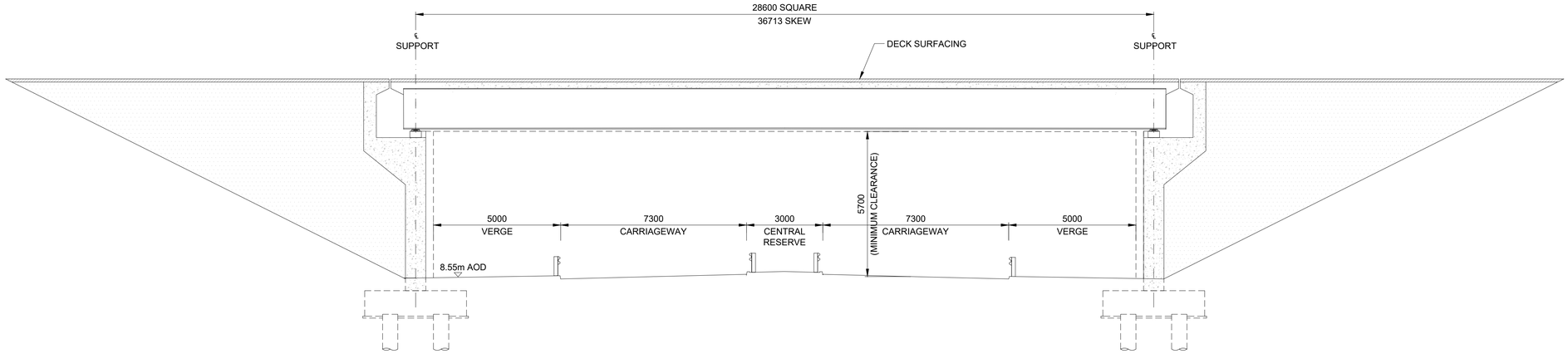

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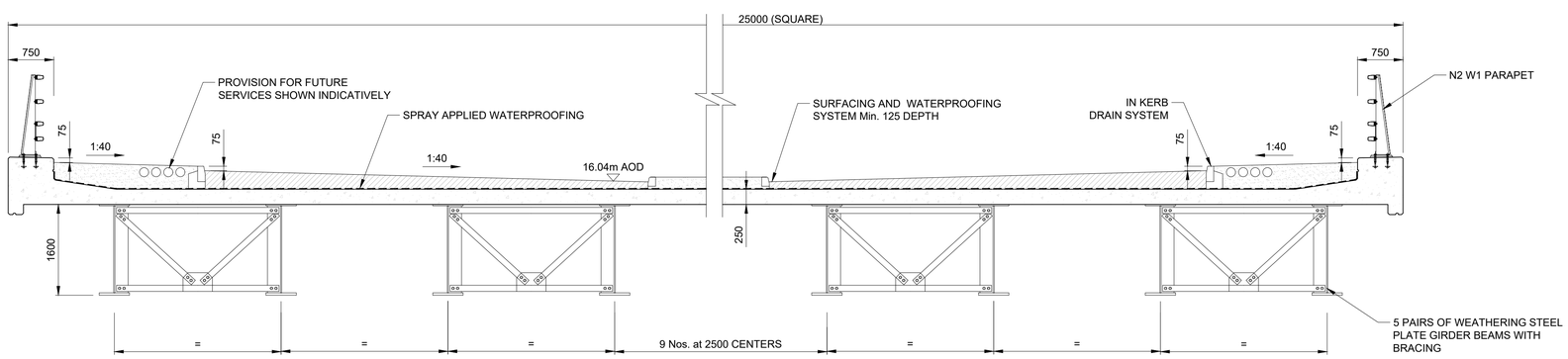

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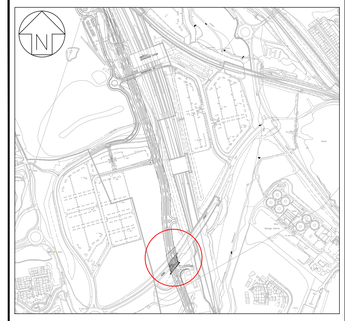

KEY PLAN
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REV	DATE	BY	DESCRIPTION	CHK	APP
P01	03/12/2020	SK	FOR REVIEW	GS	SD

DRAWING STATUS: S0 - WORK IN PROGRESS

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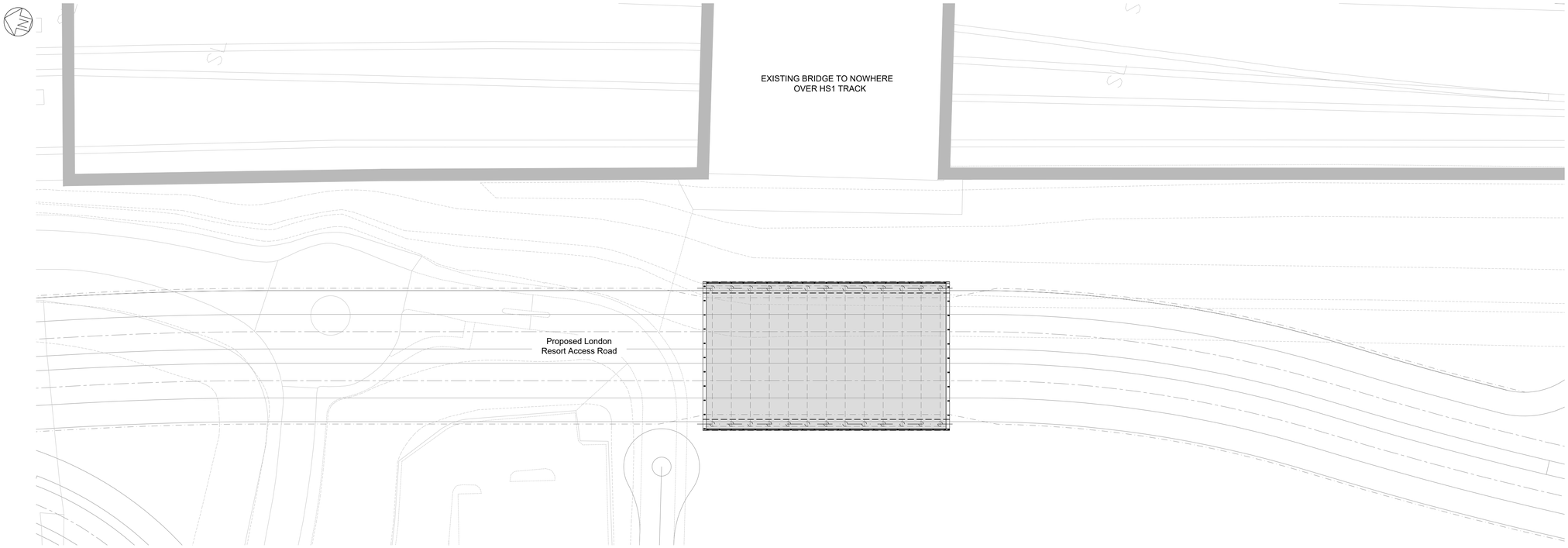
SITE/PROJECT: THE LONDON RESORT

TITLE: PROPOSED A2260 UNDERBRIDGE

SCALE @ A1:	CHECKED:		APPROVED:
As Shown	GS		SD
PROJECT NO: 70063529	DESIGNED: GS	DRAWN: SK	DATE: Dec 20

DRAWING No: 3529-WSP-CBG-SK-S2-001 REV: P01



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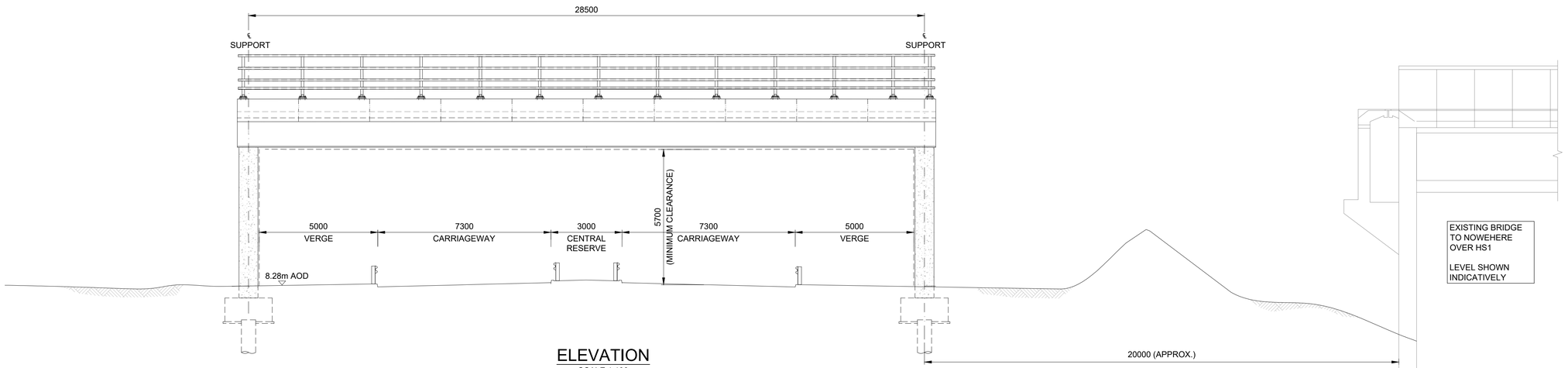

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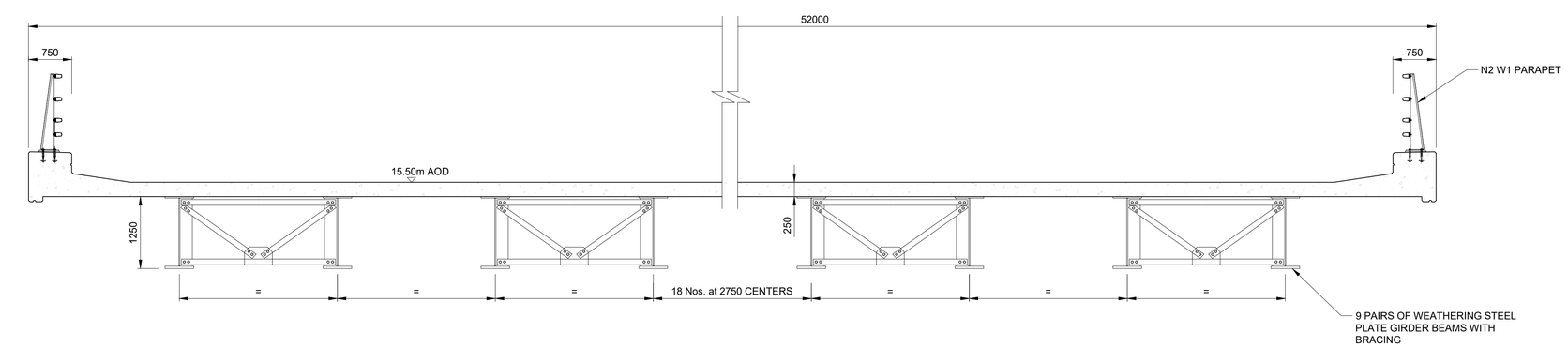

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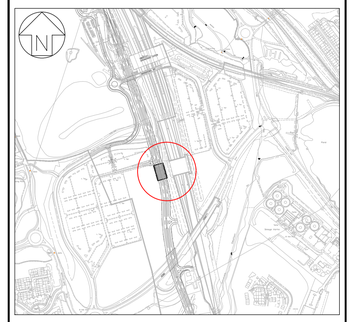

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TITLE: PROPOSED BRIDGE TO NOWHERE EXTENSION

SCALE @ A1:	CHECKED:		APPROVED:
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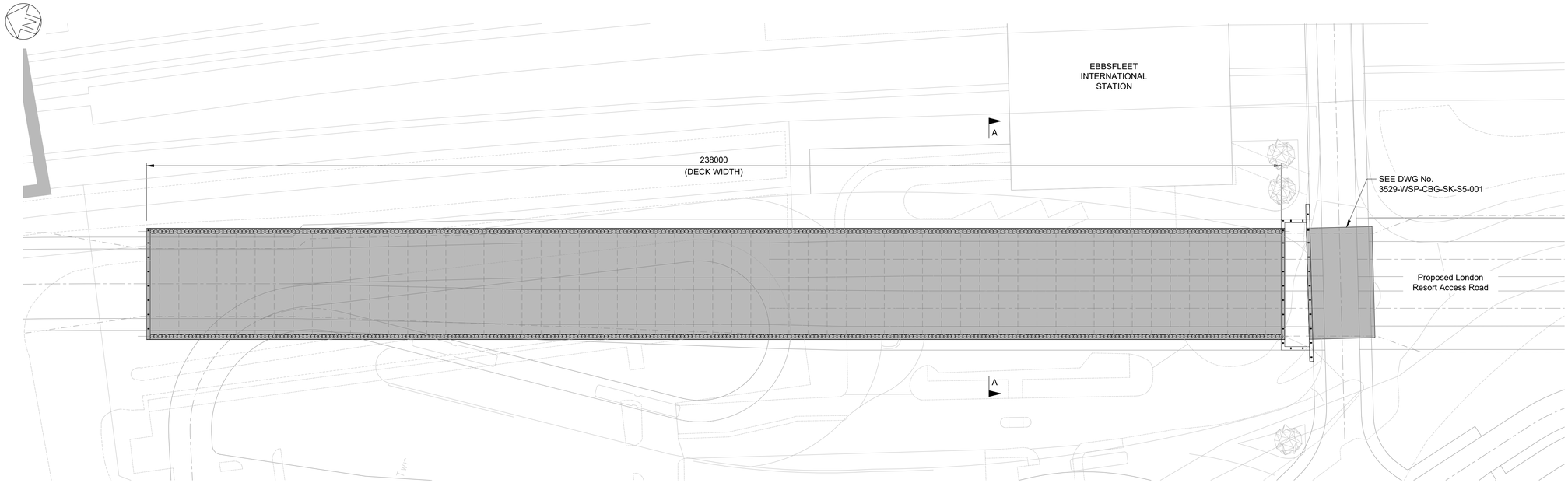
PROJECT NO:	DESIGNED:	DRAWN:	DATE:
70063529	GS	SK	Dec 20

DRAWING No: 3529-WSP-CBG-SK-S3-001 REV: P01



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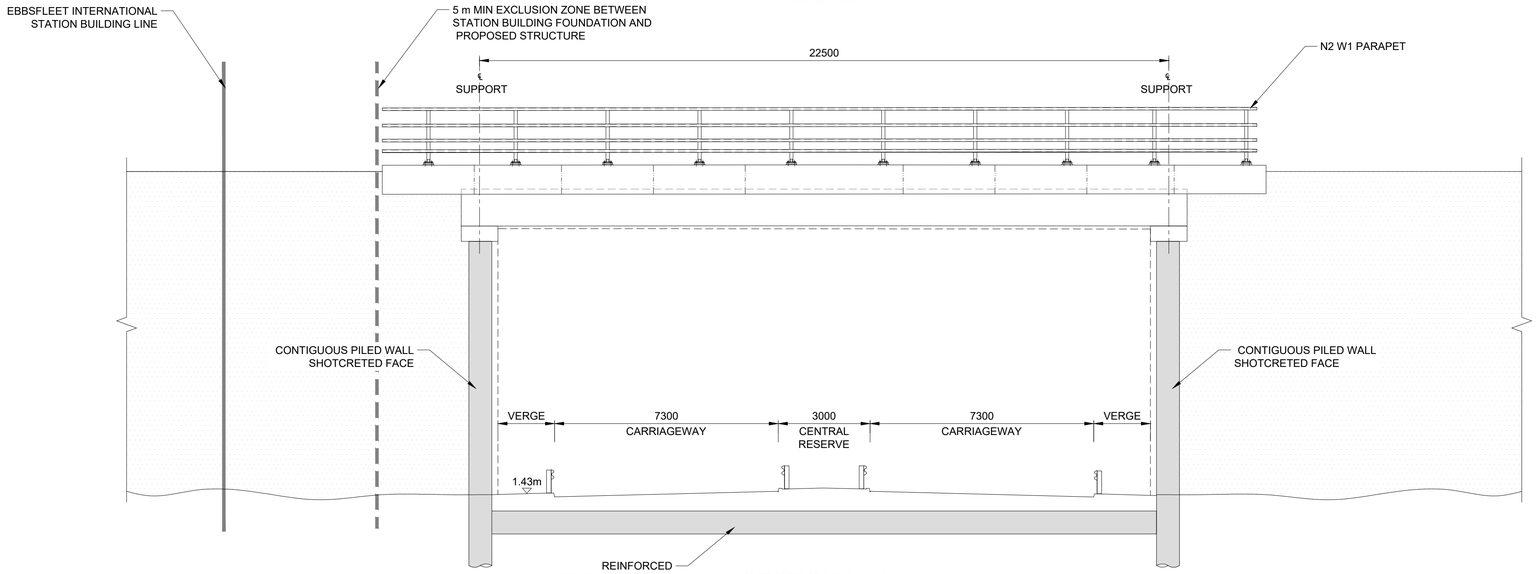

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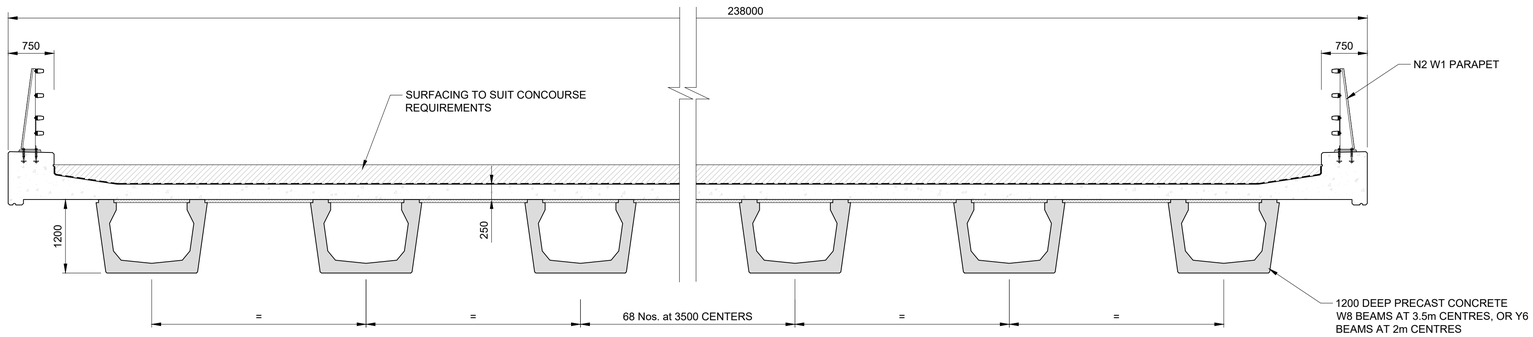

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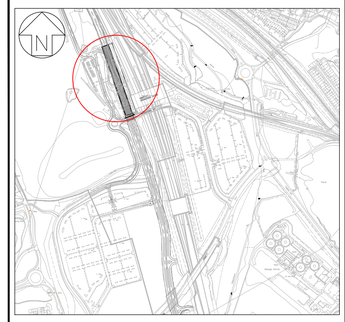

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TITLE: PROPOSED EBBSFLEET INTERNATIONAL STATION CONCOURSE & PEOPLE MOVER INTERCHANGE TUNNEL

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As Shown	GS		SD
PROJECT NO:	DESIGNED:	DRAWN:	DATE:
70063529	GS	SK	Dec 20

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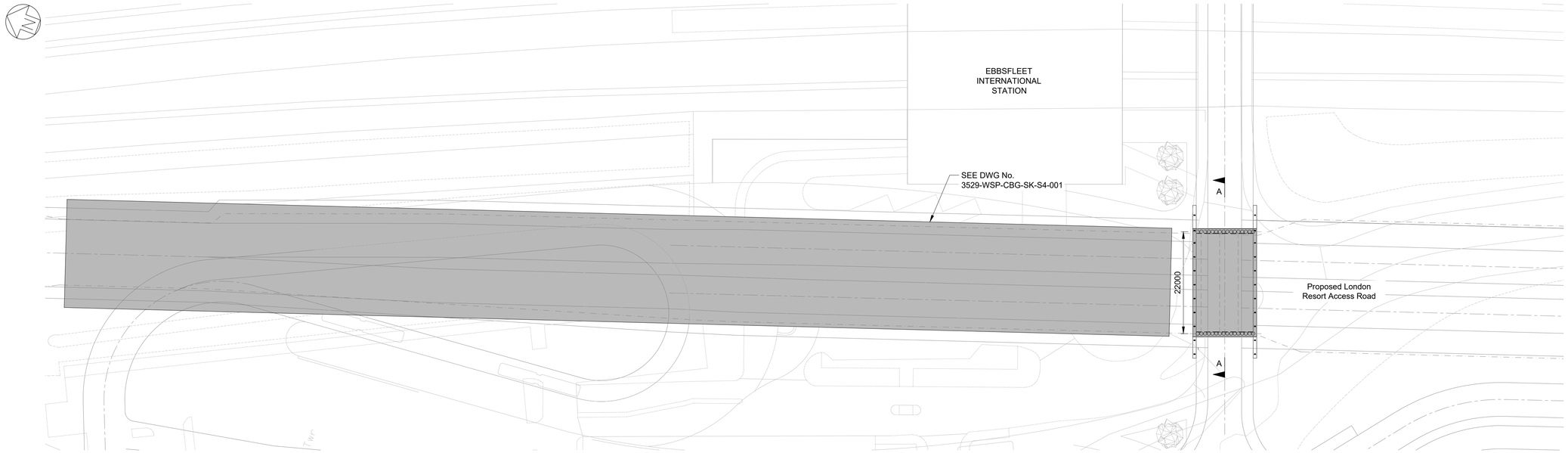

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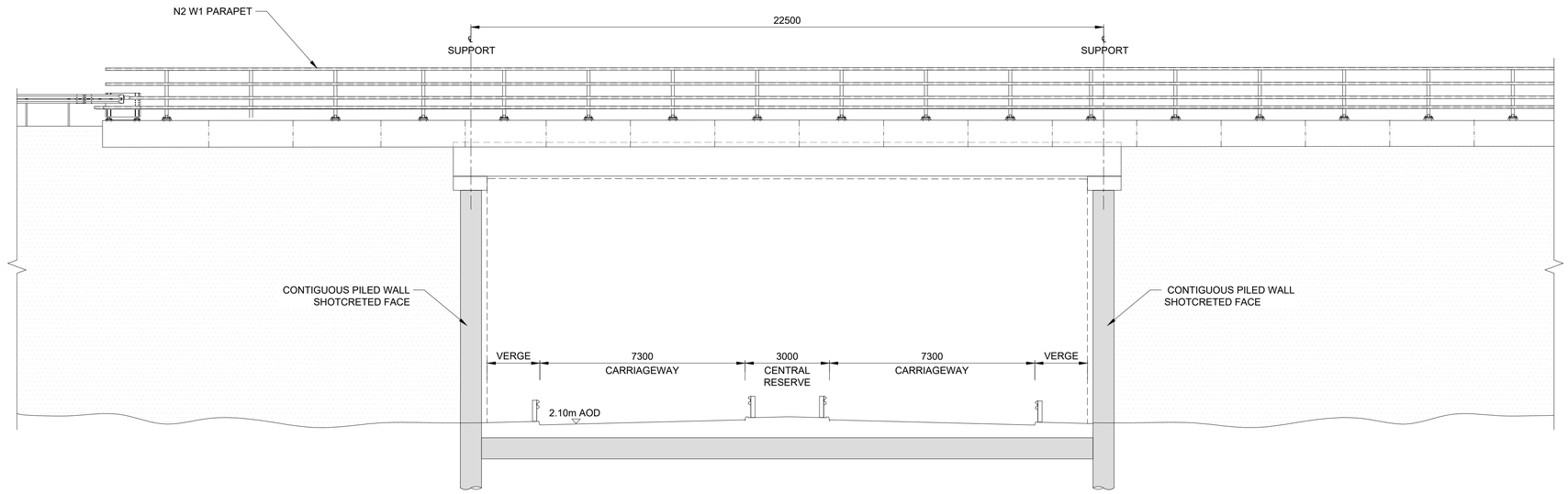

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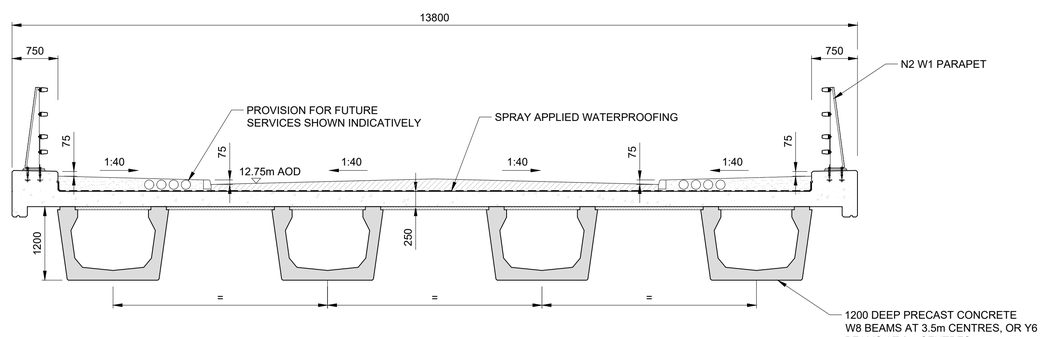

TYPICAL CROSS SECTION
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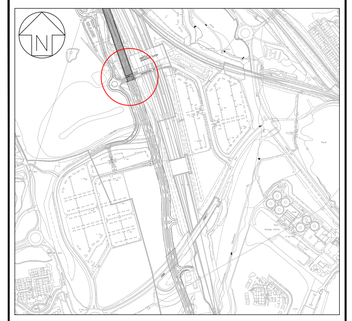

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PROJECT NO:	DESIGNED:	DRAWN:	DATE:
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