



Proposed new passenger station at Glyne Gap, Bexhill

Technical Note - Stage 2: Infrastructure Assessments and Recommendations

March 2013
Rother District Council



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Executive Summary

Rother District Council has appointed Mott MacDonald to assess the feasibility of a new Station at Glyne Gap near Bexhill, East Sussex.

This report outlines the potential infrastructure requirements and cost estimate for such a station with options for basic, intermediate and full facilities.

Key elements for the stations include:

- Platforms of either 4 or 8 car lengths;
- Access routes;
- Waiting shelters;
- Lighting and security;
- Ticket machines and passenger information systems; and
- Station building and car park for full facilities only.

The existing gradient of the track of 1 in 264 is greater than the current requirements for a maximum of 1 in 500, therefore a derogation would be required.

Cost estimates for the three levels of station are approximately:

- Basic - £3.4m;
- Intermediate - £4.7m; and
- Full - £6.6m.

In all cases inclusive of contingency and 50% optimum bias.

Abbreviations

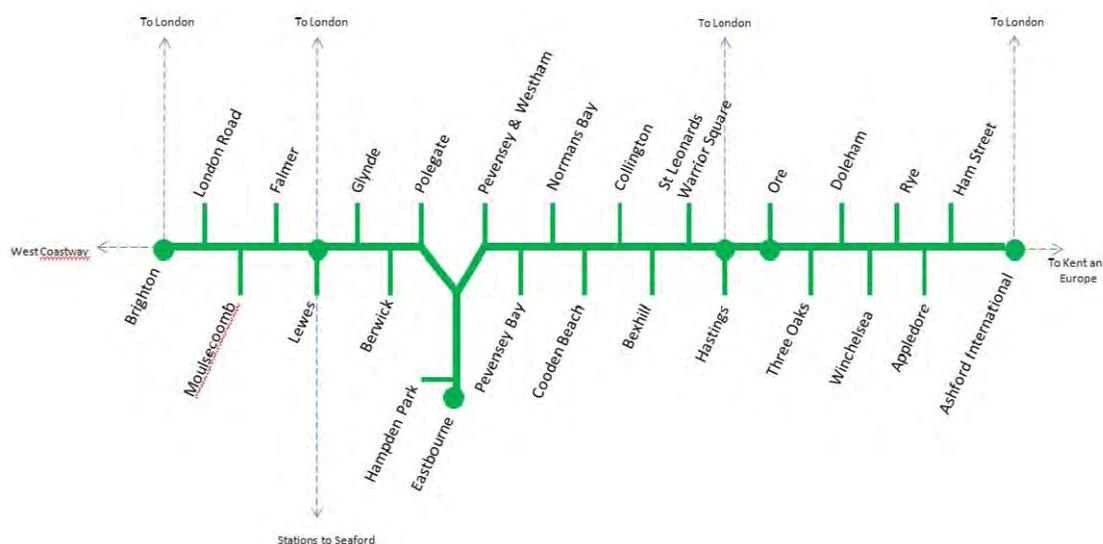
CCTV	Close Circuit Television
CIS	Customer Information Screens
CoP	Code of Practice
DfT	Department for Transport
DOO	Driver Only Operation
ELR	Engineers Line Reference
ESCC	East Sussex County Council
mph	Miles per hour
PA	Public Address
PRM	Persons with Reduced Mobility
RDC	Rother District Council
RSSB	Railway Safety Standards Board
SDO	Selective Door Opening

1. Introduction

1.1 Background

The study into the proposed new railway station at Glyne Gap has been commissioned by Rother District Council (RDC), East Sussex District Council (ESCC) and Land Securities Group PLC (Land Securities) in order to build on earlier studies which suggested, at an outline level, that there might be a case for the provision of a station at this site. In particular, the purpose is to identify whether a business case exists for a new station at Glyne Gap, which will inform Rother District Council (RDC) and East Sussex County Council's (ESCC) transport and land-use planning processes and relevant local and transport plans.

The East Coastway is the main east-to-west railway along the South Coast in East Sussex, running from Brighton via Lewes, Eastbourne, Bexhill and Hastings to Ashford. The proposed site of Glyne Gap station would be located between Bexhill and St Leonards Warrior Square. Glyne Gap lies to the west of Bo Peep Junction, where the Hastings-London direct line diverges from the East Coastway line, therefore meaning that the new station would be served by only the East Coastway service.



Map of East Coastway route: Brighton-Ashford

The East Coastway is served by three trains per hour along the section between Lewes, Eastbourne and Hastings, all provided by Southern who were awarded the South Central franchise in September 2009. This franchise is due to cease in July 2015, after which it will be absorbed into the greater Thameslink franchise, which also comprises Great Northern and part of the South Eastern franchises.

Mott MacDonald have been commissioned to assess the feasibility of a new station at Glyne Gap, near Bexhill on Sea. Earlier studies were conducted in 2002 and 2004 which included site visits to identify physical constraints to the construction of a new railway station at this location. This technical note forms the infrastructure assessment, Stage 2 of the current station study, to a Network Rail GRIP 2 stage – as referred to in section 2.4 of our proposal document.

The earlier 2004 study considered two possible station locations: one with staggered platforms across the pre-existing pedestrian underbridge, and the other with both platforms located to the east of this underbridge. The results of this earlier study have been considered in the undertaking of this new Infrastructure Assessment.

1.2 Methodology

The current study is being conducted in five stages:

- Stage 1:** Review the Existing Studies;
- Stage 2:** Infrastructure Assessment;
- Stage 3:** Operations Assessment and Updated Demand Modelling;
- Stage 4:** Business Case and opportunities for Delivery; and
- Stage 5:** Reporting.

A site visit and desk study were carried out in order to update recommendations from previous studies. The following elements were assessed:

- Overall location;
- Track gradient;
- Platforms;
- Pedestrian requirements;
- Station accessibility;
- Car parking provision; and
- Construction requirements.

As requested in the brief, consideration and cost for different levels of station provision at Glyne Gap have been examined, termed in the Study Brief as:

- Do-minimum;
- Intermediate; and
- Full scheme.

These different levels may be equated to differing levels of provision of facilities such as:

- Access routes;
- Waiting rooms;
- Staffing;
- Car/cycle parking;
- CCTV; and
- Passenger Information Systems.

1.3 Scope of Report

This outline feasibility report covers the findings of the infrastructure assessment for the proposed site at Glyne Gap and incorporates the results of a desk study and a site visit. It identifies physical constraints to the construction of a station at Glyne Gap, and provides an estimate of the costs.

1.4 Reference Material

Key reference material used in this study is as follows.

1.4.1 Guidelines and Codes of Practice

- HMRI Railway Safety Principles & Guidance Part 2B – Guidance on Stations 1996
- Department for Transport: Accessible Train Station Design for Disabled People: A Code of Practice. Version 03 November 2011 (DfT CoP)
- Railway Group Standards and Network Rail Company Standards including :
 - Network Rail Track Design Handbook NR/L2/TRK/2049 revision 1 (2008)
 - RSSB Railway Group Standard Interface between station Platforms, Track and Trains GI/RT7016 issue 4 (2010)
 - RSSB Guidance on Platform Geometry GI/GN7616 issue 1 (2010)

1.4.2 Information from Network Rail

- Extracts from Network Rail's Hazard Directory
- Civil Engineering Plan 0747123- WJB-03 (May 2011) St Leonards West Marina by Waterman Civils Consulting Engineers, showing track geometry, line speeds, features, etc.
- Access To Hastings – Rail Issues, New Passenger Station At Glyne Gap, Bexhill-On-Sea Stage 1 Update Report (May 2004) Comments From Network Rail - 2011

1.4.3 Historic Reports

- Access to Hastings – Rail Issues New Passenger Station at Glyne Gap, Bexhill-on-Sea: Stage 1 Update Report (ref no 202436/T&P/CRO/02/C) - by Mott MacDonald, for East Sussex County Council – May 2004

1.4.4 Client Project brief

- Proposed New Passenger Rail Station at Glyne Gap, Bexhill June 2012 – Rother District Council

2. Proposed Station Site



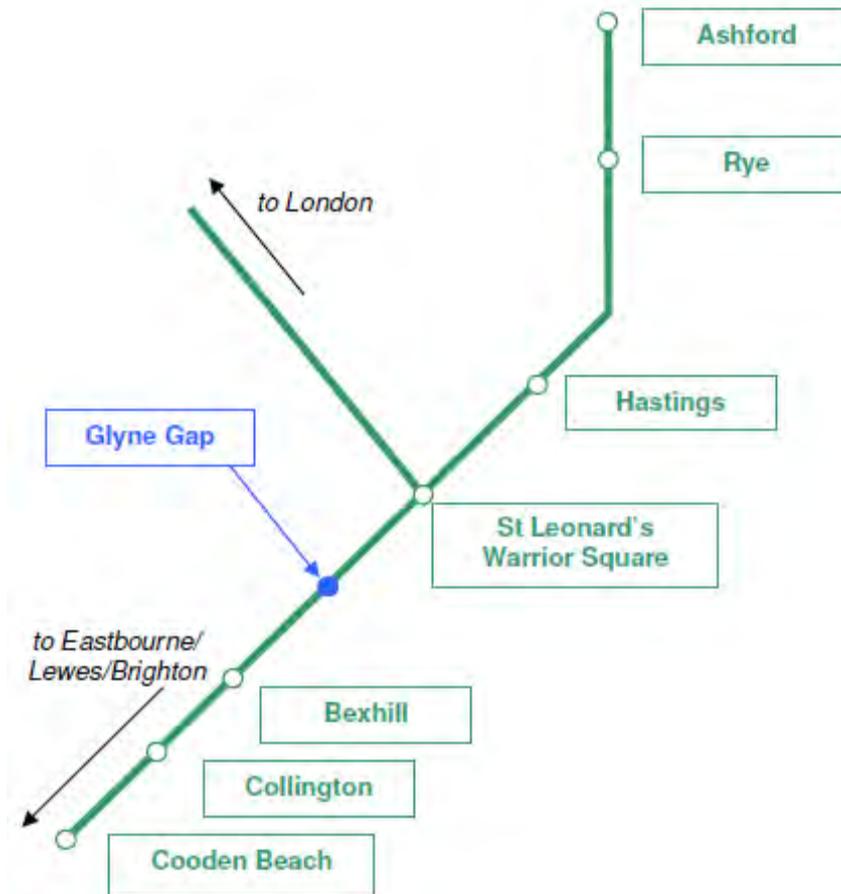
Site Location Map

The proposed site of Glyne Gap station is at the eastern extremity of Bexhill, adjacent to the Ravenside Retail and Leisure Park. It is located close to the main east-west A259 road between Bexhill and Hastings. There are a limited numbers of houses close to the proposed station site, being mainly located to the north across the busy A259 road. In the vicinity is a relatively new site for Bexhill College, and is located approximately 1km as the crow flies from the new station site.

As identified in the original 2004 study, there are a number of constraints at the site, including:

- Line gradient in the vicinity of the station site (1:264), which would require a derogation from ORR's Safety Directorate and Network Rail;
- Constrained site adjacent to main road, developments and beach;
- Signalling; and
- Station access routes.

The proposed station is located on railway line ELR: WJB (Willington Jn to Ashford.) at approximate mileage 31miles to 31.5miles. The line at this point is on a curvature of radius 5013m gradient of 1 in 264 falling towards St. Leonard's Warrior Square. The Up Line runs in the direction of Bexhill and the Down Line in the direction of St. Leonard's Warrior Square.



Station Location Schematic to show approximate location of proposed new station at Glyne Gap

There is currently good access to the station location from the adjacent A259 directly into an existing car park area adjacent to Ravenside Retail Park to the north side. Further pedestrian and cycle access is available to the south side from the Connect2 cycle path / footpath recently constructed in the area. An existing underbridge is currently in use for pedestrian and cycle access between the (A259) road, retail park and residential areas of Pebsham and the beach.

The site is bordered by the beach on one side which incorporates a new coastal Connect2 cycle track. The cycle track utilises an existing underbridge (no. 214) for access. The south west area of the proposed site contains a cafe which fronts directly onto the beach.

The north side of the proposed site is bordered by the A259 – Hastings / Bexhill Road and Ravenside Retail Park, in particular the delivery access road, a small car parking area and an existing building which is currently used as business premises and public toilets, believed to be owned by Land Securities Group Plc and the local council respectively.

The northwest area of the site behind the existing Retail Park is retained by a masonry wall of varying height with a palisade fence on top.

The railway runs along an embankment at the location of the proposed station with a cutting both to the west in the Bexhill direction and east in the Hastings direction. The embankment and cutting sides are steep. The embankment is up to approximately 4m high to the west of the existing underbridge. To the east of the underbridge the embankment reduces to become level with the surrounding area. The approximate height of the underbridge is 3.5m.

A desktop study and survey of the area will be required to ascertain location and extent of any buried services.

3. Requirements for proposed station

It is assumed that the proposed station would be constructed to one of three levels of facilities:

- *Basic station* – Category F - small unstaffed as defined in Railway Group Standard GI/GN7616;
- *Station with intermediate facilities* – Category E/F small, partially staffed; or
- *Station with full facilities* – Category E small, staffed.

Following the operational assessment the preferred option would be a basic station of Category F.

3.1 Track

Track geometry limits for new platforms in accordance with Network Rail Company Standard NR/L2/TRK/2049 rev 1, Railway Group Standard GI/RT7016 issue 4 and guidance note GI/GN7616 issue 1 are for a gradient of not greater than 1 in 500 and on a curve not less than 1000m radius; the preference is for a straight and level track.

In this area there is twin track with no crossing or turnout points. There is an approximate gradient of 1 in 264 and a curve of 5013m throughout the site, therefore a derogation will be required for the gradient as it is greater than the standard limit of 1 in 500. Potential mitigations such as trap points may be required, however, for this assessment it has been assumed that these will not be necessary, and as such any implied costs have not been included. It should be noted that this is not a terminal station and it is assumed no coupling or uncoupling of trains is to take place.

Current line speeds in the area are 70mph on both lines. The area is electrified using 750v DC third rail controlled from Brighton. We are aware of proposals to upgrade the overall line speed to 90mph maximum once the current re-signalling is complete, though have not seen details of the limits to apply at this location, and our assessment is based on the capability of the infrastructure in its current state. The positioning of a station within the section could impact on trains achieving the 90mph limit dependant on the timetabling and frequency utilised.

3.2 Signalling

Signalling is currently being upgraded along this route and is understood not to incorporate specific provision for a new station at Glyne Gap. An existing 2 aspect colour light signal is located at the site, but future signal locations are unknown. It is assumed that the locations are similar and as such a signal will require to be relocated dependant on final location of the station and confirmation of the new signal proposals. Due consideration of signal sighting will be required for any furniture on the Up platform in front of the signal due to the curvature.

There are cable routes and a location case in the area which are assumed to be associated with the signal. Cable route protection and relocation of location cases may be required, dependant on the final location of the station. Cable routes would typically be directed through platforms, along with other services.

3.3 Station facilities

For the proposed station layouts it has been assumed the basic station requirement is for an unstaffed station. There are two platforms, one on each side of the tracks, which require pedestrian access conforming to Department for Transport Code of Practice (DfT CoP) requirements.

For intermediate and full stations it is assumed a ticket office will be required, similar to other small-to-medium stations along the route. This would comprise of a single ticket sales counter which complies with the DfT CoP requirements, a small staff area and a public area within the building. The approximate plan area for a station building is 50m² for a new building or an extension to the existing building in the car park. It is assumed that as public toilets exist nearby these will not be provided within the station building.

3.4 Access between Platforms

Access routes are to be in accordance with DfT Code of Practice. There is an existing underbridge used for pedestrian and cycle access, at the site.

Ramps should preferably be to a gradient of 1 in 20 with landings at a maximum of 10m; the maximum gradient could be 1 in 12, with a minimum width of 2m.

Lifts can be considered as an alternative for a manned station but due regard should be given to the location and to maintenance issues. The DfT CoP indicates that should the rise be more than 2m an alternative means of access to the ramp should be provided, thus derogation to the DfT CoP may be required as the rise at Glyne Gap is over this limit.

Lifts should be standard Network Rail 16-person through lifts, complying to EN81-70 and DfT CoP.

3.5 Information and other Facilities

The following facilities will be required at the station:

- CIS screens with clock (similar to other stations on the route), 1 no. per platform and where provided 1 no. in station building;
- Long Line PA system;
- Help points (these may be omitted if a fully manned station is present);
- 1 no ticket machine for a basic station, 2 no. for intermediate and full station facilities;
- Station entrance sign/identifier (most likely in the form of a totem in the existing car park area);
- Lighting;
- Signage;
- Notice boards providing timetabling and other relevant information and contact numbers; and
- Cycle Storage.

3.6 Security

Access to all areas of the station would be required, with clear lines of visibility. Remotely monitored CCTV cameras would need to be provided to cover all areas of the station and car park if provided, including the existing underbridge (no. 214). It is assumed that the remote control centre operated by the TOC has sufficient capacity for the new CCTV system at this station.

3.7 Waiting Shelters

Sheltered accommodation would be required on each platform in the form of waiting shelters with high visibility glazing material and integral seating conforming to the minimum requirements of the DfT CoP. In this location an 'enclosed' shelter is recommended given the exposed nature of the station site adjacent to the beach. The two shelters would each have an approximate plan area of 12-18m², and would be of "Paragon Anti-Vandal" form (by Macemain & Amstad) or similar approved.

Alternative waiting shelter of brick and glazing could be provided with an approximate area of 30m²; this is assumed to be provided for a station with full facilities.

3.8 Platforms

3.8.1 Lengths

The current trains which run along the route are of mainly 4 and 8-car 20m long coach combinations, or of 2-cars of 23m each (diesel multiple units) on the Marshlink service. The majority of trains are of 4-car formation, therefore minimum platform lengths should be able to accommodate a 4-car train similar to those in operation, and be suitable for an 8-car for the intermediate and full facilities proposals. It is assumed Selective Door Opening (SDO) - as currently in use on this line - can be used for trains longer than the platform if required (see below). The current rail users are familiar with this system.

Thus based on the current '20m' rolling stock units and an allowance of 2m for stopping tolerance (as per RSPG Part 2B) approximate platform lengths are:-

- 4-car platform : - 84m
- 8-car platform : - 166m

for a more conservative 23m car length

- 4-car platform : - 94m
- 8-car platform : - 186m

Minimum platform lengths are dependent on train carriages used and the configuration of carriages used for service not frequency. Longer platforms cost more. Refer to operational assessment for frequency and carriages required for a service.

Currently a SDO system is in use on this route which could be utilised to stop longer trains at the station than the platform length can accommodate. And the majority of the trains along the route are of 4 car formation. Therefore on this basis the proposed options are to use :

- Basic station : – 4-car platform of 84m
- Intermediate station : - 8-car platforms of 166m
- Full facilities station : – 8-car platforms of 186m

3.8.2 Platform Width

A platform width of 2.5m minimum would be required, although 3m is preferred. All platform furniture, shelters etc. must be at least 2.5m from the front edge of each platform in accordance with Network Rail Company Standards and DfT CoP.

A further 2m width has been allowed for the platform shelters. This additional width can be used where required for other platform furniture and ramp / stepped access as appropriate, provided there is no adverse impact on the minimum clear width of platform. It is assumed that no additional width will be required to accommodate pedestrian flows.

3.8.3 Platform height and Stepping Distances

The maximum stepping distances of 275mm horizontal and 250 vertical and 350mm diagonal (as per diagram in A8.13 NR/L2/TRK/2049 rev 1) are to be maintained throughout the platform.

The front edge of the platform must be 915mm vertically above the nearest rail and nominally 730mm horizontally from the running edge of the nearest rail. The horizontal dimension may require analysis due to the curvature of the track.

It has been assumed the stepping distances and required visibility along the length of the trains can be achieved at the current radii of the track.

3.8.4 Platform fencing, mesh and end ramps

A fence (welded mesh or similar) at least 1.5m high above the top of platform level would need to be provided to the rear of each platform, along the full length of the platform. Galvanised steel mesh would be required beneath the front edge of the platforms (if suspended platforms are used) to prevent ingress of litter etc. Gated stepped access would be required at the end of each platform, by which railway personnel may access the track.

3.8.5 Platform surfacing

The front edge of the platform would require a coping, then a tactile studded paviour (colour-contrasting) behind. The surfacing of the platform may comprise concrete slab, concrete panels or a bituminous surfacing, laid evenly to a 1:40 fall towards the rear of the platform. All surfaces would need to be non-slip.

3.9 Integrated Transport

3.9.1 Drop-off points

Drop-off locations are to be provided in accordance with the DfT CoP requirements; these would include a bus stop, and taxi / disabled person drop-off location.

A bus route currently runs along the adjacent road stopping near the petrol garage towards Hastings and directly opposite towards Bexhill. There is currently no crossing point for the road in the vicinity of the bus stop and the bus stops do not incorporate a raised area for ease of access/egress for Persons of Reduced Mobility (PRM). Incorporation of such a crossing would be subject to local council requirements and provision.

3.9.2 Car park

The location of the station is very restricted for provision of additional car parking facility. Some parking is currently available at the site (approximately 30 spaces) and along the side of the road towards Hastings, with an adjacent footpath. Further parking areas are available in the retail park. A specific car park should be provided for the full station option.

Using National Rail Travel Survey (NRTS) data from the comparator stations used in the demand forecast, it is estimated that 65.4% of drive-up trips would result in parking at the proposed station. The other 34.6% of drive-up trips would be composed of 'kiss-and-ride' drop-offs or trips by taxi. Applying this to the derived number of drive-up trips it is estimated that 32 cars per day would park at Glyne Gap; this is a robust estimate assuming a car occupancy rate of one person per vehicle.

A new car park for approximately 50 cars, typical bay size 4.8m x 2.5m with 6m lane width between rows could be provided for full parking facilities. The surface would be level, finished, and permeable to allow

rainwater to soak in (of type such as Tarmac Porous Asphalt system, or similar approved). The car park should be fenced with 1.8m palisade fencing, powder coated green or black. It is recommended that a hinged height-restricting barrier be provided at the car park entrance. The car park would be illuminated to current lighting levels as specified in DfT CoP and include the requisite accessibility requirements.

In line with the DfT CoP a minimum of 5% of the total capacity of the car park would need to be designated for disabled motorists (minimum bay size 4.8m x 3.6 incorporating a 1.2m transfer zone and an additional 1.2m safety zone to the rear as applicable). This provision should be made in the area of the existing car park which is in a better proximity to the station location.

Costing is being verified. If provision is for a basic station this car park is not included. Landtake issues/costs have not been included.

3.9.3 Access road

An access road would be required from the junction with the public road to the car park where provided, suitable for traffic travelling in both directions. It is assumed that buses would not enter the car park as there is a closer alternative for access to the station if required in the location of the existing car park.

Access is provided to the Bexhill end of the existing parking area for delivery lorries and as such would be suitable for buses. A second entrance is available to the Hastings end of the car park. The layout of the current parking area would not permit buses to pass through the car park easily.

3.9.4 Cycle racks

Cycle racks would be provided within the car park (if provided) or in the entrance area for the station.

Existing cycle racks are provided outside the sea front cafe 'Cafe on the Beach' adjacent to the cycle track and could be extended if required. An alternative location would be adjacent to the leisure centre next to the existing parking area.

3.9.5 Pedestrian routes

There is currently a footpath adjacent to the cycle track to the beach side of the site. Access to the road and retail park is via the existing car park and there is a pavement with dropped kerbs from the A259 road past the retail park to the existing underbridge. At present there are no markings for the crossing point across the delivery road.

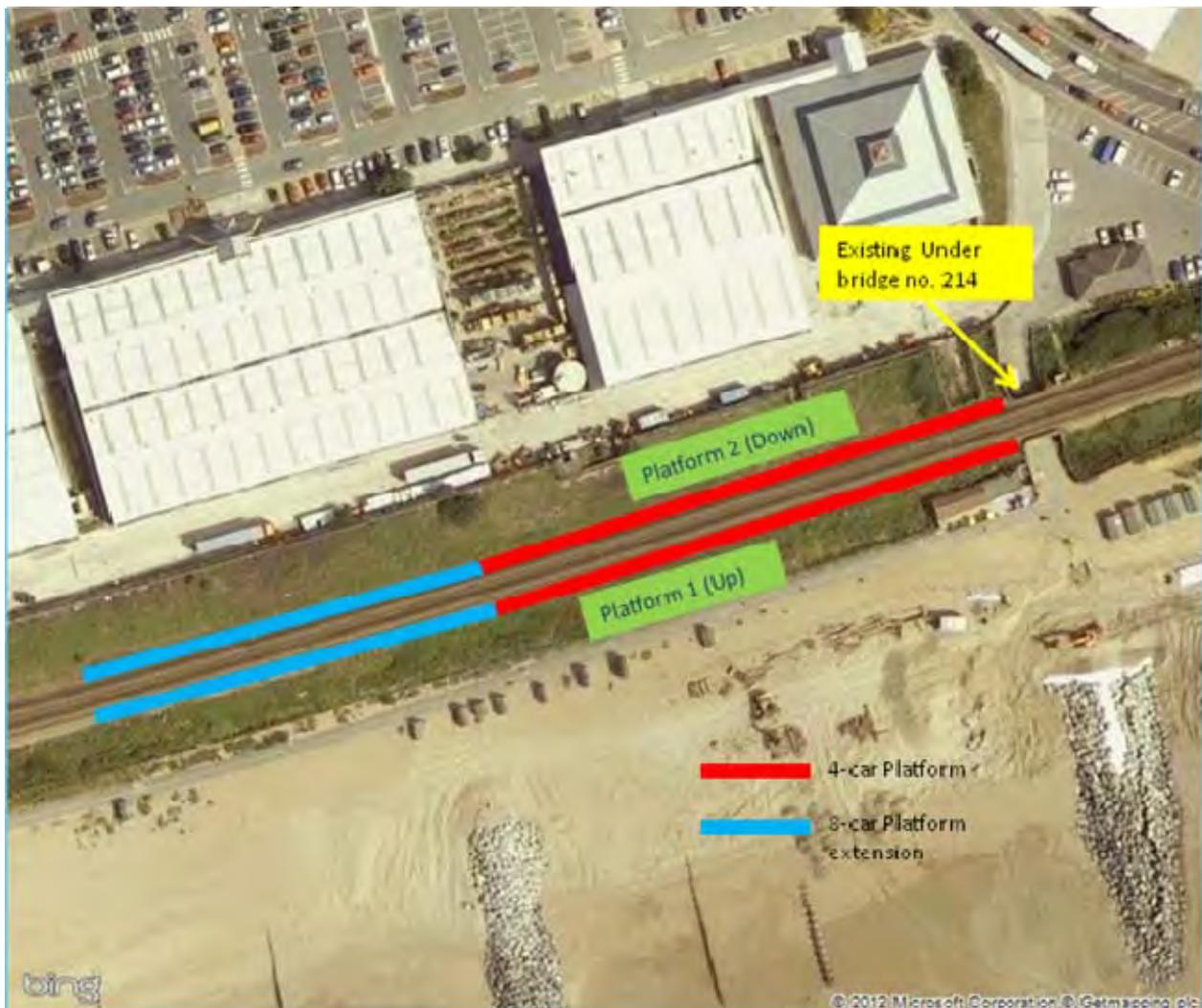
Additional lighting to comply with DfT CoP requirements may be required for the existing underbridge, following a lighting survey, if it is to be used as a main access route between platforms.

4. Potential station options

From the desk study and site visit, 3 main options were identified for the proposed station arrangement. Further options for differing access routes, platform lengths and level of facilities provided have also been identified. The options outlined below are based on the use of ramped access and utilisation of the existing underbridge to cross the track. Alternative step-free access via lifts could also be considered in place of extensive ramps for the options involving a staffed station, but this would require careful consideration of the operating costs and maintenance requirements.

4.1 Platform arrangement and access Option 1 – Platforms to west of underbridge

4.1.1 Site summary



Platform Arrangement Option 1

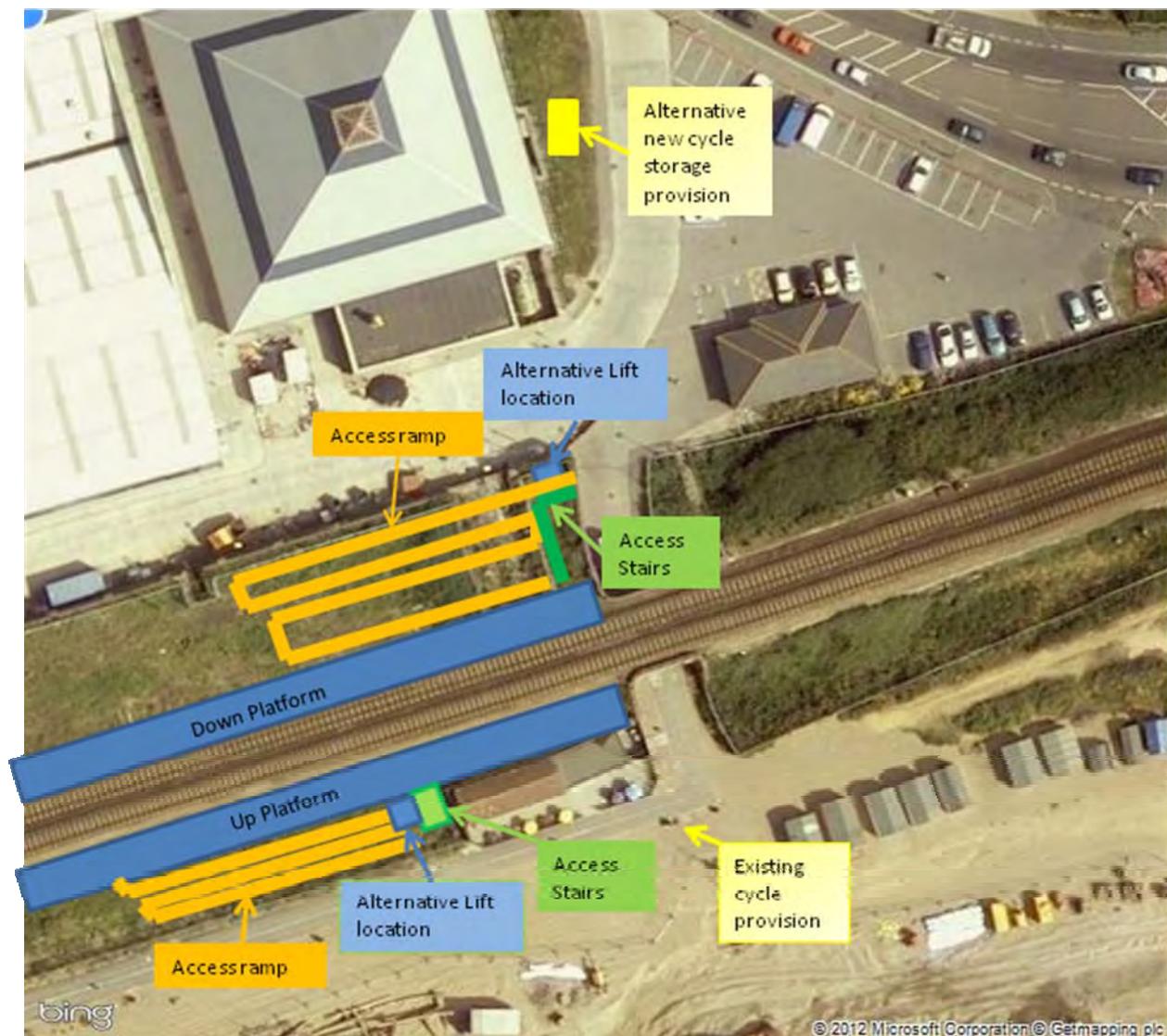
Location: Glyne Gap West of Underbridge 214.

Approximate chainage: 31m 00c to 31m 12c (ELR: WJB)

Track radius: 5013m radius.

Track gradient: 1:264

Topography: the railway is supported on steep embankments to a maximum height of approximately 5m above surrounding land in this location. At the western end of the proposed platforms the embankments decrease in height prior to entering a steep-sided cutting. At the eastern end, near the underbridge, the embankments are approximately 3.5 metres above the surrounding land. This area is directly open to the beach area and the sea, so shelters would be provided for all station options.



Access Routes to Platforms Option 1

Access to the platforms: with the option for an unmanned station, the exposed location, costs and visual impacts it is anticipated that the existing underbridge (no. 214) will be used as an access route between platforms, rather than providing an additional footbridge. It is proposed to use ramped access for the 'step-free' access route and incorporate a set of steps which may be preferred to the ramp by some users. No

lifts are proposed at the site, thus avoiding issues of maintenance and availability of the lift for use when repairs are required.

The ramps would be positioned to the rear of the platforms and to gain the approximate 4.5m rise in height to platform level (3.5m embankment and 1m platform height) would be approximately 105m in length for a gradient of 1 in 20 including landings of 1.8m in accordance with Department for Transport Code of Practice (DfT CoP) requirements. This is within the preferred maximum 400m length of route to a platform, though the preferred DfT CoP limit of 2m height gain by a ramped access without an alternative means of suitable Persons with Reduced Mobility access could not be achieved.

Alternative platform access: use of lifts could be considered for the staffed station option in place of the ramped access.

Impact on environment: works to the embankments would require significant clearance of the existing ground cover and shrub for both of the proposed platforms. The platforms, waiting shelters, ramps/lifts, positioned in an elevated location above the surrounding area, would have a significant visual impact on the area. Further investigation is required to ascertain if protected species are present and to assess the likely impact. The visual impact of the station would be mitigated by the retail park behind.

Extension of platforms towards the west: it is possible to accommodate a longer 8-car platform in this direction prior to the start of the cutting. The embankment decreases in height in this direction.

4.2 Platform arrangement and access Option 2 – Platforms to east of underbridge

4.2.1 Site summary

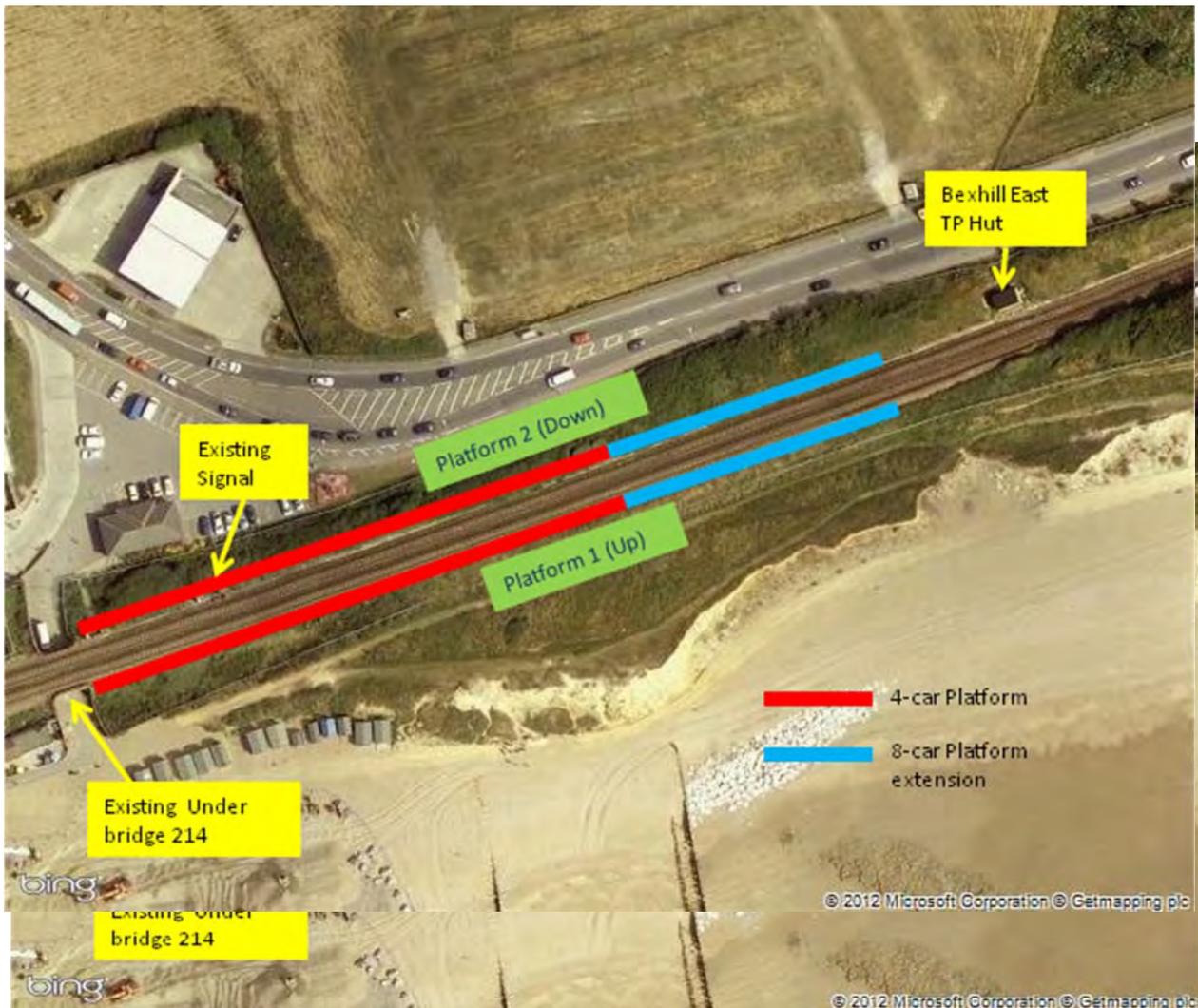
Location: Glyne Gap East of Underbridge 214.

Approximate chainage: 31m 13c to 31m 40c (ELR: WJB)

Track radius: 5013m radius.

Track gradient: 1:264

Topography: the railway is supported on steep embankments to a maximum height of approximately 4m above surrounding land in this location. At the eastern end of the proposed platforms the embankments decrease in height prior to entering a steep-sided cutting. This area is partly protected from the sea by the adjacent grassed rise.



Platform Arrangement Option 2

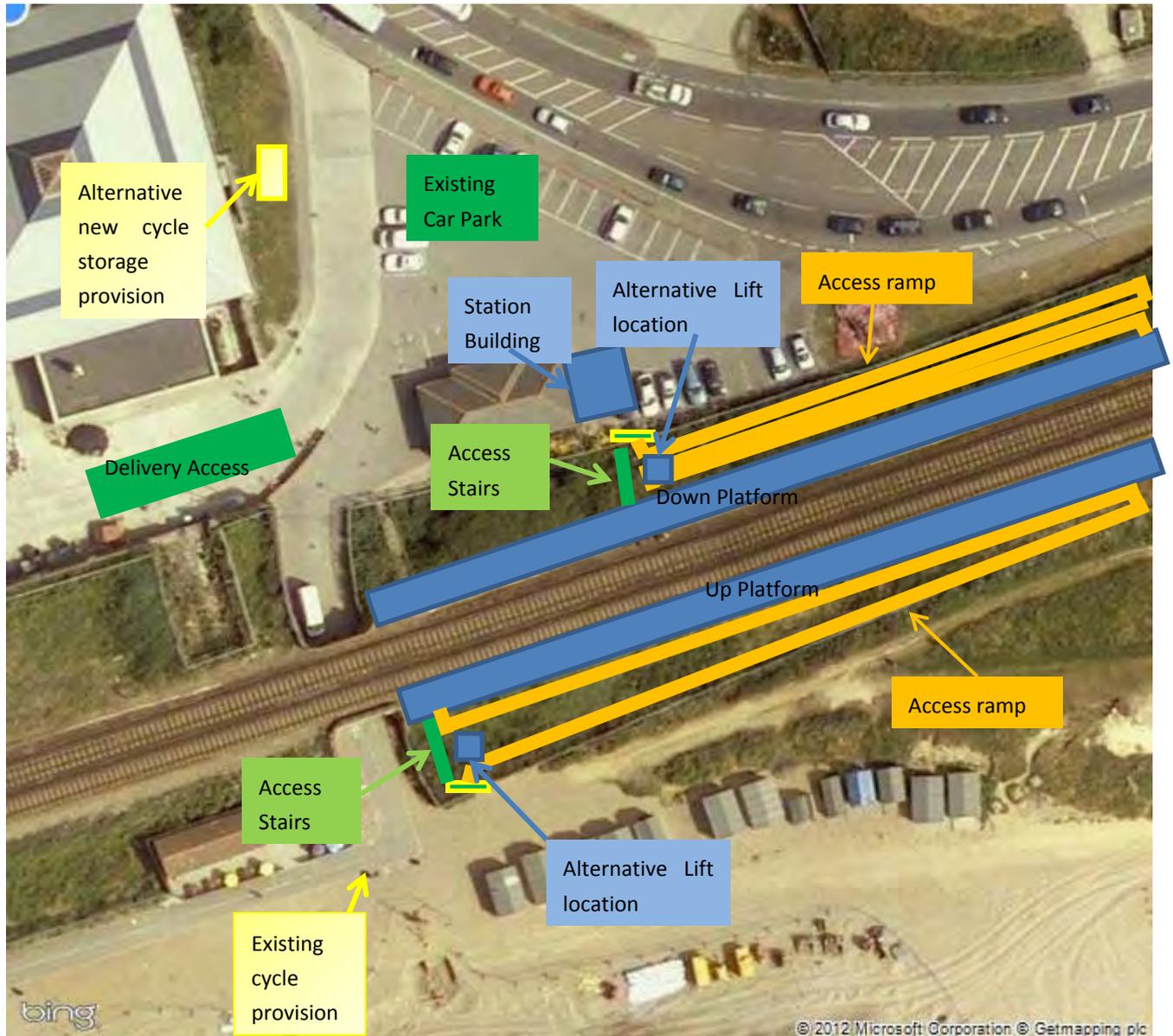
Access to the platforms: with the option for an unmanned station, the exposed location, costs and visual impacts, it is anticipated that the existing underbridge (no. 214) will be used as an access route between platforms. It is proposed to use ramped access for the 'step-free' access route and incorporate a set of steps which may be preferred to the ramp by some users. No lifts are proposed at the site thus avoiding issues of maintenance and availability of the lift for use when repairs are required.

The ramps would be positioned to the rear of the platforms and to gain the approximate 4.5m rise in height to platform level (3.5m embankment and 1m platform height) would be approximately 105m in length for a gradient of 1 in 20 including landings of 1.8m in accordance with Department for Transport Code of Practice (DfT CoP) requirements. This would be within the 400m length of route to a platform, though the preferred CoP limit of 2m height gain by a ramped access without an alternative means of suitable Persons with Reduced Mobility access could not be achieved.

Alternative platform access: use of lifts could be considered for the staffed station option in place of the ramped access.

Impact on environment: works required to the embankments would require significant clearance of the existing adjacent to both of the proposed platforms. The platforms, waiting shelters, ramps/lifts, positioned in an elevated location above the surrounding area, would have a significant visual impact on the area.

Further investigation is required to ascertain if protected species are present and to assess the likely impact. The east end of the station would be partly disguised by the raised grass area toward the sea, but there is currently no visible background to the north of the site for the raised platforms and shelters, and thus they would be prominent to the skyline.



Access Routes to Platforms Option 2

Extension of platforms towards the East: it is possible to accommodate a longer platform in this direction for an 8-car platform prior to the start of the cutting. The embankment would be decreasing in height in this direction.

4.3 Platform arrangement and access Option 3 – staggered platforms

4.3.1 Site summary

Location: Glyne Gap East of Underbridge 214.

Approximate chainage: 31m 00c to 31m 40c (ELR: WJB)

Track radius: 5013m radius.

Track gradient: 1:264

Topography: the railway is supported on steep embankments to a maximum height of approximately 4m above surrounding land in this location. At the western end of the proposed platform 1 the embankment decreases in height prior to entering a steep sided cutting. In the centre, near the underbridge, the embankments are approximately 3.5 metres above the surrounding land.



Platform Arrangement Option 3

Access to the platforms: with the option for an unmanned station, and considering the exposed location, costs and visual impacts, it is anticipated that the existing underbridge (no. 214) would be used as an

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access route between the platforms. It is proposed to use ramped access for the 'step-free' access route and to incorporate a set of steps which may be preferred to the ramp by some users. No lifts are proposed at the site thus avoiding issues of maintenance and availability of the lift for use when repairs are required.

The ramps would be positioned to the rear of the platforms and to gain the approximate 4.5m rise in height to platform level (3.5m embankment and 1m platform height) would require to be approximately 105m in length for a gradient of 1 in 20 including landings of 1.8m in accordance with Department for Transport Code of Practice (DfT CoP) requirements. This is within the 400m length of route to a platform, though the preferred CoP limit of 2m height gain by a ramped access without an alternative means of suitable Persons with Reduced Mobility access could not be achieved.



Access Routes to Platforms Option 3

Alternative platform access: use of lifts could be considered for the staffed station option in place of the ramped access.

Impact on environment: works required to the embankments would require significant clearance of the existing adjacent to both of the proposed platforms. The platforms, waiting shelters, ramps/lifts, positioned in an elevated position above the surrounding area, would have a significant visual impact on the area. Further investigation is required to ascertain if protected species are present and to assess the likely impact. Visual impact would be as described above for Options 1 and 2.

Extension of platforms towards the west/east: it is possible to accommodate a longer platform for an 8-car train in either direction prior to the start of the adjacent cuttings. The embankment would be decreasing in height in both directions.

4.4 Construction requirements for Platform and Approach options

Embankment works: the existing embankments are very steep (possibly 35-45°), and overgrown, including some shrubs to the north (down side) and a drainage area in the location of the existing pedestrian access (affecting Option 2 and 3). Stabilisation of the embankment may be required to support the additional loads imposed by the new platforms and approach structures. Works to accommodate existing drainage would be required for the area adjacent to the existing pedestrian access steps.

Platform support and construction: the platforms would be of lightweight modular construction, comprising reinforced concrete deck planks and steel or concrete frame structure spanning between reinforced concrete pile caps or a similar modular platform system.

Ramps and Stairs: for each platform location there is a requirement for a set of steps consisting of three flights of stairs and a ramp of approximately 105m. The vertical rise of the stairs would be in the order of 4.5m, requiring 3 flights of 10 risers with two 2m landings and a width of 2m. The ramps would each be 2m wide and approximately 105m total length (including landings every 10m). The floor and step finishes would be anti-slip. Continuous handrails would be provided on both sides of the stairs, ramps and landings.

The ramp and stairs would be of a lightweight structure to limit additional surcharge placed on the embankment. However in some areas a retaining wall would be required and it is anticipated that this would be of reinforced concrete, in particular the approach ramp for the Down Platform in Option 1 which would require a significant retaining wall towards the bottom of the ramp / stair area. Where significant height above the embankment level would be required a steel structure is anticipated with piled foundations. Exact lengths of the differing types of construction would require further detail of the embankment profile. The Up Platform for Option 2 is anticipated to consist of low retaining walls as the ramp would rise along with the adjacent ground.

Retaining Wall (Option 1): works would be required to support and break out a section of the existing 4.5m high retaining wall and excavate for the platform approach route adjacent to the northwest side of Underbridge 214 to a width of approximately 4m.

It is assumed that normal (rules-of-the-route night/weekend) railway possessions would be available for construction work, and that the piling work would not require abnormal blockades

4.5 Station building options



Station Building and Access Points to Platforms Location Options

There are two key options for a station building which include:

- Extend existing building in adjacent car park
- Provide a new building

The extension of the existing building (Options 1 and 2) would mitigate the land take required for such a building; however this would potentially affect the existing business contained within the building. The west end of the building has an access door and window present and would restrict the access route through to the underbridge (Option 2).

A new building would require additional space but could be situated partly on an existing area of grass at the entrance to the car park to the east (towards Hastings) (Option 3). This would make its location distant from the western location option of the platforms and the existing underbridge. A second location (Option 4) would be above the existing retaining wall to the rear of the retail park. This location would most likely

then require lift access, and works to provide support to the existing retaining wall and railway. The building would require access by all passengers requiring assistance or tickets; thus retracing their route to gain access to the up platform. A ticket office at the level of the car park and access route via the underbridge would extend the excavation works considerably in this location.

4.6 Transport Integration Options

4.6.1 Cycle storage facilities

The provision of cycle storage facilities could be by:

- Use of existing cycle storage facilities on the beach outside of the existing café; or
- Providing additional facilities in the same or similar location as existing, or adjacent to the leisure centre building in the retail park to the northern side of the station.

Covered cycle facilities could be provided in either location, this however has only been considered for a station with full facilities.

4.6.2 Bus Interchange

The options for interchange with bus services are:

- Use of existing bus stops;
- Upgrade existing bus stops; or
- Provide bus facilities within existing parking area.

Provision of new bus facilities would require considerable works within the existing parking area and are potentially not cost-beneficial. Therefore for intermediate and full facilities it has been proposed to upgrade the existing stops and provide a new pedestrian crossing point for the A259 and pedestrian route to the stops from the station. For a basic station use of existing bus stops with no would be most economical.



Transport Interchange Options

4.6.3 Drop off point, Taxi Rank and Waiting Area

A specific area for taxis can be marked out if required in the existing car park area. Where a station building is provided this could be located at a point closest to the building.

Similarly a specific area for drop-off could be marked out. Where a station building is provided this could be located at a point closest to the building similar to the taxi rank, in particular for disabled drop-off.

Short-stay bays could be allocated and signed for this purpose in one area of the car park.

Alternative locations for these facilities other than this existing car park would be distant to the station and as such would not provide the same ease of interchange provision, and may result in the existing car park and adjacent road side being utilised instead.

For the basic station it has been assumed that no additional specific car parking provisions would be made. This is discussed in more detail in the section below.

For the intermediate station it is assumed that the general car park layout would be re-marked with due cognisance of any station building provided to allow for a drop-off area incorporating a taxi rank and a dropped kerb.

For the full station facilities this car park would be re-arranged to provide all facilities, though this would severely limit the car parking available in this area.

4.6.4 Car Park Options

Dependant on the level of facilities required there are four basic options for car parking :

- No car park (use of area for drop-off area, bus interchange and station building)
- Use of the car park as it is with no further accessibility/interchange provision
- Use of existing car parking areas with modifications for station building and drop-off areas and to include 2 no. disabled parking bays.
- A new car parking site potentially integrated with that of the existing retail area and upgrade of the existing area for drop off and accessibility provision.

Access between platforms and the car park would be via the car park and pedestrian routes already provided, and upgraded to incorporate a dropped kerb adjacent to disabled parking bays.

5. Costs

The cost estimates for the three main options are as follows at GRIP2 level (+/- 30%):

Option	Point cost estimate	Cost + 30% (GRIP2)	Cost + 50% optimum bias
Basic Station	£2,243,301	£2,916,300	£3,364,952
Intermediate Station	£3,116,637	£4,051,600	£4,674,956
Full Station	£4,394,835	£5,713,300	£6,592,253

There are a number of exclusions for these estimates (further details in Appendix C) which include:

- Works to the embankment for stability;
- Works to support the retaining wall if Option 1 is chosen;
- Works to divert services;
- Works to relocate signals;
- Land take cost;
- Any possession costs during construction (assumed to use existing engineering possessions); and
- Mitigation works for derogation requirements.

The cost estimates above indicate optimism bias, which is required under current DfT guidance to be added to GRIP2 cost estimates at a rate of 50% when the business case appraisal is carried out.

Further assumptions are given in Appendix C.

There are a number of variations possible for these options dependent on the chosen facilities and location required. This will impact on cost.

6. Option Comparison

It is clear from the above that longer platforms and the addition of more facilities will increase the cost of the station.

6.1 Platform Locations

Any of the options above incur the risk of work being required to strengthen the embankment, to allow construction of the platforms and access ramps, stairs, etc. All options would have long access ramps if lifts are not used but the risks and cost associated with construction and maintenance of the lifts at a small station need to be addressed. In particular, factors that could affect lift availability due to the exposed location, such as breakdown, increased wear and vandalism must be given detailed consideration.

Options 1 and 3 incur longer walking routes due to the location of the access to the Up Platform either between platforms or from the existing car park / transport interchange location. Length of walking route is a consideration for Persons with Reduced Mobility as well as convenience for any passenger.

Option 1 locates the Down Platform on top of the existing retaining wall, thus increasing the risk of additional works being necessary to alter and support the structure. Works in this area would also require access to the retail park delivery access route, and consideration of maintaining access to the cycle route and footpath through the existing underbridge.

The location of the Down Platform in Option 2 would be more convenient for any of the location options for a station building in the existing car park, particularly as the entrance to the Down Platform can be arranged to suit. Maintenance access to the Down Line already exists adjacent to the underbridge. However the available space within the existing Network Rail fenceline for the Up Platform becomes restricted towards the east end. This platform would back directly onto the existing cycle track and footpath. The embankment in this location also decreases to become level with the adjacent ground and a second exit could be made in this location. The existing cycle / footpath would not comply with the requirements for access ramps in line with the Department for Transport Code of Practice.

There is an existing signal present on the Down Line which would for Option 2 require to be relocated. The signal is a two-aspect colour light signal. The cost of relocating a signal can be significant, and such works would only be undertaken in possessions of the line. However there is currently a re-signalling scheme being designed for the area and the location of any new signal or repositioning of existing signals is as yet unknown.

The third option is to stagger the platforms as in Option 3. This would have the advantage of shortening the access route for the Up Platform and could be used to avoid the works involved in moving a signal, but doing so would incur further works to the existing retaining wall as for Option 1. Train Operating Companies generally prefer to have platforms opposite each other for operational ease.

With regard to the location of the platforms, Option 2 appears to be the preferred option in overall terms; but works to the existing signal would increase cost and potential time scales. This cost of the works to the signal may be offset by the additional cost required to carry out works to the existing retaining wall under the alternative options, and there may be the potential to include the signalling works within the current planned re-signalling. The visual impact of the staggered platforms is greater than for the other options, although the Up platform would mainly be hidden from view from the land side by the existing buildings. Access for construction in this location can be gained directly from the existing car park.

6.2 Station Building

The options available for the location of a station building, containing the ticket office for the intermediate and full-facilities options, include the existing car park adjacent to the site or above the existing retaining wall. There would be a higher risk locating the building above the retaining wall and additional support works would most likely be required. The location of a building in the existing car park could be achieved as either an extension to the existing building or as a completely separate building. The extension option would reduce the overall footprint and thus reduce the space taken within the parking area, so allowing slightly more space to be made available for car parking.

Placing a station building in the car park would require an agreement from the landowner. An extension to the existing building would require consent from its owner and liaison with the current occupier, however, it is assumed that as the building contains public toilets this is owned by Rother District Council.

Extending the building to the west end adjacent to the underbridge would provide the closest access to both platforms via the underbridge; however the existing building contains both a window and doorway at this end and space is constrained by the requirement to maintain access through to the underbridge. It is assumed that the maintenance access point to the railway would be relocated to be via the platforms and as such the existing steps could be removed or altered accordingly.

Extending the existing building to the east would require the removal of parking spaces but is otherwise less restricted. It would be ideally located for access to the Down Platform in the location of Option 2. However the location would be more remote from the planned use of the underbridge for access between platforms or for the Option 1 and Option 3 platform arrangements, and slightly further from the main direction of passenger demand which is from the west.

Overall the location of the station building as an extension to the west of the existing building appears to be the most preferable location for all platform layout options, albeit more restricted in available space.

6.3 Car Park

As the space directly adjacent to the site is restricted, a car park has been considered for a full facilities station only. One location has been identified for a 50-space car park. This is to use part of the existing retail park's car park, which could possibly be used subject to agreement with the site owner.

The use of the existing car park at retail park would be a feasible option, though some restrictions would have to be implemented for the car park and parking by commuters would restrict parking for customers of the shops if no further spaces are provided. The main option for extending this parking would be to build a decked car park in the current location. There are currently pedestrian access routes to the proposed station site from this car parking area. This option would not require any additional land take and is currently in use for parking, it is also on the same side of the road thus mitigating the risk and inconvenience of crossing a busy road.

6.4 Option Selection

Summarising the above, the following options are identified as providing the recommended station arrangement:

- Platform layout as per Option 2 – Both platforms east of the existing underbridge with ramped access for basic and intermediate facilities and lifts for a full facility (manned) station;

- Additional car parking for full facilities to be located in Ravenside Retail Park. However it should be noted that the current facilities provide approximately 30 of the estimated required 32 spaces.

At this stage it is envisaged that the basic option Category F station with ramped access would be suitable for the envisaged service of one train per hour. Car parking facilities have not been included with this option but current levels available would provide the majority of the estimated spaces. However additional parking to provide the estimated level and growth capacity could be provided in addition.

7. Recommendations for Further Investigation

There are a number of assumptions made within this report. For the next stages of the assessment of options it is recommended the following be considered:

- Verification of the condition of the existing embankment, track and formation;
- Topographical survey;
- Geotechnical investigation;
- Investigate further current signalling upgrade proposals;
- Buried services data;
- Investigation and assessment of existing retaining wall construction and condition – subject to any option selection;
- Flood/storm risk assessment;
- Environmental survey and desktop study; and
- Further detailed study of potential access arrangements to platforms.

7.1 Track gradients and radii

The assumptions made in this report are based on the diagrams included in Appendix B. However, the track gradients and radii need to be confirmed by a detailed track survey. It has also been assumed that the station will be permitted on track at a gradient greater than 1 in 500 and that this permission will not require the additional cost of installation of trap points; this needs to be confirmed by further liaison with Network Rail and ORR.

7.2 Topography

During the site visit assumptions were made about the land shape and levels of the affected areas. These assumptions need to be confirmed by a detailed topographical survey (which could be undertaken in conjunction with the track survey).

7.3 Embankments and geology

This report makes assumptions about the materials of the embankments and ground in general. A ground investigation should be carried out to confirm the nature of the embankments and underlying ground/rock in the location of the proposed station. The investigation should also determine the characteristics of the groundwater table and investigate whether the ground is contaminated.

7.4 Signalling

It has been assumed that no significant signalling works will be required, including arising out of the planned re-signalling of the East Coastway. This assumption should be verified by seeking access to signalling diagrams of the area. Further liaison with Network Rail will be required.

7.5 Existing track and formation

It has been assumed that the existing track and formation are in adequate condition and thus require no works before construction of the proposed station. This should be verified through further liaison with Network Rail, with access to earthworks asset records etc.

7.6 Buried services

There may be buried/surface services that would require diversion or protection. This risk may be minimised by requesting access to Network Rail's buried services records, contacting statutory undertakers, and by carrying out site surveys.

7.7 Existing Structures

It has been assumed that the existing retaining wall to the north of the site behind the retail park and the existing underbridge are in adequate condition and thus require no works before construction of the proposed station. This should be verified through further liaison with Network Rail, with access to earthworks asset records etc.

7.8 Flood risk assessment and environmental survey

It has been assumed that there are no significant environmental impacts or concerns regarding flooding due to the location. However this should be verified through further specialist studies.

7.9 Requirements of other stakeholders

Other parties may have specific requirements not addressed within the scope of this report. Train Operating Companies, Freight Operating Companies, Department for Transport, Network Rail, Office of the Rail Regulator, the Environment Agency, the owner of the car park and all other affected stakeholders should be consulted about their requirements, and should be asked for feedback on this proposed scheme.

7.10 Economic viability

The overall viability of the scheme, which will depend on demand forecasting and a business case study, will be addressed in later stages of this study, and is not considered in this report.

Appendix A. Photographs



Option 1 - Up line platform site (beach side) looking east showing retail park to the north



Option 1 - Up line platform site (beach side) looking east showing cycle track to the south



Option 1 - Up line platform site (beach side) looking west



Option 1 - Up line platform site (beach side) looking north showing existing cafe, underbridge no. 214 and cycle facilities



Existing cycle storage facilities looking south



Existing underbridge no.214 south elevation (beach side)



Existing underbridge no.214 north elevation (retail park side)



Option 1 – Down line Platform site looking west along the retail park delivery access road showing existing retaining wall.



Option 2 - Up line platform site (beach side) looking north showing existing signal



Option 2 - Up line platform site (beach side) looking east showing existing signal



Option 2 - Up line platform site (beach side) looking west



Option 2 - Up line platform site (beach side) looking west, showing cycle route



Existing retail access road looking towards underbridge no.214



Existing retail access road looking towards A259, showing area grass adjacent to the leisure centre



Area grass adjacent to existing leisure centre looking towards underbridge no. 214



Existing car park showing end of existing building and bus stop for Bexhill on A259



Existing car park looking west toward Retail Park



Existing car park looking west toward existing building and site of Option 2 Up platform



Existing car park entrance from Hastings via A259, looking east



Existing car park entrance from Hastings via A259 looking west, showing area of grass before car park and Option 2 Up Platform site



Existing Bus Stop for Hastings on A259 north of the site



Existing car park for Retail Park

Appendix B. Information Provided by Network Rail

- Extract from Sectional Appendix
- Extracts form Hazard Directory
- Civil Engineering Plan 0747123 (May 2011) by Waterman Consulting Engineers

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LOR	Seq.	Line of Route Description	ELR	Route	Last Updated								
SO600	003	Willington Jn to Ashford	WJB	Kent / Sussex	02/12/06								
Location		Mileage M Ch	Running lines & speed restrictions		Signalling & Remarks								
Bexhill Substation Bexhill SB (CCW)		29 61 29 61			<table border="1"> <tr> <td>AB</td> <td>Bexhill SB (CCW)</td> <td>NRN</td> <td>CSR</td> </tr> <tr> <td>RA8</td> <td>DC:Brighton</td> <td>097</td> <td>95</td> </tr> </table>	AB	Bexhill SB (CCW)	NRN	CSR	RA8	DC:Brighton	097	95
AB	Bexhill SB (CCW)	NRN			CSR								
RA8	DC:Brighton	097			95								
BEXHILL		29 69											
Bexhill Ground Frame		29 77											
Galley Hill Ground Frame (OOU)		30 60											
Bexhill East TP Hut		31 14 31 23	<table border="1"> <tr> <td colspan="2"></td> <td>CSR</td> </tr> <tr> <td colspan="2"></td> <td>30</td> </tr> </table>			CSR			30				
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ELR/ELR Nam	R	EN	E CRIP ION	LOC LN ME	rack	Fr t xt
WJB:M WILLINGDON NM OMEEM NM	30.0990M	30.0990M	uried GasMipeM	exhillM	All/MultipleM TracksM	GasM ain at Galley Hill Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.0990M	30.0990M	uried FoulM Water ServiceM	exhillM	All/MultipleM TracksM	Relief Foul Sewer at Galley Hill Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1121M	30.1121M	uriedM ultiM roductMipeM	exhillM	All/MultipleM TracksM	300mm drain Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1187M	30.1187M	uried FoulM Water ServiceM	exhillM	All/MultipleM TracksM	SewerM emorandum/Annex to 26509 InfoM on underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1254M	30.1254M	uried FoulM Water ServiceM	exhillM	All/MultipleM TracksM	36" sewer.memo of 10/12/1973 sewerM diameter amended to 600mm andM 900mm.M1004.Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1275M	30.1275M	uried GasMipeM	exhillM	All/MultipleM TracksM	12" gas main.30.42 to 374.S929.Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1429M	30.1429M	uried GasMipeM	exhillM	All/MultipleM TracksM	Gas main.30.60= to 30.69=.S759.Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1430M	30.1430M	AuthorisedM AccessMointM Road RailM achinesM	Galley HillM	DownM ain/FastM	
WJB:M WILLINGDON NM OMEEM NM	30.1672M	30.1672M	uried GasMipeM	exhillM	All/MultipleM TracksM	Gas main Info on underground/overheadM services <gas, water, electricity> has notM been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1737M	30.1737M	uried FoulM Water ServiceM	exhillM	All/MultipleM TracksM	Sewers Info on underground/overheadM services <gas, water, electricity> has notM been validated.M
WJB:M WILLINGDON NM OMEEM NM	31.0175M	31.0175M	uriedM ultiM roductMipeM	exhillM	All/MultipleM TracksM	900mm pipe Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	31.0219M	31.0219M	uriedM ultiM roductMipeM	exhillM	All/MultipleM TracksM	900mm Dia.Mipe Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	31.0263M	31.0263M	uried GasMipeM	exhillM	All/MultipleM TracksM	Gas & WaterMipes underMdgeM No.214/Annexed to 16443 Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	31.0286M	31.0286M	uried GasMipeM	exhillM	All/MultipleM TracksM	Gas main.S759.Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	31.0286M	31.0286M	AuthorisedM AccessMointM edestrianM	Galley HillM	DownM ain/FastM	
	31.0330M	31.0330M		exhillM		

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<p>1 Up Bexhill 2 Down Bexhill 3 Up Hastings 4 Down Hastings</p>													

ELR/ELR Nam	R	EN	E CRIP ION	LOC LN ME	rack	Fr t xt
WJB:M WILLINGDON NM OMEEM NM	30.0990M	30.0990M	uried GasMipeM	exhillM	All/MultipleM TracksM	GasM ain at Galley Hill Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.0990M	30.0990M	uried FoulM Water ServiceM	exhillM	All/MultipleM TracksM	Relief Foul Sewer at Galley Hill Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1121M	30.1121M	uriedM ultiM roductMipeM	exhillM	All/MultipleM TracksM	300mm drain Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1187M	30.1187M	uried FoulM Water ServiceM	exhillM	All/MultipleM TracksM	SewerM emorandum/Annex to 26509 InfoM on underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1254M	30.1254M	uried FoulM Water ServiceM	exhillM	All/MultipleM TracksM	36" sewer.memo of 10/12/1973 sewerM diameter amended to 600mm andM 900mm.M1004.Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1275M	30.1275M	uried GasMipeM	exhillM	All/MultipleM TracksM	12" gas main.30.42 to 374.S929.Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1429M	30.1429M	uried GasMipeM	exhillM	All/MultipleM TracksM	Gas main.30.60= to 30.69=.S759.Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1430M	30.1430M	AuthorisedM AccessMointM Road RailM achinesM	Galley HillM	DownM ain/FastM	
WJB:M WILLINGDON NM OMEEM NM	30.1672M	30.1672M	uried GasMipeM	exhillM	All/MultipleM TracksM	Gas main Info on underground/overheadM services <gas, water, electricity> has notM been validated.M
WJB:M WILLINGDON NM OMEEM NM	30.1737M	30.1737M	uried FoulM Water ServiceM	exhillM	All/MultipleM TracksM	Sewers Info on underground/overheadM services <gas, water, electricity> has notM been validated.M
WJB:M WILLINGDON NM OMEEM NM	31.0175M	31.0175M	uriedM ultiM roductMipeM	exhillM	All/MultipleM TracksM	900mm pipe Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	31.0219M	31.0219M	uriedM ultiM roductMipeM	exhillM	All/MultipleM TracksM	900mm Dia.Mipe Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	31.0263M	31.0263M	uried GasMipeM	exhillM	All/MultipleM TracksM	Gas & WaterMipes underMdgeM No.214/Annexed to 16443 Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	31.0286M	31.0286M	uried GasMipeM	exhillM	All/MultipleM TracksM	Gas main.S759.Info onM underground/overhead services <gas, water, electricity> has not been validated.M
WJB:M WILLINGDON NM OMEEM NM	31.0286M	31.0286M	AuthorisedM AccessMointM edestrianM	Galley HillM	DownM ain/FastM	
	31.0330M	31.0330M		exhillM		

ELR/ELR Nam	R	EN	E CRIP ION	LOC LN ME	rack	Fr t xt
WJB:T WILLINGDONT NT OTEET NT			uriedFoul WaterService		All/Multiple racks	600mm sewer.31.15 to 31.16.Info onT underground/overhead ServicesKgas,T water, electricity> has Not been Validated.T
WJB:T WILLINGDONT NT OTEET NT	31.0512	31.0512	Authorised Accessoint edestrian	exhillRdT rT 214T Galley Hill Sub/ST	Down Main/Fast	RiskRating 3, HazardRating 2,Score6T
WJB:T WILLINGDONT NT OTEET NT	31.0513	31.0513	Authorised Accessoint edestrian	EXHILL EAST HT HUT	Unknown	Address:DeLa WarrMews,T exhill onT Sea:TN40 1RD Details:Network Rail gate,T offT exhill Road,T exhill, then into siteT Q521465T
WJB:T WILLINGDONT NT OTEET NT	31.1254	31.1254	uriedWater Main	exhill	All/Multiple racks	Laying ofT umping Main Info onT underground/overhead ServicesKgas,T water, electricity> has Not been Validated.T
WJB:T WILLINGDONT NT OTEET NT	31.1275	31.1275	uriedMulti roductT ipeT	exhill	All/Multiple racks	1000mm outfall Info onT underground/overhead ServicesKgas,T water, electricity> has Not been Validated.T
WJB:T WILLINGDONT NT OTEET NT	31.1298	31.1298	uriedWater Main	exhill	All/Multiple racks	32" pupming main.H614.Info onT underground/overhead ServicesKgas,T water, electricity> has Not been Validated.T
WJB:T WILLINGDONT NT OTEET NT	31.1583	31.1583	uriedWater Main	St Leonards	All/Multiple racks	8" Flood WaterT ipe Info onT underground/overhead ServicesKgas,T water, electricity> has Not been Validated.T
WJB:T WILLINGDONT NT OTEET NT	31.1716	31.1716	Authorised Accessoint edestrian	ridgewayT ConservationT YardT	Down Main/Fast	RiskRating 3, HazardRating 2,Score6T
WJB:T WILLINGDONT NT OTEET NT	32.0043	32.0043	uriedMulti roductT ipeT	St Leonards	All/Multiple racks	ipeUnderRly Info onT underground/overhead ServicesKgas,T water, electricity> has Not been Validated.T
WJB:T WILLINGDONT NT OTEET NT	32.0065	32.0065	uriedFoul WaterService	St Leonards	All/Multiple racks	Sewer Info onT underground/overheadT servicesKgas, water, electricity> has notT been Validated.T
WJB:T WILLINGDONT NT OTEET NT	32.0220	32.0220	Authorised Accessoint edestrian	West MarinaT OCDepot	Down Main/Fast	Authorised pedestrian Access point. ViaT trainT operating companyT depot.T
WJB:T WILLINGDONT NT OTEET NT	32.0439	32.0439	uriedWater Main	St Leonards	All/Multiple racks	32" pumping main.32.15 ToT 32.25.H614.Info onT underground/overheadT servicesKgas, water, electricity> has notT been Validated.TIease allowT atT leastT 8T weeksT forT a completeT responseT
WJB:T WILLINGDONT NT OTEET NT	32.0593	32.0593	uriedWater Main	St Leonards	All/Multiple racks	32" pumping main.H614.Info onT underground/overhead ServicesKgas,T water, electricity> has Not been Validated.T
WJB:T WILLINGDONT NT OTEET NT	32.0638	32.0638	uriedT Overhead ElectricCable	St Leonards	All/Multiple racks	100mmT VCTableT duct, 800mm rising main.T
WJB:T WILLINGDONT NT OTEET NT	32.0858	32.0858	uriedFoul WaterService	St Leonards	All/Multiple racks	48" sewer.H661.Info onT underground/overhead ServicesKgas,T water, electricity> has Not been Validated.T
	32.0946	32.0946				

LIST OF ROUTES

TO UK MAP

CIVIL ENGINEERING PLAN

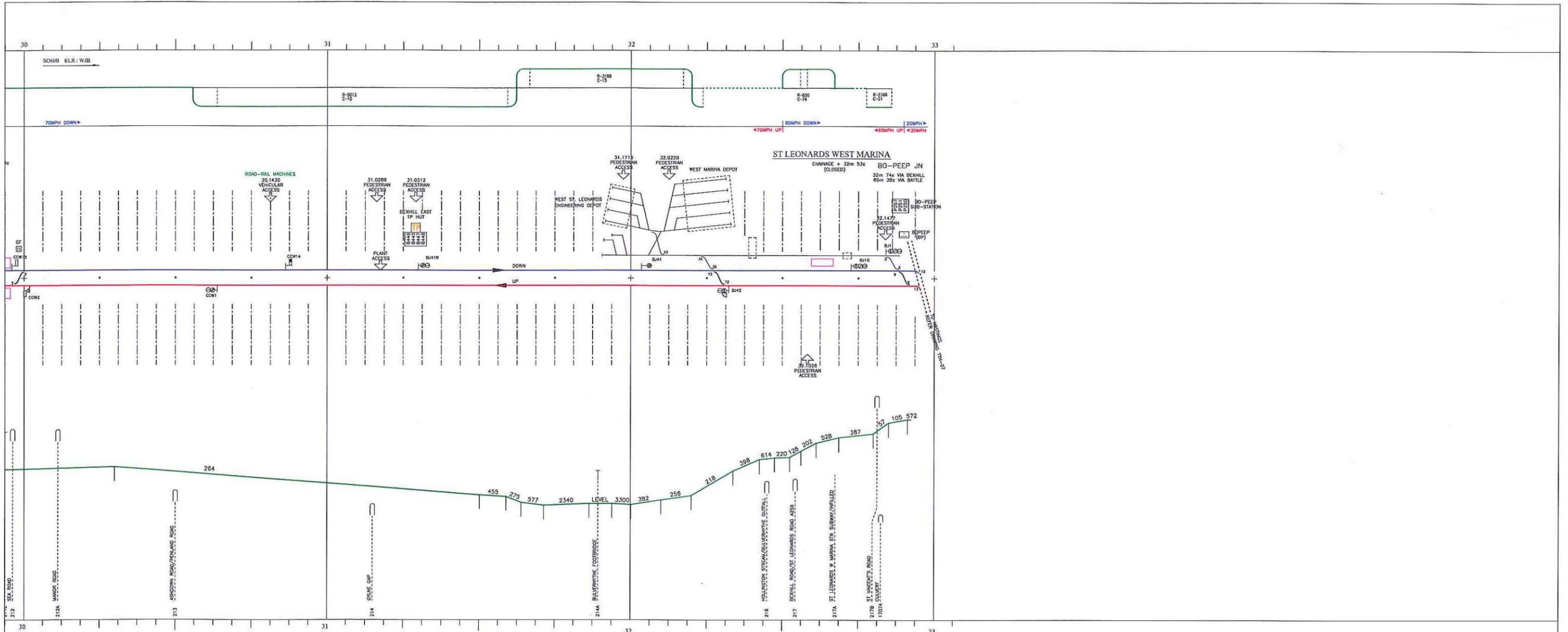
SIGNALLING PLAN

ELECTRICAL PLAN

HAZARD PLAN

TRACK QUALITY

POSSESSION PLANNING



Pickfords Wharf Clink Street London SE1 9DG
 1 020 7928 7888 1 020 7902 0952 e.p.a.lgoldsmith@waterman-group.co.uk

SOURCE DATA
 CURVES NR CURVE DATABASE
 LINE SPEEDS SECTIONAL APPENDIX TABLE A DIAGRAMS
 SIGNALLING SIGNAL SCHEME PLAN
 LEVEL KINGS GEOSIS & SECTIONAL APPENDIX TABLE A
 ACCESS POINTS HAZARD DIRECTORY
 GRADIENTS CARR SSTRUCTURE LIST
 S&C GEOSIS

NOTES

Signalling Not Validated

NOTE: THE INFORMATION SHOWN ON THIS DRAWING WAS EXTRACTED FROM EXISTING NETWORK RAIL DOCUMENTS AND HAS NOT NECESSARILY BEEN VALIDATED BY ON SITE INSPECTION BY THE CLIENT. ANY ERRORS OR OMISSIONS PLEASE ADVISE WATERMAN

DATE	REVISION	SOURCE	DRN	CHK	CLIENT
06-03-06	S&C AND SIGNALLING AMENDED AROUND BOPEEP JN	NR SIGNAL DIAGRAM No. 1541	JRAK	SDH	Balfour Beatty Balfour Beatty Rail Maintenance Limited Territory South East Area Kent
28-11-09	SIDINGS REMOVED AT WEST MARINA DEPOT AT 32M 20C (1893)	NR K&S WON 36	SDH	NB	
26-02-09	SIGNAL B411 UPDATED TO LED TYPE (3177)	NR K&S WON 49	MAC	NB	
03-02-10	CURVES CHECKED AND UPDATED	NETWORK RAIL	MAC	NB	
03-09-10	ACCESS POINTS CHECKED AND UPDATED	NETWORK RAIL	AK	SDH	
18-05-11	STRUCTURES UPDATED AS SHOWN	gEOGIS DATABASE	MAC	SDH	

CIVIL ENGINEERING PLAN	
PROJECT No.	0747123-
DIAGRAM No.	WJB-03
ROUTE	SO600 ELR WJB
MILEAGE	30 MILE TO 32 MILE 74C
VALIDATED/DRAWN	21-07-97

SEARCH

DRIVER MANUAL

TELECOMS PLAN

KEY

MAIN MENU

ELR/ELR Nam	R	EN	E CRIP ION	LOC LN ME	rack	Fr t xt
WJB:T WILLINGDONT NT OTEET NT			uriedFoul WaterService		All/Multiple racks	600mm sewer.31.15 to 31.16.Info onT underground/overhead ServicesKgas,T water, electricity> has Not been Validated.T
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WJB:T WILLINGDONT NT OTEET NT	31.1254	31.1254	uriedWater Main	exhill	All/Multiple racks	Laying ofT umping Main Info onT underground/overhead ServicesKgas,T water, electricity> has Not been Validated.T
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WJB:T WILLINGDONT NT OTEET NT	31.1298	31.1298	uriedWater Main	exhill	All/Multiple racks	32" pupming main.H614.Info onT underground/overhead ServicesKgas,T water, electricity> has Not been Validated.T
WJB:T WILLINGDONT NT OTEET NT	31.1583	31.1583	uriedWater Main	St Leonards	All/Multiple racks	8" Flood WaterT ipe Info onT underground/overhead ServicesKgas,T water, electricity> has Not been Validated.T
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WJB:T WILLINGDONT NT OTEET NT	32.0043	32.0043	uriedMulti roductT ipeT	St Leonards	All/Multiple racks	ipeUnderRly Info onT underground/overhead ServicesKgas,T water, electricity> has Not been Validated.T
WJB:T WILLINGDONT NT OTEET NT	32.0065	32.0065	uriedFoul WaterService	St Leonards	All/Multiple racks	Sewer Info onT underground/overheadT servicesKgas, water, electricity> has notT been Validated.T
WJB:T WILLINGDONT NT OTEET NT	32.0220	32.0220	Authorised Accessoint edestrian	West MarinaT OCDepot	Down Main/Fast	Authorised pedestrian Access point. ViaT trainToperating companyTdepot.T
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	32.0946	32.0946				



**Rother District Council,
East Sussex County Council
and Land Securities Group PLC**

**GRIP 2 Estimate
New Passenger Station at Glyne Gap
Platform and Station Works**

November 2012

Issue and Revision Record:

Rev.	Date	Originator	Checked	Approved	Description
00	27-Nov-12	Liam Shields	Melvyn Jones	Robert Walker	Draft issued for review / comment
01	28-Nov-12	Liam Shields	Melvyn Jones	Robert Walker	Minor alteration made

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311776 - New Passenger Station at Glyne Gap
 Platform and Station Works
 GRIP 2 Estimate Summary



	Construction Costs (including Main Contractors OH & P @ 12.5%)	Prelims @ 20%	Design @ 10%	Test & Commission on electrical work only @ 10%	Network Rail / Management @ 10%	Sponsor @ 4%	Point Estimate Total	MAXIMUM +30%	MINIMUM -30%
Basic 84m Platform	1,543,110	308,622	154,311	21,223	154,311	61,724	2,243,301	2,916,291	1,570,310
Intermediate 166m Platform	2,145,718	429,144	214,572	26,803	214,572	85,829	3,116,637	4,051,628	2,181,646
Full 186m Platform	3,015,286	603,057	301,529	52,823	301,529	120,611	4,394,835	5,713,286	3,076,385

311776 - New Passenger Station at Glyne Gap
GRIP 2 Estimate
Platform and Station Works
4Q 2012
28-Nov-12

ASSUMPTIONS REGISTER	
Ref:	Assumption:
	General
1	Base date of this estimate is 4Q 2012
2	All rates include O&P - 12.5%
3	Estimate range has been stated as +/- 40% for a GRIP Level 1 estimate, these percentages will require a review when additional information becomes available
4	See comments in the estimate for further assumptions
5	Excavated arisings from piling works, pile caps and general site clearance for disposal assumed on average to be 75% inert and 25% Contaminated Non Hazardous.
6	In a number of instances we have had to make allowances due to lack of information. The cost of the items is provisional and will require firming up at a later date (see below and the estimate for details)
7	Where appropriate, rates have been uplifted using General Building Cost Inflation Indices
8	Ramps and stairs can be constructed in mid week days from rear of platform
	Civil Works
1	Establish Green Zone working environment, supply and erect safety barrier and blue netlon fencing the length of the proposed work
2	Site clearance taken to proposed work area
3	Ducts for E & P, S & T, C & W are less than 1m deep with a sand bed, average 3 ducts per trench
4	Allowance for connecting to existing drainage allowed for
5	Existing drainage has suitable capacity to outfall new drainage into existing
6	Assumed that on average only the top 2m of the embankment will need to be excavated and disposed of off site to enable the platforms to be constructed
	Telecoms
1	Cable for lighting and loudspeakers nominally taken as a loop to each of the platform, ramps and footbridge
3	Cable for CCTV, CIS, help point, telephone, ticket vending m/c and smart card reader nominally taken as a single cable to each item of equipment
	Platform Works
1	Assumed that the platform is 3m wide
2	Allowed for a dual handrail on the access ramp and stairs and that they are 2m wide
	Electrical & Power
1	Assumed that sufficient power is available to supply the needs of the platform and a new lifts in the case of the full 186m platform
	Information used
1	Glyne Gap Station: Draft Infrastructure Assessment and Recommendations Report received 22/11/12

