

**Access Strategy and
Bridge Proposals**

**Colthrop Village
Thatcham**

**Prepared for
Colthrop Village
Consortium**

by

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1.0 INTRODUCTION

- 1.1 This report provides a review of the proposed access arrangements to serve the Mixed Use Local Plan Promotion Site at Colthrop Village. The report details the criteria used to select the proposed access solution and the benefits that it will provide for users of the local highway network.
- 1.2 Land at Rainsford Farm and at the former Paper Mill Site at Colthrop is being promoted as a mixed use sustainable urban extension at Thatcham, comprising new housing, school, local centre, recreational and local sports facilities. The site is approximately 36.5 hectares in area and currently comprises two separate land ownerships.
- 1.3 Rainsford Farm is currently accessed via Crookham Hill to the west of the site and comprises a farmhouse and a detached. The remainder of the site is currently in use as arable grazing/agricultural land.
- 1.4 The former paper mill site is vacant following the closure of the business but is accessed via Colthrop Lane to the north east of the site. Whilst part of the paper mill to the north of the canal has been demolished, a number of structures still remain on the site. This includes a substantial water tower, processing sheds, conveyor belt system, water tanks and pipelines. The remainder of the site includes significant areas of hardstanding and a series of ponds associated with the former industrial works.
- 1.5 To the north, the site abuts the Kennet and Avon Canal and the mainline railway between London Paddington and Exeter St Davids. To the north of the railway is the Colthrop Business Park and Industrial Estate. To the east, the site abuts a minerals treatment and processing plant owned by the same landowner. The River Kennet forms the southern boundary with open fields and agricultural land to the west (**Figure 1 refers**).
- 1.6 Access to the south of the site must be taken from Crookham Hill, which links the A339 Newbury to Basingstoke road, to the south, with the A4 Newbury to Reading road via Pipers Way to the north and to Thatcham town centre via Station Road.



- 1.7 Access to the north could either be taken from Station Road and Pipers Way (to the west of the site) or through the Colthrop Business Park via Gables Way (to the north east of the site) to the A4. Both of the northbound access options would need to accommodate an existing level crossing across the mainline railway and third party land issues.
- 1.8 Following detailed assessments it is considered that providing an access to the west of the site, via Crookham Hill, Station Road and Pipers Lane, provides significant advantages to both existing users of the local highway network and to users of Colthrop Village:

For users of the existing highway network, the provision of an access to west of the site will:

- Relieve an existing traffic congestion hotspot;
- Allow the closure of an existing level crossing on a mainline railway line, in accordance with Central Government and Network Rail policy aims;
- Provide a free flow connection across the railway for pedestrians, cyclists and motor vehicles;
- Improve accessibility to Thatcham Railway Station by removing a significant volume of existing traffic from the station access.

For users of Colthrop Village the provision of an access to the west of the site will:

- Allow the provision of sustainable access for all modes of travel with connections to Thatcham station and existing bus services on Station Road and Pipers Way;
- Allow for existing bus services to be improved and extended into the development without impacting on the viability of services;
- Reinforce the connections with Thatcham town centre;
- Avoid the need for any existing traffic travelling between Thatcham, the A4 and the A339 being diverted through the proposed development.



2.0 CONSTRAINTS ON THE EXISTING HIGHWAY NETWORK

2.1 As detailed above, the mainline railway crosses both Station Road and Colthrop Lane via level crossings which are located to the north of the proposed development site. On-site observations and assessment work undertaken on behalf of West Berkshire Council confirm that the operation of the level crossings represents a significant constraint on the operation of the local highway network.

2.2 Traffic and level crossing surveys were undertaken at the Crookham Hill/Station Road crossing in January 2012 as a part of a study for West Berkshire Council.

Table 2.1 provides a summary of the level crossing closure times and durations as recorded by the January 2012 surveys.

Table 2.1 - Recorded Barrier Operation

Average Barrier Down Time	04m 00s	
Longest Barrier Down Time	08m 41s	10th January from 08:58
Shortest Barrier Down Time	01m 21s	11th January from 09:42
Average Total Barrier Down Time during 08:00-10:00 (2 hours)	53m 13s	44% of the time
Average Total Barrier Down Time during 16:00-18:00 (2 hours)	46m 52s	39% of the time
Average Total Barrier Down Time during AM peak hour 08:00-09:00	30m 55s	51% of the time
Average Total Barrier Down Time during PM peak hour 17:00-18:00	21m 08s	35% of the time

2.3 The surveys indicate that the level crossing barriers are closed for over half of the morning peak traffic period (08:00 to 09:00) and 35% of the evening peak hour (17:00 to 18:00). This represents a constraint on the capacity of the road to accommodate road traffic and extensive traffic queues build up during the crossing closures.

2.4 **Table 2.2** details the maximum traffic queues recorded at the Crookham Hill/Station Road crossing during the January 2012 surveys.

Table 2.2 – Recorded Road Traffic Queue Lengths

Max Queue on Crookham Hill	540m	10th January at 17:26:19 (7 minutes after barrier down)
Max Queue on Station Road	295m	11th January at 08:13:20 (7 minutes after barrier down)
Max Queue on Piper's Way (including common section of Station Road of 100m length)	250m	11th January at 08:13:20 (7 minutes after barrier down) and 11th January at 16:07:06 (6 minutes after barrier down)



- 2.5 Whilst the queues are related to both barrier down-time and traffic flow, the longest queue lengths tended to form at the times of peak traffic flow. On Crookham Hill, queues sometimes continue to build after the barrier has lifted as vehicles are arriving at the back of the queue before vehicles in front of them have begun discharging.
- 2.6 There is a tidal pattern, with predominant traffic flow southbound over the crossing during 0800-1000 and northbound over the crossing 1600-1800. The average flows over the crossing are detailed at **Table 2.3**:

Table 2.3 – Average Traffic Flows across the Crookham Hill/Station Road level crossing

0800-1000 (2 hours)	Northbound	678
	Southbound	810
1600-1800 (2 hours)	Northbound	954
	Southbound	734

- 2.7 A number of improvements to the road network around the level crossing have been implemented by West Berkshire Council including a one way circulatory access to the station via Pipers Lane and the construction of a right turn filter lane to serve the Station Road Industrial Estate. Although the improvements have helped ease traffic movements around the level crossing when the barriers are closed, they have not been able to reduce the traffic delay or queue lengths.
- 2.8 It is clear from the extent of traffic queues and delays detailed at Table 2.2 that the local highway network is currently constrained by the operation of the level crossings.
- 2.9 In addition to the above, the recent electrification of the railway line between Reading and Newbury will enable the use of lighter weight trains which should reduce barrier downtime. However the need to retain dual fuel trains to accommodate routes to the west of Newbury currently restricts the impact of these improvements.
- 2.10 Recent observations on site indicate that although improvement works have been undertaken, significant traffic queues and delays still occur as a result of the operation of the level crossing on Station Road.



- 2.11 The addition of traffic generated by the proposed development at Colthrop Village would have the potential to exacerbate the traffic issues without suitable alternative crossing arrangements.



3.0 ACCESS AND LEVEL CROSSING OPTIONS

- 3.1 A number of different options for relieving the traffic congestion at the level crossing have been discussed with both West Berkshire Council and Network Rail, however the only practical alternative would appear to be to replace one of the crossings with a bridge.
- 3.2 Although it might be possible to replace the Colthrop Lane crossing with a bridge, none of the land required to construct the bridge is within the control of the promoters of the site. In addition the use of Colthrop Lane may not allow for the closure of the Thatcham crossing and therefore would not release any improvements to access for the Station.
- 3.3 Also benefits for Colthrop Village such as improvements to opportunities for sustainable modes of travel and connections with Thatcham town centre are much reduced.
- 3.4 It is therefore proposed that a new bridge be provided to replace the Thatcham crossing as part of the access proposals for the Colthrop Village promotion.

Crossing on the Existing Station Road Alignment

- 3.5 The existing alignment of the level crossing is in close proximity to accesses east and west of the road, both north and south of the level crossing. There are also existing bridges over the Canal and River directly adjacent to the southern side of the level crossing.
- 3.6 A bridge on the line of the existing level crossing would require ramps on both north and south approaches in order to provide the required headroom above the railway line and a single-span structure over the railway, Canal and River. There is insufficient highway land to provide the required ramps without closing the existing vehicular accesses to the industrial area and the Royal Mail depot, the car parks to both north and south of the station and the junction with Piper's Lane.

Alternative Alignment

- 3.7 An alternative arrangement where a bridge located away from the current line of the level crossing has also be considered. A number of different locations and alignments have been considered and it is concluded that the most suitable option would be to locate the proposed bridge to the east of the existing level



crossing between Pipers Lane to the north of the railway and Crookham Hill at the junction with Chamberhouse Mill Lane.

- 3.8 This conclusion is reinforced by the results of a Transport and Travel Paper prepared for the Thatcham Vision Action Plan, which stated that the “*the only practical solution would be to build a bridge further to the east*”.



4.0 ACCESS STRATEGY

- 4.1 The access strategy for the Colthrop Village proposal provides access from Crookham Hill, diverting the existing road that accesses the railway crossing through the site to a new bridge over the railway line connecting to Pipers Lane. A new roundabout would then be provided at the junction of Pipers Lane and Pipers Way, along with improvements and widening to Pipers Lane to provide footways connecting the site to the existing infrastructure on Crookham Hill and the northern section of Pipers Lane. Pedestrian access from the bridge to Pipers Lane, providing access to the railway station would also be provided. Drawing 5010.012 refers.
- 4.2 The existing level crossing could then be closed and the existing carriageway either side stopped up to allow access to the two station car parks, but not a through route
- 4.3 Drawing 5010.012 provides a preliminary design that shows that a suitable bridge and carriageway design can be achieved which can safely connect to the existing highway network both north and south of the site access and provide improved links across the railway for pedestrians and cyclists.
- 4.4 Preliminary discussions have also been held with Network Rail, who have confirmed that, in principle, they would be supportive of the scheme. Network Rail have confirmed they own land between the site and railway line (adjacent to the water tower) which would be needed for construction of the bridge and, again in principle, would be happy to provide this land and access to/over the railway line for construction of the bridge.
- 4.5 A secondary access will be provided to the east connecting to Colthrop Lane via the existing level crossing. This route provides an alternative access for emergency vehicles into the site. However, routes within the site would be designed such that the natural desire lines encourage traffic to the western access points of the site whilst the level crossing at Colthrop will also act as a constraint making this route less desirable.
- 4.6 A network of pedestrian and cycle routes will be provided through the site providing easy, lit routes for users connecting to the commercial / retail centre, school bus stops and to the wider infrastructure on Pipers Way, Chamberhouse Mill Lane and Colthrop Lane / Gables Way.



5.0 PROPOSED BRIDGE

- 5.1 **Drawing 5010.600 A** illustrates the preliminary design for the proposed bridge in greater detail. The bridge will be constructed to fully accord with Network Rail design standards and will accommodate standard clearances to the recently installed electrification gantries.
- 5.2 The bridge deck will be constructed of precast concrete beams supported on concrete bridge piers and will span both the railway and the Kennet and Avon Canal. It is anticipated that concrete pile foundations will be required to support the bridge piers and abutments. The bridge will have a span of 110 metres with a minimum height of 7 metres above the railhead and carry a 6 metre wide road and 3 metre wide footway/cycleway.
- 5.3 North of the railway the approach ramp will be constructed using a concrete panel faced reinforced earth wall system to minimise the impact on adjacent land uses. It is anticipated that a short length of the existing ditch on the east side of the approach ramp will need to be culverted during the construction of the bridge, but we should be able to reopen the ditch once construction is completed.
- 5.4 South of the Canal the approach ramp will be constructed on an earth embankment.
- 5.5 Both the approach ramps and the bridge alignment will be constructed to full highway design standards and will incorporate provision of a segregated pedestrian/cycleway and appropriate safety barriers.
- 5.6 The bridge has been designed to minimise the impact on adjacent land uses both during construction and operation as well as on existing utilities located within Pipers Lane.
- 5.7 A preliminary construction cost estimate has been prepared for the bridge by an experienced Civil Engineering Contractor (**Appendix 1** refers). The preliminary cost estimate only covers the operations required for the physical construction of the bridge but excludes land cost, utility diversion and protection costs, Network Rail access charges, any third party compensation and legal costs. Based on First quarter 2019 estimates, the preliminary cost estimate for the construction of the proposed bridge is £11,844,283.



6.0 TRAFFIC IMPACT

- 6.1 The provision of the new bridge could have a significant impact upon traffic flows and congestion around Thatcham Station.
- 6.2 The Colthrop Village Consortium have commissioned West Berkshire Council (WBC) to provide traffic model data for the Colthrop Village development using the Council's area wide traffic model.
- 6.3 It is noted that the area wide traffic model is currently being reviewed, however the results provided by the Council are considered to be sufficiently robust to provide an indication of the changes to local traffic flows resulting from the provision of the proposed bridge.
- 6.4 The traffic model was run for the future year of 2026, as was set by WBC in its original modelling work. A reference case was provided to show the predicted trips on the network in 2026 before the development access option was added to the highway network. This provides a base from which to compare any impact of the development.
- 6.5 The model was then run using the reference case traffic flows but introducing the new road infrastructure. The purpose of this test was to understand the impact of removing the constraint at Thatcham level crossing and whether this would significantly alter the traffic patterns on the network. Development generated trips were then added to the network as a separate model run to show the impact of these trips on the network. A summary of the flows for each of the model runs is set out in **Tables 6.1 and 6.2**.
- 6.6 It should be noted that the WBC traffic model is able to redistribute trips on the network based on demand and delays. Therefore adding new infrastructure will result in a change in traffic patterns and redistribution of trips on the network. Adding development trips will also result in a redistribution of trips as it models driver behaviour to choose the easiest, least congested routes.



Table 6.1 – AM Peak - 2026 with New Bridge and Thatcham Crossing Closed

Location	Station Road (west of Swan Rbt)		Pipers Way (north of Pipers Lane)		Thatcham Level Crossing / bridge		Chamberhouse Mill Lane (south of Level crossing)		Gables Way (north of Level crossing)	
	Northbound	Southbound	Eastbound	Westbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
2026 Reference case	274	400	477	636	525	741	525	741	157	88
Scenario 1 - 2026 with new Bridge and closure of Thatcham Level Crossing	293	389	755	617	745	731	771	731	157	88
<i>Difference between Reference Case and Scenario 1</i>	<i>19</i>	<i>-11</i>	<i>278</i>	<i>-19</i>	<i>220</i>	<i>-10</i>	<i>246</i>	<i>-10</i>	<i>0</i>	<i>0</i>
Scenario 1 - 2026 with new Bridge and closure of Thatcham Level Crossing Plus Development trips	368	441	786	633	864	808	767	762	274	138
<i>Difference between Scenario 1 and Scenario 1+ Development</i>	<i>75</i>	<i>52</i>	<i>31</i>	<i>16</i>	<i>119</i>	<i>77</i>	<i>-4</i>	<i>31</i>	<i>117</i>	<i>50</i>



Table 6.2 - PM Peak 2026 with New Bridge and Thattham Crossing Closed

Location	Station Road (west of Swan Rbt)		Pipers Way (north of Pipers Lane)		Thattham Level Crossing / bridge		Chamberhouse Mill Lane (south of Level crossing)		Gables Way (north of Level crossing)	
	Northbound	Southbound	Eastbound	Westbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
2026 Reference case	254	359	473	596	524	705	524	705	244	86
Scenario 1 - 2026 with new Bridge and closure of Thattham Level Crossing	323	323	703	607	745	694	756	694	244	87
<i>Difference between Reference Case and Scenario 1</i>	<i>69</i>	<i>-36</i>	<i>230</i>	<i>11</i>	<i>221</i>	<i>-11</i>	<i>232</i>	<i>-11</i>	<i>0</i>	<i>1</i>
Scenario 1 - 2026 with new Bridge and closure of Thattham Level Crossing Plus Development trips	352	361	741	664	745	705	775	705	311	154
<i>Difference between Scenario 1 and Scenario 1+ Development</i>	<i>29</i>	<i>38</i>	<i>38</i>	<i>57</i>	<i>0</i>	<i>11</i>	<i>19</i>	<i>11</i>	<i>67</i>	<i>67</i>



- 6.7 From Tables 6.1 and 6.2 it can be seen that providing the new highway infrastructure, including a new bridge in replacement of Thatcham level crossing has little impact on traffic flows on Station Road and Gables Way nor the westbound / southbound trips on Pipers Way and Chamberhouse Mill Lane. There is, however, an increase in flows of some 220+ trips travelling northbound from the south up Chamberhouse Mill Lane over the new bridge and onto Piper Way in both peak hours. This indicates that removing the constraint of the level crossing increases flows from the south but has little impact on the flows to the north.
- 6.8 This suggests that providing a bridge does not attract significant additional flows through Thatcham, and is instead releasing suppressed demand from the south of Newbury and the surrounding local area due to the reduction in delays resulting from the removal of the existing level crossing from the model.
- 6.9 After adding the development trips, it can be seen that an additional 190 trips are added to the new bridge in the AM peak, but the impact on the rest of the study area is minimal as trips disperse across the network. In the PM peak the increase in trips as a result of develop trips is low in comparison to the model data for the network with the new infrastructure alone added.



7.0 SUMMARY AND CONCLUSION

7.1 Land at Rainsford Farm and at the former Paper Mill Site at Colthrop is being promoted as a mixed use sustainable urban extension at Thatcham, comprising new housing, school, local centre, recreational and local sports facilities. The site is approximately 36.5 hectares in area and currently comprises two separate land ownerships.

7.2 A number of options have been considered for providing access to the site, however following detailed assessments it is considered that providing an access to the west of the site, via Crookham Hill, Station Road and Pipers Lane, provides significant advantages to both existing users of the local highway network and to users of Colthrop Village:

For users of the existing highway network, the provision of an access to west of the site will:

- Relieve an existing traffic congestion hotspot;
- Allow the closure of an existing level crossing on a mainline railway line, in accordance with Central Government and Network Rail policy aims;
- Provide a free flow connection across the railway for pedestrians, cyclists and motor vehicles;
- Improve accessibility to Thatcham Railway Station by removing a significant volume of existing traffic from the station access.

For users of Colthrop Village the provision of an access to the west of the site will:

- Allow the provision of sustainable access for all modes of travel with connections to Thatcham station and existing bus services on Station Road and Pipers Way;
- Allow for existing bus services to be improved and extended into the development without impacting on the viability of services;
- Reinforce the connections with Thatcham town centre;
- Avoid the need for any existing traffic travelling between, Thatcham, the A4 and the A339 from being diverted through the proposed development.



- 7.3 The mainline railway crosses Station Road via a level crossing. On-site observations and assessment work undertaken on behalf of West Berkshire Council confirms that the operation of the level crossings represents a significant constraint on the operation of the local highway network.
- 7.4 The access strategy for the Colthrop Village proposal provides access from Crookham Hill, diverting the existing road that accesses the railway crossing through the site to a new bridge over the railway line connecting to Pipers Lane. A new roundabout would then be provided at the junction of Pipers Lane and Pipers Way, along with improvements and widening to Pipers Lane to provide footways connecting the site to the existing infrastructure on Crookham Hill and the northern section of Pipers Lane. Pedestrian access from the bridge to Pipers Lane, providing access to the railway station would also be provided. Drawing 5010.012 refers.
- 7.5 The existing level crossing could then be closed and the existing carriageway either side stopped up to allow access to the two station car parks, but not a through route
- 7.6 Drawing 5010.600 A illustrates the preliminary design for the proposed bridge in greater detail. The bridge will be constructed to fully accord with Network Rail and local highway design standards and will accommodate standard clearances to the recently installed electrification gantries.
- 7.7 The bridge has been designed to minimise the impact on adjacent land uses both during construction and operation as well as on existing utilities located within Pipers Lane.
- 7.8 A preliminary construction cost estimate has been prepared for the bridge by an experienced Civil Engineering Contractor (**Appendix 1** refers). The preliminary cost estimate only covers the operations required for the physical construction of the bridge but excludes land cost, utility diversion and protection costs, Network Rail access charges, any third party compensation and legal costs. Based on First quarter 2019 estimates, the preliminary cost estimate for the construction of the proposed bridge is £11,844,283.



- 7.9 Traffic assessments undertaken by West Berkshire Council, on behalf of the Consortium, suggest that providing the new bridge does not attract significant additional traffic flows through Thatcham. Instead it releases existing suppressed demand from the south of Newbury and the surrounding local area due to the reduction in delays resulting from the removal of the existing level crossing from the Council's traffic model.
- 7.10 Development generated trips will result in an additional 190 traffic movements across the new bridge in the AM peak, but the impact on the rest of the study area is minimal as trips disperse across the network. In the PM peak the increase in traffic movements as a result of development is low in comparison to the model data for the network with the new infrastructure alone added.
- 7.11 Taking the above into account, it is concluded that a sustainable and viable access strategy can be provided to serve the Colthrop Village proposal which can incorporate a new bridge to replace the level crossing at Thatcham station.



FIGURES



Appendix 1
Cost Estimates



COLTHORP VILLAGE – THATCHAM

PROPOSED RAIL BRIDGE CONSTRUCTION

BUDGET ESTIMATE

MARCH 2019

COLTHORP VILLAGE – THATCHAM

The attached budget estimate has been prepared in the absence of any other information from details contained upon Stuart Michael Associates Ltd concept drawing number 5010.600 dated February 2019 and is for the construction of a railway bridge spanning the live Great Western Railway line close to Thatcham Railway Station.

The rail bridge is intended to carry a 6 metre wide highway and 3 metre footway/cycleway across the twin overhead electrified Great Western Railway line and the adjacent Kennet and Avon canal.

It is intended for the bridge to have a span of 110 metres with a minimum height of 7 metres above the centre line of the twin rail tracks.

The 110 metre span deck is to comprise precast concrete U beams with a reinforced insitu concrete deck and parapets carrying the 6 metre wide highway and 3 m wide footway/cycleway. An H4A 1.8 m high bridge parapet safety barrier is to be affixed to both the Eastern and Western parapets.

3 No. piled reinforced insitu concrete under piers will carry the bridge deck which will be seated on the Northern and Southern piled reinforced insitu concrete abutments.

There are to be two approach embankments comprising the Northern embankment which is to be a precast concrete panel faced reinforced earth system embankment and a Southern approach embankment which is to be a 1 in 3 earth embankment for which is has assumed suitable material will need to be imported.

Prior to commencement of bridgeworks the existing northern watercourse will have to be diverted into a 3.00 x 2.00 metre precast concrete box culvert followed by the construction of a temporary highway diversion.

In preparing this budget it has been assumed that works adjacent and above the live rail track will be restricted to night time and weekend working in order to cause minimal disruption to the rail network.

COLTHORP VILLAGE – THATCHAM
PROPOSED RAIL BRIDGE CONSTRUCTION
BUDGET ESTIMATE: SUMMARY

A.	Principal Contractors Preliminaries – provision of necessary site supervisory staff, accommodation and welfare, security, traffic management works, head office overheads, etc.	2,678,088.00
B.	Construction of Southern Embankment inclusive of provision of imported fills, drainage, parapets and highway construction – Refer Appendix No. 1.	2,959,000.00
C.	Construction of Northern Embankment inclusive of pre-cast concrete panel faced reinforced wall system, imported fills, drainage, parapets and highway construction – Refer Appendix No. 2	1,258,565.00
D.	Construction of railway overbridge inclusive of the north and south abutments, 3 No. intermediate piers, bridge deck, parapets, deck drainage and highway works – Refer Appendix No. 3	4,197,357.00
E.	Diversion of northern side existing water course, construction of box culvert and construction of temporary access road	<u>751,273.00</u>
	<u>TOTAL</u>	<u>£11,844,283.00</u>

COLTHORP VILLAGE – THATCHAM
PROPOSED RAIL BRIDGE CONSTRUCTION
BUDGET ESTIMATE

APPENDICES

COLTHORP VILLAGE – THATCHAM
PROPOSED RAIL BRIDGE CONSTRUCTION
BUDGET ESTIMATE

- APPENDIX NO. 1** : Construction of Southern Embankment
- APPENDIX NO. 2** : Construction of Northern Embankment
- APPENDIX NO. 3** : Construction of Rail Overbridge

COLTHORP VILLAGE – THATCHAM
PROPOSED RAIL BRIDGE CONSTRUCTION
BUDGET ESTIMATE

APPENDIX NO. 1

B. Construction of Southern Embankment

i.	embankment starter layer	824,500.00
ii.	construction of embankment with imported suitable material	1,480,700.00
iii.	highway works inclusive of highway drainage, embankment toe drainage, surfacing and installation of H4A 1.8 m high safety barrier and run off/on vehicle restraint system	503,800.00
iv.	temporary works comprising construction of temporary haul road, hard standings, wheel washing facilities, etc.	150,000.00

CARRIED TO COLLECTION **£2,959,000.00**

COLTHORP VILLAGE – THATCHAM
PROPOSED RAIL BRIDGE CONSTRUCTION
BUDGET ESTIMATE

APPENDIX NO. 2

C. Construction of Northern Embankment

i.	pre-cast concrete panel faced reinforced earth wall system	882,365.000
ii.	highway works inclusive of highway drainage, , surfacing and installation of H4A 1.8 m high safety barrier and run on/off vehicle restraint system	283,800.00
iii.	temporary works comprising hard standings, crane platform, scaffolding, etc.	<u>92,400.00</u>
	CARRIED TO COLLECTION	<u>£1,258,565.00</u>

COLTHORP VILLAGE – THATCHAM
PROPOSED RAIL BRIDGE CONSTRUCTION
BUDGET ESTIMATE

APPENDIX NO. 3

D. Construction of Rail Overbridge

1.	Span – 110 metres	
2.	Width – 12 metres	
i.	construction of 3 No. piled reinforced insitu concrete piers	1,029,736.00
ii.	construction of 2 No. piled reinforced insitu concrete abutments	705,320.00
iii.	construction of 110 lin metre bridge deck complete with highway surfacing, deck joints, parapets and drainage	1,089,735.00
iv.	temporary works comprising piling platforms, temporary access roads, crane platforms, hard standings, falseworks, scaffolding, etc.	<u>1,372,566.00</u>

CARRIED TO COLLECTION £4,197,357.00



DRAWINGS