

Appendix E – RTS Section B - Option 1 - Hythe Level Crossing - B355363A-RTS-HGN-SB-RP-001



RTS Section B - Option 1

Hythe Level Crossing

July 2019

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1 Introduction

Jacobs have been commissioned by Essex County Council (ECC) to investigate the feasibility of providing a new Rapid Transit System (RTS) between the proposed Tendering Colchester Border Garden Community TCBGC (part of North Essex Garden Community), Colchester Town Centre, and the existing Colchester Park and Ride site north of the A12 Junction 27.

The RTS is part of a Housing Infrastructure Funding (HIF) bid that also included A120/ A133 Link Road. The bid was submitted by ECC in March 2019.

The RTS route comprises 4 Sections (Section A, B, C & D).

Section A runs between Colchester Park and Ride terminal north A12 Junction 27 and North Hill, whilst Section B runs between North Hill and University of Essex through Colchester Town Centre. Section C covers the area between Greenstead Roundabout and the proposed North Essex Garden Community.

This note considers the feasibility of Section B Option 1. It looks at the infrastructure along the route and the existing constraints. Based on the RTS requirements and objectives it assesses the practicality of this option.

An overview of all 5 options for Section B have been provided in Appendix A – Stage 1 Section B Options Drawing– B355363A-RTS-HGN-SB-SK-001.

2 Overview

2.1 Route Description

The route option is predominantly urban single carriageway, with street-lighting and a 30mph speed limit throughout.

A typical cross section for this option has been provided in Appendix B – Section B Option 1 Barrack Street Cross Section Drawing– B355363A-RTS-HGN-SB-SK-002

The proposed route for Option 1 is 4.3km (2.66 miles) long and requires the construction of new carriageway to provide an uninterrupted route.

The route runs from Colchester Town Centre to Essex University via A134 Magdalen Street/Barrack Street. The route crosses both the River Colne and the railway line adjacent to the existing dedicated Bus Lane at Hythe Station Road. Due to the presence of the level crossing significant delays will be encountered for RTS vehicles. The frequency of the level crossing's closures increases during the peak hours when RTS services would likely also be more frequent. At this location additional infrastructure would be required to facilitate the RTS:

- A revised crossing point at Elmstead Road/Colne Causeway/Tesco pedestrian crossing to allow RTS vehicles to access Elmstead Road directly from Greenstead Road.
- A means of connecting to Section C, by a new junction or access to suit the proposed movements.

The North Hill, High Street and Queen Street elements of this route are already subject to dedicated bus facilities, these will be optimised for RTS if required.

The route follows the High Street, Queen St and the St Botolphs roundabout, before heading east along the A134 Magdalen Street/Barrack Street. This part of the route is expected to suffer the most significant congestion, as the route directly passes the Brook Street/Barrack Street junction, a very busy junction which leads directly to one of the few places vehicles can cross the railway/River Colne. This junction is regularly congested on all approaches, with vehicles needing to wait for multiple cycles of the signals at peak times in order to pass cross the junction.

A dedicated Rapid Transit System facility (similar to a bus gate) may be considered for the A134 in this location, however, the impact on local roads would be severe.

There is also considerable on-road parking along both Magdalen Street and Barrack Street, and both have a significant number of residential side-roads that require access.

The route then heads east along Barrack Street and through the existing Bus Lane at Hythe Hill, on to Hythe Station Road to cross both the River Colne and the railway via an existing Bus Lane. The route. It then turns right on to Greenstead Road heading towards the University. This is where Option 1 passes closest to the Hythe rail station – it is envisaged that new/upgraded Rapid Transit System RTS facilities will be required here to pick up/set down passengers for the station.

A proposed Rapid Transit System RTS crossing point at the existing controlled crossing from Elmstead Road to Greenstead Road will need to be constructed.

The route then connects to Section C (exact route and tie-in location to be determined).

2.2 Constraints

The following are constraints that need to be considered and overcome when assessing the feasibility of the option.

There are few constraints to North Hill, the High Street and Queen Street. North Hill (southbound) is a Bus Lane enforced with cameras. The eastbound junction from the High Street to Queen Street is an existing Bus Lane, also enforced by cameras.

Consideration shall be given to a part-time peak hour RTS gate at the western end of the High St to restrict eastbound High St traffic to RTS vehicles (and authorised vehicles) only. All town centre routes can be assumed to have heavy pedestrian use.

Access to the George Hotel (accessed solely from the High Street) would need to be maintained, possibly by means of a short (25-30m) 2-way section of High Street being created between St Nicholas Street and Maidenburgh Street. It is envisaged that the removal of redundant parking spaces from the High Street will create sufficient space for to facilitate 2-way running in this location.

There is however the potential for this route to be abused by people trying to get to the High Street. Parking and loading bans are envisaged to be required.

The option then runs south along Queen Street and then left at St Botolphs Roundabout, heading east. (Westbound RTS vehicles will travel via Osborne Street and Head Street, heading back towards North Hill (northbound) and onward to the Colchester Park and Ride facility. There is an existing westbound Bus Gate at the western end of Osborne Street.)

Once on the A134, the route travels directly east-west, linking with Hythe Hill. The route has to pass the Brook Street/Barrack Street junction. This junction suffers congestion in both the morning and evening peaks periods, in all directions. It is not deemed feasible to restrict traffic to solely Rapid Transit System vehicles in this location due to an abundance of residential properties and side streets.

The route then crosses a level crossing at Hythe Station Road, this level crossing serves the Colchester to Walton branch line. The crossing serves approximately 100 trains per day, which would lead to a high chance of the RTS being delayed. Also there are more trains at peak times when most RTS patrons are expected.

The route then turns right to travel south along Greenstead Road towards the Greenstead Roundabout. Greenstead Road in this location is wide and open and has residential properties along one side, however this is not anticipated to be an issue.

Immediately before the roundabout, the route proposals continue east, directly connecting with the parking/turning head in Elmstead Road. (This follows the historic route of the road, prior to the diversion to accommodate the construction of the Greenstead Roundabout.) This presents a number of associated constraints and health and safety risks:

- The existing Toucan crossing would need to be removed and replaced with a signalised junction to allow RTS vehicles to cross the Colne Causeway.
- A pedestrian phase would need to be included within the signal timings.
- Pedestrian facilities would need sufficient clearance to be feasible, attractive and safe.
- There are significant utilities in the vicinity which would need diverting and/or protecting.
- There are retaining features surrounding Tesco, which is built in a natural bowl. These would need to be protected from vibration and impact during construction, and would need careful design to ensure there are no conflicts.
- Amendments would be required to Greenstead Roundabout to ensure there is suitable visibility to the signals and sufficient stacking space for queuing traffic.
- Careful consideration would need to be given to the arrangement of the proposed roads with regard to the remaining existing roads.
- The existing turning/parking head at the western end of Elmstead Road shall be removed, therefore a replacement parking area and turning head will be required.
- It is anticipated that residents on Elmstead Road will resist the Rapid Transit System/pedestrian crossing amendments.

Once east of Elmstead Road, it is unknown at this stage whether the route will re-join the A133 or whether it will follow Capon Road and then Boundary Road, around the south of the University, before either re-joining or crossing the A133 to the north-east of the University.

It is not anticipated that there will be any significant statutory undertakers' diversions, except to the proposed link between Greenstead Road and Elmstead Road. Substantial utility protection works are

expected in this vicinity. Diversion does not appear to be a suitable solution due to adjacent land use in each location.

Significant local resistance is anticipated for the amendments to the crossing at Elmstead Road. Residents will see an increase in traffic, and their parking areas and frontages will be affected. Queuing traffic may have a negative impact on the already-congested roundabout at Tesco. Given the existing topography, any amendments here are not feasible.

3 Conclusion

The route uses residential roads which cannot easily be dedicated to RTS vehicles. There is considerable on-street parking that cannot easily be relocated, and the residential nature of the road is not ideal for a RTS.

The existing congestion on Magdalen Street and Barrack Street would struggle to find alternative routes and it is envisaged that the local residential roads would be used by people trying to find a “rat-run” or other means of diverting past the RTS restrictions. There are substantial number of businesses along these routes which would also require access for deliveries, customers, workers etc.

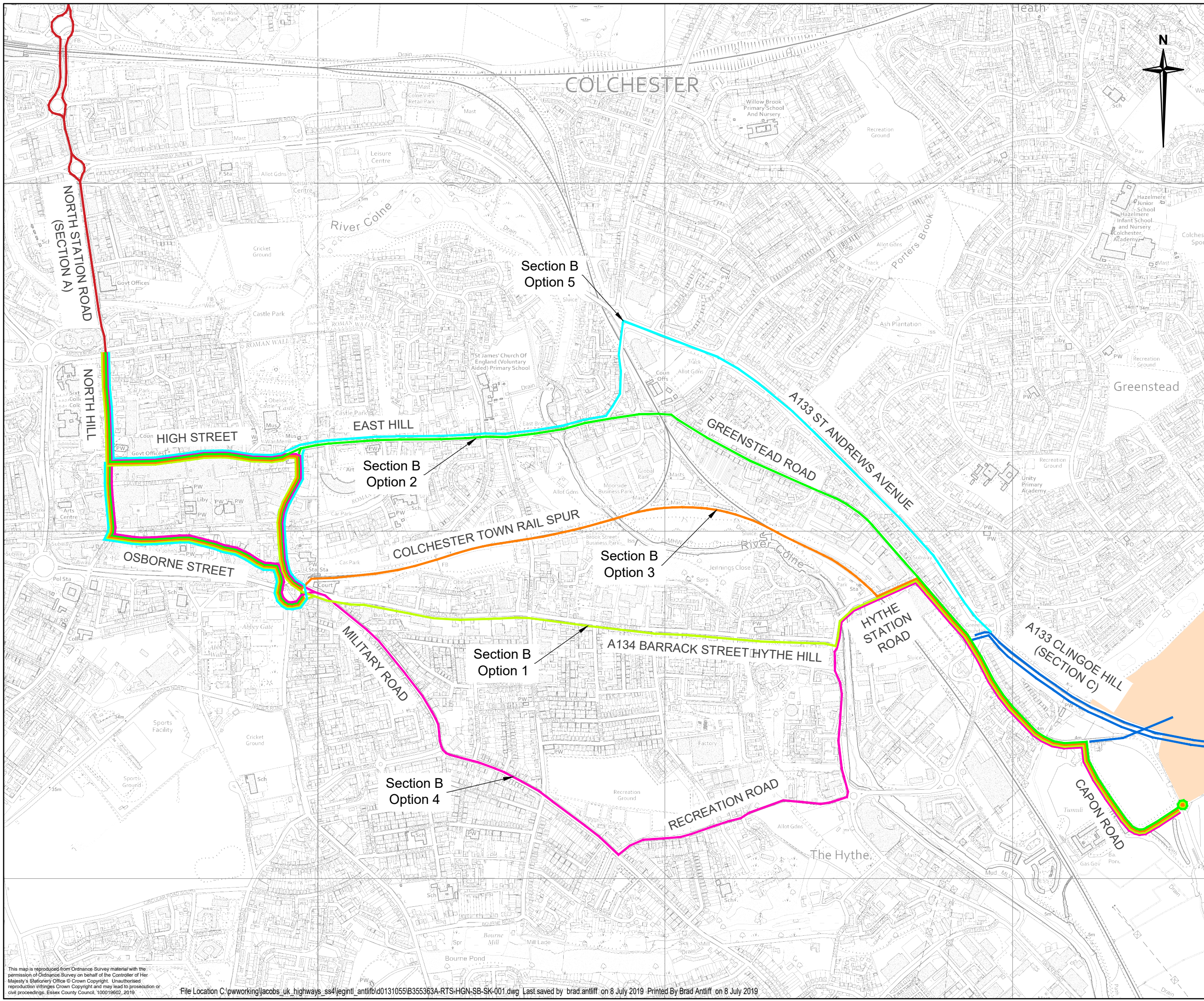
The Brook Street/Wimpole Road junction is very tight for vehicles heading north on Wimpole Road and then west on Magdalen Street, this movement is not suitable for large/long vehicles. This would mean any commercial vehicles servicing the businesses here would be subject to a significant diversion; this is very likely to generate considerable objections and resistance from residents and business owners.

The presence of the level crossing will also affect the reliability of the service, and this delay will be magnified at peak times, when additional train services run. There does not appear to be a viable engineering solution to this issue.

Provision of a new crossing point from Greenstead Road to Elmstead Road will generate considerable congestion and objection. Careful design will be needed to keep any knock-on congestion to Greenstead Roundabout to a minimum. Routeing across Colne Causeway will have to be carefully designed. Tesco is built at a much lower level than Greenstead Road/Roundabout, and there are retaining features that will need to be protected (or potentially refurbished/improved) during construction. This link section may require the removal of the southern-most entry to Greenstead Roundabout from Greenstead Road. This would have a knock-on effect of sending all traffic wishing to use Greenstead Roundabout west along Greenstead Road and then north to the A133 St Andrews Avenue.

Despite these issues the route is viable with regards to implementation, however, the limited opportunity for key infrastructure that will improve the RTS journey time and reliability will likely discount this option. It is recommended that this route is taken forward to the next design stage to explore whether it can meet the goals of the RTS.

Appendix A – Stage 1 Section B Options Drawing– B355363A-RTS-HGN-SB-SK-001



Notes

1. Do not scale.
2. Indicative layouts based on Ordnance Survey data only. Topographical surveys to be undertaken at a later design stage.
3. Routes and options shown are an overview only, with no certainty as to feasibility of implementation. Therefore this plan is not for public distribution.

Key


- Section A
- Section B Option 1
- Section B Option 2
- Section B Option 3
- Section B Option 4
- Section B Option 5
- Section C



Rev	Date	Description of revision	Drawn	Checked	Reviewed	Approved

DRAWING STATUS

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NORTH ESSEX RAPID TRANSIT SYSTEM

STAGE 1 SECTION B OPTIONS

DESIGNED	DRAWN	CHECKED	REVIEWED	APPROVED
PFW	PFW	PJN	PJN	MM
DATE	DATE	DATE	DATE	DATE
JUL 19	JUL 19	JUL 19	JUL 19	JUL 19

DRAWING UNITS U.N.O. SCALE AT A3 (420x297mm)
DIMENSIONS IN MILLIMETRES 1:10,000
LEVELS IN METRES

DRAWING No. **B355363A-RTS-HGN-SB-SK-001** REV. -








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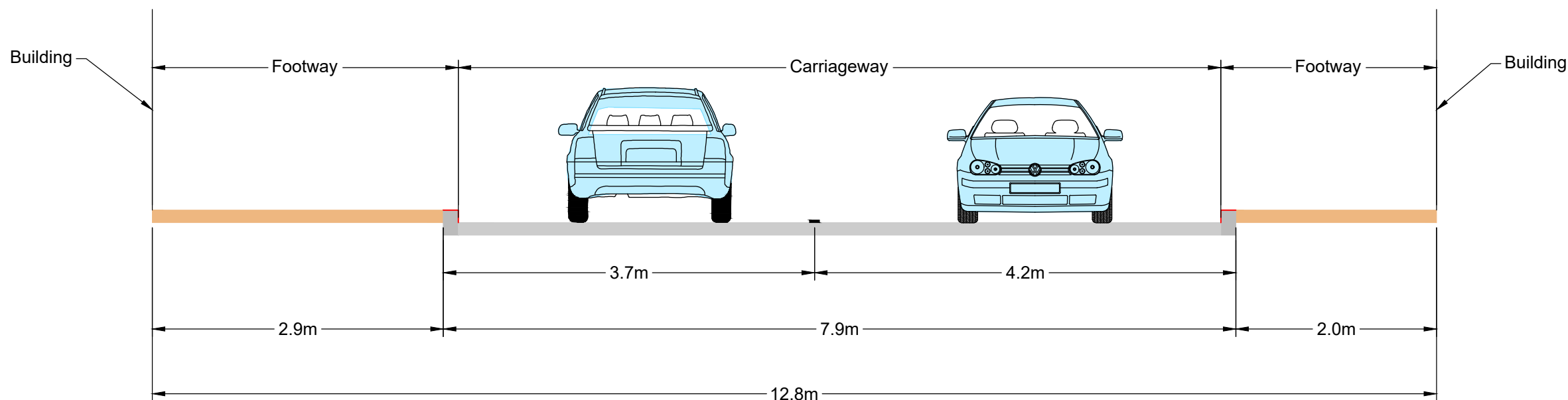
Appendix B – Section B Option 1 Barrack Street Cross Section Drawing– B355363A-RTS-HGN-SB-SK-002

Notes

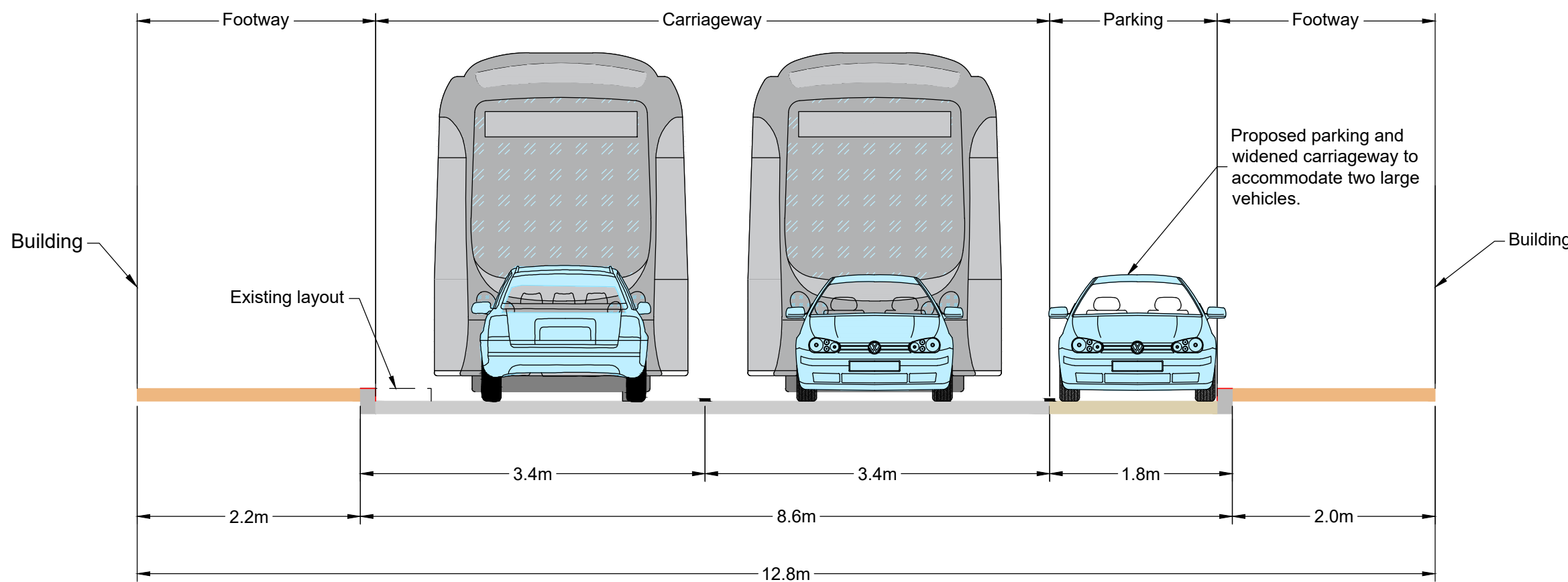
1. Do not scale.

Key

-  Carriageway
-  Footway
-  Parking
-  Road Markings
-  Kerb



Existing



Proposed

Rev.	Date	Description of revision	Drawn	Checked	Reviewed	Approved

DRAWING STATUS
FOR INFORMATION



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SCHEME TITLE
NORTH ESSEX RAPID TRANSIT SYSTEM

DRAWING TITLE
**SECTION B OPTION 1
BARRACK ST
CROSS SECTIONS**

DESIGNED	DRAWN	CHECKED	REVIEWED	APPROVED
MC	MC	BA	PN	PN
DATE	DATE	DATE	DATE	DATE
JUN 19	JUN 19	JUN 19	JUN 19	JUN 19

DRAWING UNITS U.N.O. SCALE AT A3 (420x297mm)
DIMENSIONS IN MILLIMETRES
LEVELS IN METRES
N.T.S

DRAWING No. **B355363A-RTS-HGN-SB-SK-002** REV. -



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