Technical Note

Project:	M3 Junction 12 Improvements		
Subject:	Allbrook Way Widening		
Author:	Stephanie Burgess		
Date:	20/05/2019	Project No.:	5163169
Atkins No.:	5163169-ATK-RPT-0002		
Distribution:	Graham Tuck Emma Barnett	Representing:	Eastleigh Borough Council Adams Hendry

Document history

Revision	Purpose description	Origin-ated	Checked	Reviewed	Authorised	Date
Rev 1.0	For Information	SB	RJ	SB	SB	20/05/2019

Client signoff

Client	Eastleigh Borough Council
Project	M3 Junction 12 Improvements
Project No.	5163169
Client signature / date	

Background:

The Eastleigh Borough Council Emerging Local Plan outlines the future development required within the borough up to 2036, potential development sites and potential infrastructure to support this development. The Local Plan supporting evidence includes a transport modelling study, undertaken by SYSTRA, which identifies locations where highway improvements will be required to provide additional network capacity. Atkins has been commissioned by Eastleigh Borough Council, to assess the highway network capacity around Junction 12 of the M3 and to ascertain what improvements are required to mitigate the likely impact of additional traffic resulting from the proposed Local Plan development. A Summary options report was undertaken in August 2018 identifying improvements at Junction 12 and the local highway network in the immediate vicinity of the J12. One of the improvements identified was the potential need for widening A335 Allbrook Way to provide two lanes southbound between J12 and the proposed Allbrook Hill Relief Road to the south.

Scope:

This Technical note outlines the work undertaken in reviewing the concept for widening Allbrook Way to provide two lanes southbound. The scope of work includes:

- Concept Design for 2+1 lanes on Allbrook Way
- Design Assumptions
- High level cost estimate
- Ongoing risks

Concept Design:

Allbrook Way is currently a wide single carriageway with 1m hard strips. There are two existing parking laybys - one northbound and one southbound. The proposed alterations to Allbrook Way have been undertaken to provide a wide single 2 +1 carriageway as outlined in TD 70/08. The design has been developed to incorporate both laybys into the new carriageway and no new laybys are proposed.

The proposed design ties in with the proposed enlarged roundabout at Junction 12 of the M3. It is assumed that the widened carriageway will link via a new junction with the proposed Allbrook Hill Relief Road. This Allbrook Hill Relief Road Junction and the Relief Road have not been designed as part of this work.

The proposed alignment avoids the Site of Importance for Nature Conservation (SINC) areas and land identified by Hampshire County Council as landscaping mitigation. The widening will maintain the existing route of the Bridleway on Boyatt Lane and footpath south of Allbrook Way.

Drawings 5163169-ATK-HGN-0000-DR-CH-000007 and 000008 provide the concept design for the widened carriageway and detail the SINC areas and land designated for Landscaping mitigation. Drawings 5163169-ATK-HGN-0000-DR-CH-000001 and 000002 show the land ownership and Highway boundary in the vicinity of Allbrook Way.

Design Assumptions:

- Wide single 2+1 carriageway (two lanes southbound, one lane northbound) designed in accordance with TD 70/08.
- Laybys removed and incorporated into proposed carriageway.
- Additional Land outside of the highway boundary will not be required (except in the vicinity of the Boyatt Lane overbridge where a small section of land, owned by Highway England, outside of the highway boundary is required to widen the bridge).
- The existing embankment slopes can be re-profiled to accommodate the widened carriageway and retaining walls will not be required.
- Double white lines along the entire length of carriageway to prevent overtaking.
- No additional junctions between start and end points of the new widened carriageway.
- The bridge over Boyatt Lane is assumed to be a box structure and the proposed bridge widening would connect to this to provide a 3m span over the footway/cycleway.

High Level Cost Estimate:

A high-level cost estimate based on the concept design has been prepared. This estimate includes the works associated with the carriageway widening and associated bridge widening over Boyatt Lane; it excludes all costs associated with the junction with the proposed Allbrook Hill Relief Road. The high-level cost estimate is based on the following assumptions:

- Construction date of 2021 and cost increased to allow for inflation.
- Preliminaries cost based on 40% of construction cost.
- Landscaping costs of 1%
- Statutory Undertakers diversions of 5%
- Design and supervision costs of 20%
- Risk/contingency of 20%
- Optimum bias of 44%

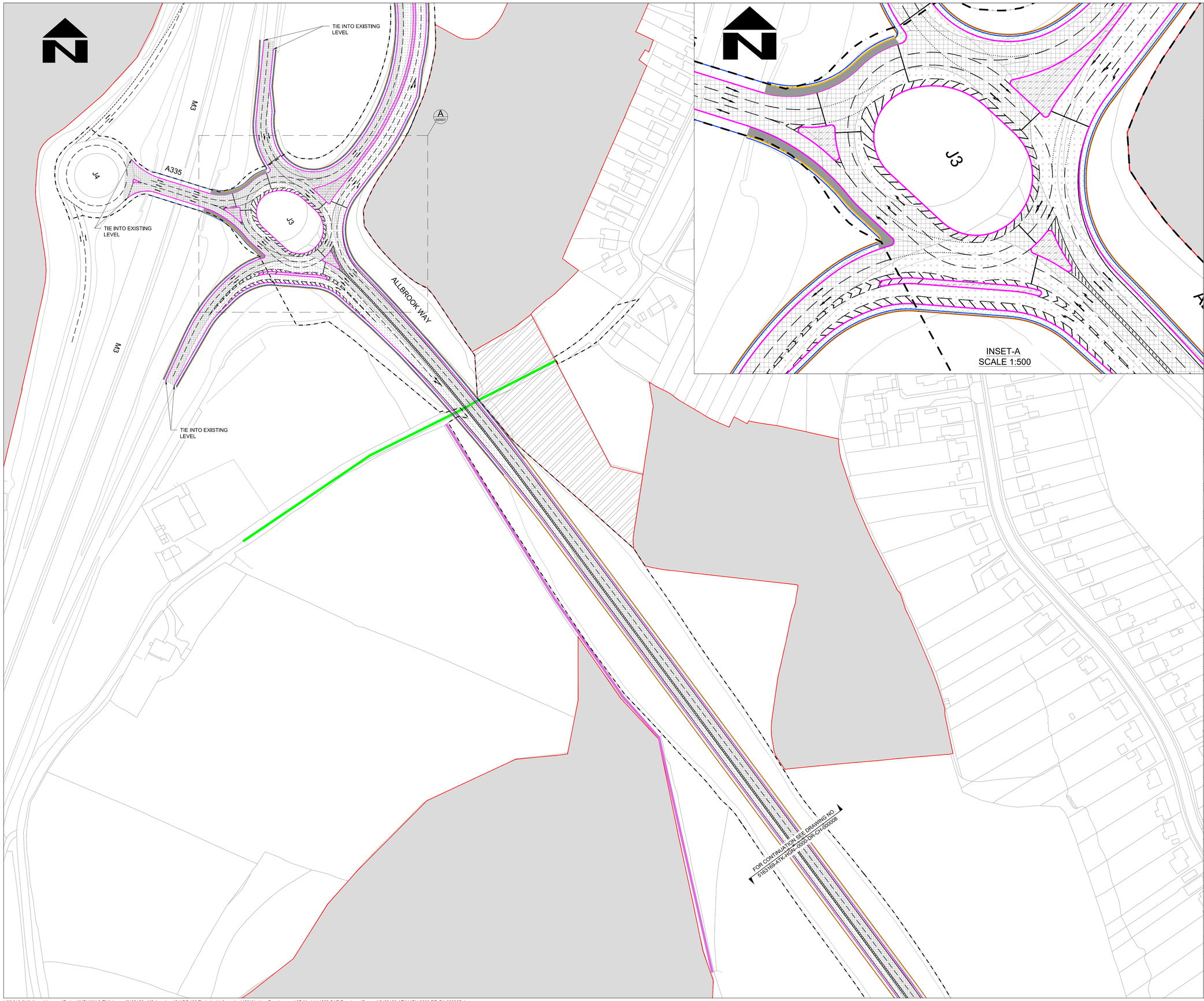
Using the assumption outlined above, the estimated high-level cost for the carriageway and bridge widening is £4,534,000.

Ongoing Risks:

- High-level concept design based on OS mapping. Future design work will require detailed surveys and testing including topographic surveys, drainage surveys, CBR testing, statutory undertaker's apparatus surveys etc.
- The existing overbridge at Boyatt Lane has not been assessed but it is assumed that it is suitable to widen the carriageway using a similar construction to the existing structure.
- The verge width meets the minimum requirements for the road type. The 3D model at later design stages will determine if wider verges are required to meet visibility requirements. This 3D model will also provide a more accurate estimate for the embankments and earthworks.
- The carriageway may require re-profiling so that crown is within double-wide lines. This has not been allowed for in the cost estimate.
- Extent of Statutory Undertakers diversions is unknown.
- The detailed alignment of and junction with the proposed Allbrook Hill Relief Road is not known. There is a risk the alignment of this Relief Road will require further work to Allbrook Way.

Summary:

The proposed widening to accommodate an additional lane southbound on Allbrook Way can be provided within land owned by Highways England. Based on the high-level design undertaken, the construction would not require significant earthworks. The existing bridge over Boyatt Lane can be widened assuming the existing box structure construction. The cost of the work is estimated at £4,534,000. However, the design and cost estimate are based on minimal input data and further survey and design work would be required to develop the scheme and provide more accurate construction costs.



NOTES

1. THIS SKETCH IS INTENDED AS A PRELIMINARY OPTION DESIGN AND IS NOT FOR CONSTRUCTION PURPOSES.
2. ALL DIMENSIONS ARE IN METRES.
3. PROPOSED SIGNAGE AND MARKINGS ARE SHOWN INDICATIVELY.
4. STREET LIGHTING AND DRAINAGE DESIGN TO BE UNDERTAKEN AT THE DETAILED DESIGN STAGE.
5. HIGHWAY BOUNDARY SHOWN IN THE SKETCH IS EXTRACTED FROM THE AVAILABLE INFORMATION & SAME SHOULD BE VERIFIED AT SITE.
6. ANY PROPOSED IMPROVEMENT BEYOND HIGHWAY LAND BOUNDARY IS SUBJECTED TO THE CONSENT OF LAND OWNER AND APPROVAL OF OVERSEEING ORGANIZATION.

KEY

- HIGHWAY BOUNDARY
- PROPOSED KERB EDGE
- PROPOSED EDGING
- PROPOSED VERGE EDGE
- PROPOSED VRS (INDICATIVE)
- PUBLIC BRIDLEWAY
- PUBLIC FOOTPATH
- PROPOSED FOOTWAY
- PROPOSED VERGE
- EXISTING PAVED AREA TO BE OVERLAID/ INLAID / PLANED OUT / RECONSTRUCTED
- PROPOSED CARRIAGEWAY WIDENING
- PROPOSED SPLITTER ISLAND / CENTRAL RESERVE CONSTRUCTION BY PERFORATING EXISTING PAVEMENT / SOFT LANDSCAPE / FOOTWAY
- LAND HELD FOR MITIGATION PURPOSES (LANDSCAPING)
- SINC BOUNDARY

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

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

Construction
None

Maintenance / Cleaning
None

Use
None

Decommissioning / Demolition
None

Rev	Drawn / Des	Checked	Approved	Date
P01	SA / SG	RJ	AC	22.04.2019

First Issue

Description

Drawing Status: Work in Progress

Suitability: S0

ATKINS
County Gate, County Way
Trowbridge, Wiltshire England
BA14 7FJ
United Kingdom
Tel: +44 (0)1225 730360
Fax: +44 (0)
www.atkinsglobal.com

Client: EASTLEIGH BOROUGH COUNCIL

Project Title: M3 J12 Concept Design

Drawing Title: GENERAL ARRANGEMENT ALLBROOK WAY (SHEET 1 OF 2)

Scale	Designed / Drawn	Checked	Approved	Authorised
1:1000	SG / SA	RJ	AC	--
Original Size	**Date**	**Date**	**Date**	**Date**
A1	22.04.2019	22.04.2019	22.04.2019	--

Drawing Number: 5163169-ATK-HGN-0000-DR-CH-000007
(Project | Originator | Volume | Location | Type | Role | Number)

Job No.: 5163169

Revision: P01

HCC CAD FILE: \\wsatkins.com\Project\NGUA\H & T\Highways\5163169_ M3 Junction 12 HCC\400 Technical Information\403 Working Drawings and 3D Models\4032 CAD\Drawings (Current)\5163169-ATK-HGN-0000-DR-CH-000007.dwg

NOTES

1. THIS SKETCH IS INTENDED AS A PRELIMINARY OPTION DESIGN AND IS NOT FOR CONSTRUCTION PURPOSES.
2. ALL DIMENSIONS ARE IN METRES.
3. PROPOSED SIGNAGE AND MARKINGS ARE SHOWN INDICATIVELY.
4. STREET LIGHTING AND DRAINAGE DESIGN TO BE UNDERTAKEN AT THE DETAILED DESIGN STAGE.
5. HIGHWAY BOUNDARY SHOWN IN THE SKETCH IS EXTRACTED FROM THE AVAILABLE INFORMATION & SAME SHOULD BE VERIFIED AT SITE.
6. ANY PROPOSED IMPROVEMENT BEYOND HIGHWAY LAND BOUNDARY IS SUBJECTED TO THE CONSENT OF LAND OWNER AND APPROVAL OF OVERSEEING ORGANIZATION.

0 5 10 20 30 40 50 100

KEY

- HIGHWAY BOUNDARY
- PROPOSED KERB EDGE
- PROPOSED EDGING
- PROPOSED VERGE EDGE
- PROPOSED VRS (INDICATIVE)
- PUBLIC BRIDLEWAY
- PUBLIC FOOTPATH
- PROPOSED FOOTWAY
- PROPOSED VERGE
- EXISTING PAVED AREA TO BE OVERLAID/ INLAID / PLANED OUT / RECONSTRUCTED
- PROPOSED CARRIAGEWAY WIDENING
- PROPOSED SPLITTER ISLAND / CENTRAL RESERVE CONSTRUCTION BY PERFORATING EXISTING PAVEMENT / SOFT LANDSCAPE / FOOTWAY
- LAND HELD FOR MITIGATION PURPOSES (LANDSCAPING)
- SINC BOUNDARY

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

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

Construction
None

Maintenance / Cleaning
None

Use
None

Decommissioning / Demolition
None

Rev	Drawn / Des	Checked	Approved	Date
P01	SA / SG	RJ	AC	22.04.2019

First Issue

Description

Drawing Status: Work in Progress

Suitability: S0

ATKINS
County Gate, County Way
Trowbridge, Wiltshire England
BA14 7FJ
United Kingdom

Tel: +44 (0)1225 730360
Fax: +44 (0)
www.atkinsglobal.com

Client: EASTLEIGH BOROUGH COUNCIL

Project Title: M3 J12 Concept Design

Drawing Title: GENERAL ARRANGEMENT ALLBROOK WAY (SHEET 2 OF 2)

Scale	Designed / Drawn	Checked	Approved	Authorised
1:1000	SG / SA	RJ	AC	--
Original Size	**Date**	**Date**	**Date**	**Date**
A1	22.04.2019	22.04.2019	22.04.2019	--

Drawing Number: 5163169-ATK-HGN-0000-DR-CH-000008
(Project | Originator | Volume | Location | Type | Role | Number)

Job No. 5163169

Revision P01

HCC CAD FILE: \\wsatkins.com\Project\INGUA\H & T\Highways\5163169_ M3 Junction 12 HCC\400 Technical Information\403 Working Drawings and 3D Models\4032 CAD\Drawings (Current)\5163169-ATK-HGN-0000-DR-CH-000008.dwg

NOTES

1. THIS SKETCH IS INTENDED AS A PRELIMINARY OPTION DESIGN AND IS NOT FOR CONSTRUCTION PURPOSES.
2. ALL DIMENSIONS ARE IN METRES.
3. HIGHWAY BOUNDARY SHOWN IN THE SKETCH IS EXTRACTED FROM THE AVAILABLE INFORMATION & SAME SHOULD BE VERIFIED AT SITE.

0 5 10 20 30 40 50 100

KEY

HIGHWAY BOUNDARY

HIGHWAY ENGLAND ASSUMED OWNERSHIP

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

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

Construction
None

Maintenance / Cleaning
None

Use
None

Decommissioning / Demolition
None

P01	SA / SG	RJ	AC	26.04.2019
First Issue				
Rev	Drawn / Des	Checked	Approved	Date

Description

Drawing Status: Work in Progress

Suitability: S0

ATKINS
County Gate, County Way
Trowbridge, Wiltshire England
BA14 7FJ
United Kingdom

Tel: +44 (0)1225 730360
Fax: +44 (0)
www.atkinsglobal.com

Client: EASTLEIGH BOROUGH COUNCIL

Project Title: M3 J12 Concept Design

Drawing Title: HIGHWAY OWNERSHIP DETAILS ALLBROOK WAY (SHEET 1 OF 2)

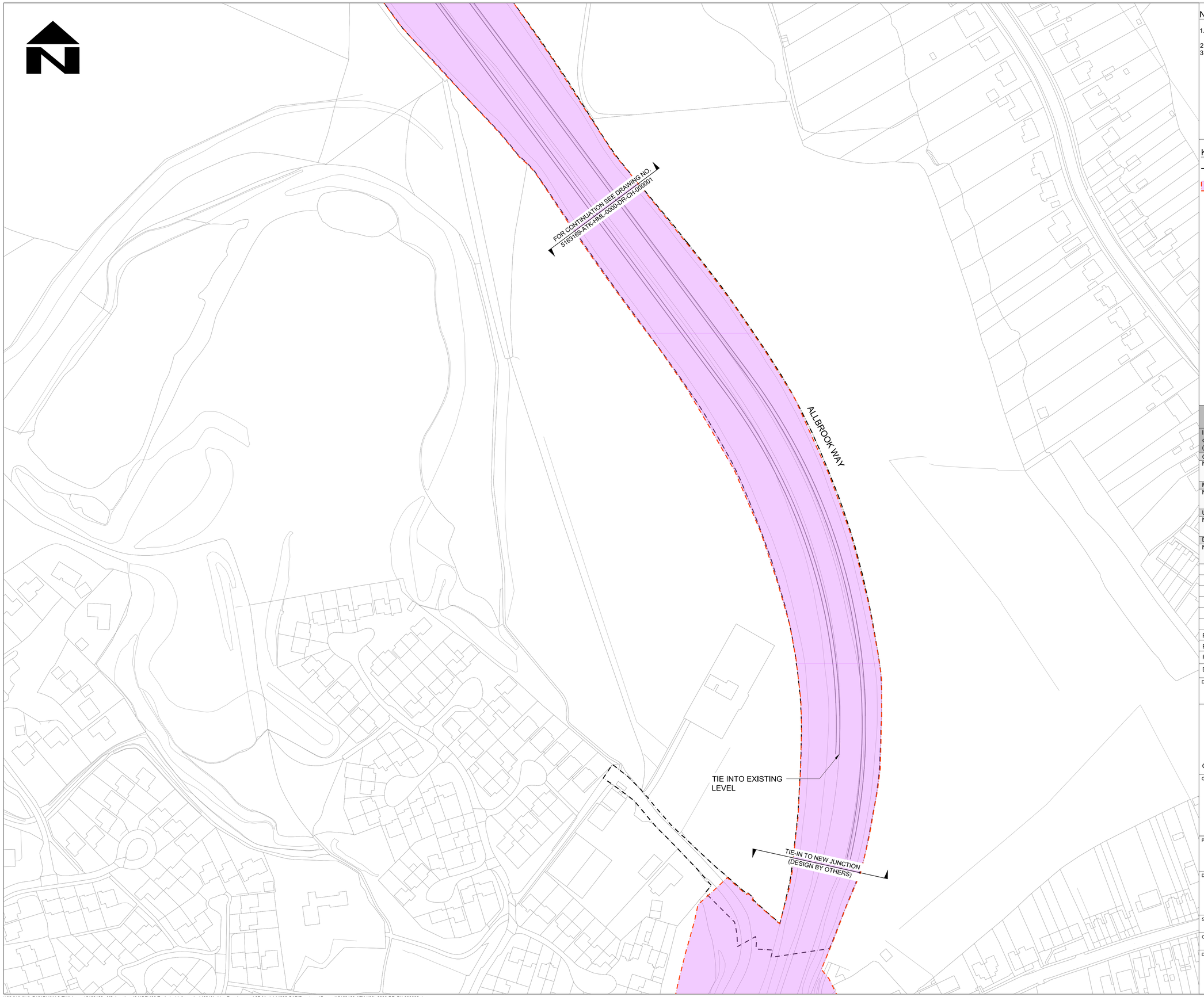
Scale	Designed / Drawn	Checked	Approved	Authorised
1:1000	SG / SA	RJ	AC	--
Original Size	**Date**	**Date**	**Date**	**Date**
A1	26.04.2019	26.04.2019	26.04.2019	--

Drawing Number: Project | Originator | Volume | Location | Type | Role | Number
5163169-ATK-HML-0000-DR-CH-000001

Job No. 5163169

Revision P01

HCC CAD FILE: P:\INGUA\H & T\Highways\5163169_ M3 Junction 12 HCC\400 Technical Information\403 Working Drawings and 3D Models\4032 CAD\Drawings (Current)\5163169-ATK-HML-0000-DR-CH-000001.dwg



NOTES

1. THIS SKETCH IS INTENDED AS A PRELIMINARY OPTION DESIGN AND IS NOT FOR CONSTRUCTION PURPOSES.
2. ALL DIMENSIONS ARE IN METRES.
3. HIGHWAY BOUNDARY SHOWN IN THE SKETCH IS EXTRACTED FROM THE AVAILABLE INFORMATION & SAME SHOULD BE VERIFIED AT SITE.

0 5 10 20 30 40 50 100

KEY

HIGHWAY BOUNDARY

HIGHWAY ENGLAND ASSUMED OWNERSHIP

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

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

Construction
None

Maintenance / Cleaning
None

Use
None

Decommissioning / Demolition
None

Rev	Drawn / Des	Checked	Approved	Date
P01	SA / SG	RJ	AC	26.04.2019

First Issue

Description

Drawing Status: Work in Progress

Suitability: S0

ATKINS
County Gate, County Way
Trowbridge, Wiltshire England
BA14 7FJ
United Kingdom

Tel: +44 (0)1225 730360
Fax: +44 (0)
www.atkinsglobal.com

Client: EASTLEIGH BOROUGH COUNCIL

Project Title: M3 J12 Concept Design

Drawing Title: HIGHWAY OWNERSHIP DETAILS ALLBROOK WAY (SHEET 2 OF 2)

Scale	Designed / Drawn	Checked	Approved	Authorised
1:1000	SG / SA	RJ	AC	--
Original Size	**Date**	**Date**	**Date**	**Date**
A1	26.04.2019	26.04.2019	26.04.2019	--

Drawing Number: 5163169-ATK-HML-0000-DR-CH-000002
(Project | Originator | Volume | Location | Type | Role | Number)

Job No.: 5163169

Revision: P01

HCC CAD FILE: P:\INGUA\H & T\Highways\5163169_ M3 Junction 12 HCC\400 Technical Information\403 Working Drawings and 3D Models\4032 CAD\Drawings (Current)\5163169-ATK-HML-0000-DR-CH-000002.dwg