Tritax Symmetry (Hinckley) Limited

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

The Hinckley National Rail Freight Interchange Development Consent Order

Project reference TR050007

Aston Firs Technical Note [Appendix 4 (D) Road Restraint Risk Assessment Process (RRRAP)

Revision: 01

December 2024

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 5(2)(q)

Aston Firs Technical Note
Appendix D (part 1)
A47 North Bound RRRAP

Full Report

Report 10-Oct-2024 14:17:34

IMPORTANT NOTICE
The Road Restraint design is the responsibility of the Designer; the RRRAP tool is an integral part of the design process which assists the Designer in determining at each specific site the need for VRS and its performance requirements.
Users of this program take full responsibility for verifying the data entered into this program and only using

Record Information

Record Name:	HNRFI A47 Link Road NB
Project Name:	Hinckley National Rail Freight Interchange
Record Description:	
Record Status:	Live
Record Last Updated:	10-Oct-2024 13:17:08
RRRAP Version Number:	3.3
RRRAP Issue Date:	15-Sep-2009

Record Declarations

Declaration	Name (Organisation)	Job Title	Date
Commencement of Design	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Start Date: 03-Oct-2024
Read TD19 & Guidance	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Sign off date: 03-Oct-2024
Site Visit	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Visit date: 26-Sep-2024
Design Checked	Simon Hilditch (BWB Consulting Ltd,	Director	Sign off date: 10-Oct-2024
Design Completed	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Sign off date: 10-Oct-2024

Common Details

Basic Details

Project Id or Pin	
Highway Authority	Leicestershire County Council
Designer Reference	
Contract Type	other
Contract Sub Type	
Region	
Country	England

Reason for Design

New Section of Road	Yes
Widening existing carriageway	No
Upgrade/improvement to existing carriageway	No
Downgrade existing carriageway	No
Replacement of existing restraint	No
New restraint on existing road	No
Temporary Works	No
Road furniture/ equipment improvement	No
Assess existing parapet	No
Other	

Section Details

Road Classification	Other Classified Road
Road Number	N/A
Road Name	A47 Link Road
Road Sub Type	D2
Road Location	Urban
To Current Geometric Standards	

From Junction Name		To Junction Name	
From Junction No		To Junction No	
From Marker Post		To Marker Post	
From Section Label		To Section Label	
From Chainage of section(m)	0.0	To Chainage of section(m)	250.0

Section/Direction being assessed	NB
Nearside or Offside Verge being assessed?	N/S Verge
Does road have full-width (i.e. to standard) near side hardshoulder or hardstrip?	Hard strip < 0.6m
Are Environmental considerations likely to influence provision?	No

Traffic Info

Permanent Speed Limit (mph)	50
Temporary Mandatory Speed Limit (HSR)	N/A
AADT (2-way unless motorway link or slip)	30000
Large Vehicles (%)	8.5
Medium Vehicles (%)	15.4
Model accident frequency (Nearside)	0.16
Model accident frequency (Offside)	

Scheme Duration and Barrier Costs

Start Year	2026
Use Default VRS Lifetime (20 years)?	Yes
Use the default Discount (i.e. inflation) Rate of 7.0% over the VRS lifetime?	Yes
Use default safety barrier and parapet costs?	Yes

600 Earthworks

ID	Earthworks Profile	Start Chainage	Offset from PSb	Overall Width
0600.0001	Rising at 33.3%	0.0	3.5	6.0

Overall Height	Ave slope gradient	Local Alignment	Speed	Sleep	Other Features
2.0	33.3	Average alignment	Mean speed approximately equal to speed limit	C	Y

Typical surface of	Typical location of Highway	Length	Aggressiveness
Short grass	Beyond width of slope	250.0	0.25

Topography Factor	MF for runoff rate	Is risk without VRS acceptable	Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond
1.0	0.97	Yes			

Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	Relaxation / Departure
				0.0	None

Comment

ID	Earthworks Profile	Start Chainage	Offset from PSb	Overall Width
0600.0002	Rising at 33.3%	250.0	3.5	6.0

Overall Height	Ave slope gradient	Local Alignment	Speed	Sleep	Other Features
2.0	33.3	Average alignment	Mean speed approximately equal to speed limit	C	Y

Typical surface of	Typical location of Highway	Length	Aggressiveness
Short grass	Beyond width of slope	End Earthwork for Section.	0.25

1100 Kerbs and Edge of Pavement Details

ID	Nature	Start Chainage
1100.0001	Kerb >100mm up to 250mm	0.0

Comment

ID	Nature	Start Chainage
1100.0002	Kerb >100mm up to 250mm	250.0

Comment

1200 Traffic Signs or Signals

ID	Nature	Start Chainage	Length	Width	Offset from PSb
1200.0001	Signal on p.s.post(s)	160.0	15.0	0.1	1.2

Cluster of hazards	Height / Depth	Mounting height	Designed for collision loading?	Width of sign face	Aggressiveness	Local Alignment
Cluster of hazards	>3m	>1.5m mounting ht	No		0.25	Average alignment

Speed	Sleep	Other Features	Topography Factor	MF for runoff rate	Is risk without VRS acceptable
Mean speed approximately equal to speed limit	C	Y	1.0	0.97	Yes

Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond	Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	Relaxation / Departure required?
							0.0	None

Is calculated risk level accepted for hazard that could give rise to a significant secondary
Yes

Comment

Hazard Issue(s) [1200.0001]
Object is located within working width of barrier. The correction to apply may be to move the hazard, change the working width class, barrier working width, set-back of barrier from Psb, or a combination of these. In this calculation run the effect of the barrier will be overestimated. You may need to apply for a Departure from Standard if the hazard is to remain within the working width. Please refer to CD 377.

1300 Road Lighting Columns

ID	Nature	Start Chainage	Length	Width	Offset from PSb
1300.0001	Row of lighting columns (passively safe)	0.0	250.0	0.1	2.0

Height / Depth	Aggressiveness	Local Alignment	Speed
<10m high	0.25	Average alignment	Mean speed approximately equal to speed limit

Sleep	Other Features	Topography Factor	MF for runoff rate	Is risk without VRS acceptable
C	Y	1.0	0.97	Yes

Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond	Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	Relaxation / Departure required?
							0.0	None

Is calculated risk level accepted for hazard that could give rise to a significant secondary
Yes

Comment

2500 Special Structures

ID	Nature	Start Chainage	Length	Width	Offset from PSb
2500.0001	Environmental Barriers (concrete / timber)	0.0	250.0	0.3	3.0

Height / Depth	Aggressiveness	Local Alignment	Speed	Sleep
>1m height	1.8	Average alignment	Mean speed approximately equal to speed limit	C

Other Features	Topography Factor	MF for runoff rate	Is risk without VRS acceptable
Y	1.0	0.97	Yes

Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond	Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option
							0.0

Relaxation / Departure required?

None

Comment

Hazard Issue(s) [2500.0001]

Hardshoulder / hardstrip width & Verge width details

Chainage	Width of Verge	Width of adjacent Hardstrip A		Carriageway width from Psb	Total nearside runoff distance	Total offside runoff distance
0.0	3.5	0.0	0.0	7.3	0.0	7.3
Comment						

Chainage	Width of Verge	Width of adjacent Hardstrip A		Carriageway width from Psb	Total nearside runoff distance	Total offside runoff distance
250.0	3.5	0.0	0.0	7.3	0.0	7.3
Comment						

End

Aston Firs Technical Note
Appendix D (part 2)
A47 North Bound RRRAP (Gabion Option)

Full Report

Report 18-Nov-2024 15:28:01

IMPORTANT NOTICE
The Road Restraint design is the responsibility of the Designer; the RRRAP tool is an integral part of the design process which assists the Designer in determining at each specific site the need for VRS and its performance requirements.
Users of this program take full responsibility for verifying the data entered into this program and only using

Record Information

Record Name:	HNRFI A47 Link Road NB
Project Name:	Hinckley National Rail Freight Interchange
Record Description:	
Record Status:	Live
Record Last Updated:	18-Nov-2024 15:27:50
RRRAP Version Number:	3.3
RRRAP Issue Date:	31-Mar-2022

Record Declarations

Declaration	Name (Organisation)	Job Title	Date
Commencement of Design	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Start Date: 03-Oct-2024
Read TD19 & Guidance	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Sign off date: 03-Oct-2024
Site Visit	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Visit date: 26-Sep-2024
Design Checked	Simon Hilditch (BWB Consulting Ltd,	Director	Sign off date: 10-Oct-2024
Design Completed	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Sign off date: 18-Nov-2024

Common Details

Basic Details

Project Id or Pin	
Highway Authority	Leicestershire County Council
Designer Reference	
Contract Type	other
Contract Sub Type	
Region	
Country	England

Reason for Design

New Section of Road	Yes
Widening existing carriageway	No
Upgrade/improvement to existing carriageway	No
Downgrade existing carriageway	No
Replacement of existing restraint	No
New restraint on existing road	No
Temporary Works	No
Road furniture/ equipment improvement	No
Assess existing parapet	No
Other	

Section Details

Road Classification	Other Classified Road
Road Number	N/A
Road Name	A47 Link Road
Road Sub Type	D2
Road Location	Urban
To Current Geometric Standards	

From Junction Name		To Junction Name	
From Junction No		To Junction No	
From Marker Post		To Marker Post	
From Section Label		To Section Label	
From Chainage of section(m)	0.0	To Chainage of section(m)	250.0

Section/Direction being assessed	NB
Nearside or Offside Verge being assessed?	N/S Verge
Does road have full-width (i.e. to standard) near side hardshoulder or hardstrip?	Hard strip < 0.6m
Are Environmental considerations likely to influence provision?	No

Traffic Info

Permanent Speed Limit (mph)	50
Temporary Mandatory Speed Limit (HSR)	N/A
AADT (2-way unless motorway link or slip)	30000
Large Vehicles (%)	8.5
Medium Vehicles (%)	15.4
Model accident frequency (Nearside)	0.16
Model accident frequency (Offside)	

Scheme Duration and Barrier Costs

Start Year	2026
Use Default VRS Lifetime (20 years)?	Yes
Use the default Discount (i.e. inflation) Rate of 7.0% over the VRS lifetime?	Yes
Use default safety barrier and parapet costs?	Yes

600 Earthworks

ID	Earthworks Profile	Start Chainage	Offset from PSb	Overall Width
0600.0001	Rising at 33.3%	0.0	3.5	6.0

Overall Height	Ave slope gradient	Local Alignment	Speed	Sleep	Other Features
2.0	33.3	Average alignment	Mean speed approximately equal to speed limit	C	Y

Typical surface of	Typical location of Highway	Length	Aggressiveness
Short grass	Beyond width of slope	250.0	0.25

Topography Factor	MF for runoff rate	Is risk without VRS acceptable	Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond
1.0	0.97	Yes			

Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	Relaxation / Departure
				0.0	None

Comment

ID	Earthworks Profile	Start Chainage	Offset from PSb	Overall Width
0600.0002	Rising at 33.3%	250.0	3.5	6.0

Overall Height	Ave slope gradient	Local Alignment	Speed	Sleep	Other Features
2.0	33.3	Average alignment	Mean speed approximately equal to speed limit	C	Y

Typical surface of	Typical location of Highway	Length	Aggressiveness
Short grass	Beyond width of slope	End Earthwork for Section.	0.25

1100 Kerbs and Edge of Pavement Details

ID	Nature	Start Chainage
1100.0001	Kerb >100mm up to 250mm	0.0

Comment

ID	Nature	Start Chainage
1100.0002	Kerb >100mm up to 250mm	250.0

Comment

1200 Traffic Signs or Signals

ID	Nature	Start Chainage	Length	Width	Offset from PSb
1200.0001	Signal on p.s.post(s)	160.0	15.0	0.1	1.2

Cluster of hazards	Height / Depth	Mounting height	Designed for collision loading?	Width of sign face	Aggressiveness	Local Alignment
Cluster of hazards	>3m	>1.5m mounting ht	No		0.25	Average alignment

Speed	Sleep	Other Features	Topography Factor	MF for runoff rate	Is risk without VRS acceptable
Mean speed approximately equal to speed limit	C	Y	1.0	0.97	Yes

Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond	Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	Relaxation / Departure required?
							0.0	None

Is calculated risk level accepted for hazard that could give rise to a significant secondary
Yes

Comment

Hazard Issue(s) [1200.0001]

Object is located within working width of barrier. The correction to apply may be to move the hazard, change the working width class, barrier working width, set-back of barrier from Psb, or a combination of these. In this calculation run the effect of the barrier will be overestimated. You may need to apply for a Departure from Standard if the hazard is to remain within the working width. Please refer to CD 377.

1300 Road Lighting Columns

ID	Nature	Start Chainage	Length	Width	Offset from PSb
1300.0001	Row of lighting columns (passively safe)	0.0	250.0	0.1	2.0

Height / Depth	Aggressiveness	Local Alignment	Speed
<10m high	0.25	Average alignment	Mean speed approximately equal to speed limit

Sleep	Other Features	Topography Factor	MF for runoff rate	Is risk without VRS acceptable
C	Y	1.0	0.97	Yes

Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond	Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	Relaxation / Departure required?
							0.0	None

Is calculated risk level accepted for hazard that could give rise to a significant secondary
Yes

Comment

1600 Piles and Retaining Walls

ID	Nature	Start Chainage	Length	Width
1600.0001	Gabion wall	0.0	250.0	1.0

Offset from PSb	End Offset from PSb	Angle	Height / Depth	Aggressiveness
3.0	3.0	0	>1m height	1.3

Local Alignment	Speed	Sleep	Other Features	Topography Factor	MF for runoff rate	Is risk without VRS acceptable
Average alignment	Mean speed approximately equal to	C	Y	1.0	0.97	Yes

Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond	Barrier Containment	VRS Class

VRS WW	Setback VRS	End VRS WW	Cost Option	Relaxation / Departure required?
			0.0	None

Comment

Hardshoulder / hardstrip width & Verge width details

Chainage	Width of Verge	Width of adjacent Hardstrip A		Carriageway width from Psb	Total nearside runoff distance	Total offside runoff distance
0.0	3.5	0.0	0.0	7.3	0.0	7.3
Comment						

Chainage	Width of Verge	Width of adjacent Hardstrip A		Carriageway width from Psb	Total nearside runoff distance	Total offside runoff distance
250.0	3.5	0.0	0.0	7.3	0.0	7.3
Comment						

End

Aston Firs Technical Note
Appendix D (part 3)
A47 South Bound RRRAP

Full Report

Report 11-Nov-2024 15:25:44

IMPORTANT NOTICE
The Road Restraint design is the responsibility of the Designer; the RRRAP tool is an integral part of the design process which assists the Designer in determining at each specific site the need for VRS and its performance requirements.
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Record Information

Record Name:	HNRFI A47 Link Road SB
Project Name:	Hinckley National Rail Freight Interchange
Record Description:	
Record Status:	Live
Record Last Updated:	11-Nov-2024 15:15:48
RRRAP Version Number:	3.3
RRRAP Issue Date:	31-Mar-2022

Record Declarations

Declaration	Name (Organisation)	Job Title	Date
Commencement of Design	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Start Date: 01-Oct-2024
Read TD19 & Guidance	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Sign off date: 08-Nov-2024
Site Visit	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Visit date: 26-Sep-2024
Design Checked	Daniel Fraser (BWB Consulting Ltd,	Engineer	Sign off date: 11-Nov-2024
Design Completed	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Sign off date: 11-Nov-2024

Common Details

Basic Details

Project Id or Pin	
Highway Authority	Leicestershire County Council
Designer Reference	
Contract Type	other
Contract Sub Type	
Region	
Country	England

Reason for Design

New Section of Road	Yes
Widening existing carriageway	No
Upgrade/improvement to existing carriageway	No
Downgrade existing carriageway	No
Replacement of existing restraint	No
New restraint on existing road	No
Temporary Works	No
Road furniture/ equipment improvement	No
Assess existing parapet	No
Other	

Section Details

Road Classification	Other Classified Road
Road Number	N/A
Road Name	A47 Link Road
Road Sub Type	D2
Road Location	Urban
To Current Geometric Standards	

From Junction Name		To Junction Name	
From Junction No		To Junction No	
From Marker Post		To Marker Post	
From Section Label		To Section Label	
From Chainage of section(m)	250.0	To Chainage of section(m)	0.0

Section/Direction being assessed	SB
Nearside or Offside Verge being assessed?	N/S Verge
Does road have full-width (i.e. to standard) near side hardshoulder or hardstrip?	Hard strip < 0.6m
Are Environmental considerations likely to influence provision?	No

Traffic Info

Permanent Speed Limit (mph)	50
Temporary Mandatory Speed Limit (HSR)	N/A
AADT (2-way unless motorway link or slip)	30000
Large Vehicles (%)	8.5
Medium Vehicles (%)	15.4
Model accident frequency (Nearside)	0.16
Model accident frequency (Offside)	

Scheme Duration and Barrier Costs

Start Year	2026
Use Default VRS Lifetime (20 years)?	Yes
Use the default Discount (i.e. inflation) Rate of 7.0% over the VRS lifetime?	Yes
Use default safety barrier and parapet costs?	Yes

600 Earthworks

ID	Earthworks Profile	Start Chainage	Offset from PSb	Overall Width
0600.0001	Rising at 33.3%	0.0	3.5	6.0

Overall Height	Ave slope gradient	Local Alignment	Speed	Sleep	Other Features
2.0	33.3	Average alignment	Mean speed approximately equal to speed limit	C	Y

Typical surface of	Typical location of Highway	Length	Aggressiveness
Short grass	Beyond width of slope	End Earthwork for Section.	0.25

ID	Earthworks Profile	Start Chainage	Offset from PSb	Overall Width
0600.0002	Rising at 33.3%	250.0	3.5	6.0

Overall Height	Ave slope gradient	Local Alignment	Speed	Sleep	Other Features
2.0	33.3	Average alignment	Mean speed approximately equal to speed limit	C	Y

Typical surface of	Typical location of Highway	Length	Aggressiveness
Short grass	Beyond width of slope	250.0	0.25

Topography Factor	MF for runoff rate	Is risk without VRS acceptable	Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond
1.0	0.97	Yes			

Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	Relaxation / Departure
				0.0	None

Comment

1100 Kerbs and Edge of Pavement Details

ID	Nature	Start Chainage
1100.0002	Kerb >100mm up to 250mm	0.0

Comment

ID	Nature	Start Chainage
1100.0001	Kerb >100mm up to 250mm	250.0

Comment

1200 Traffic Signs or Signals

ID	Nature	Start Chainage	Length	Width	Offset from PSb
1200.0001	Signal on p.s.post(s)	160.0	15.0	0.1	1.2

Cluster of hazards	Height / Depth	Mounting height	Designed for collision loading?	Width of sign face	Aggressiveness	Local Alignment
Cluster of hazards	>3m	>1.5m mounting ht	No		0.25	Average alignment

Speed	Sleep	Other Features	Topography Factor	MF for runoff rate	Is risk without VRS acceptable
Mean speed approximately equal to speed limit	C	Y	1.0	0.97	Yes

Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond	Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	Relaxation / Departure required?
							0.0	None

Is calculated risk level accepted for hazard that could give rise to a significant secondary
No

Comment

Hazard Issue(s) [1200.0001]
Object is located within working width of barrier. The correction to apply may be to move the hazard, change the working width class, barrier working width, set-back of barrier from Psb, or a combination of these. In this calculation run the effect of the barrier will be overestimated. You may need to apply for a Departure from Standard if the hazard is to remain within the working width. Please refer to CD 377.
This hazard could give rise to a secondary incident should it be impacted. The calculated risk level does not cover the secondary risk. If you consider the risk level of a secondary incident to be significant, you may wish to consider moving the hazard, or use a higher level of containment, or both.

1300 Road Lighting Columns

ID	Nature	Start Chainage	Length	Width	Offset from PSb
1300.0001	Row of lighting columns (passively safe)	250.0	250.0	0.1	2.0

Height / Depth	Aggressiveness	Local Alignment	Speed
<10m high	0.25	Average alignment	Mean speed approximately equal to speed limit

Sleep	Other Features	Topography Factor	MF for runoff rate	Is risk without VRS acceptable
C	Y	1.0	0.97	Yes

Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond	Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	Relaxation / Departure required?
							0.0	None

Is calculated risk level accepted for hazard that could give rise to a significant secondary
No

Comment

Hazard Issue(s) [1300.0001]

This hazard could give rise to a secondary incident should it be impacted. The calculated risk level does not cover the secondary risk. If you consider the risk level of a secondary incident to be significant, you may wish to consider moving the hazard, or use a higher level of containment, or both.

Water

ID	Nature	Start Chainage	Length	Width	Offset from PSb
8800.0001	Water > 1m depth	250.0	40.0	50.0	15.0

End Offset from PSb	Angle	Aggressiveness	Local Alignment	Speed	Sleep
11.0	174	1.5	Average alignment	Mean speed < speed limit	A

Other Features	Topography Factor	MF for runoff rate	Is risk without VRS acceptable	Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond
Y	1.0	0.94	Yes			

Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	Relaxation / Departure
				0.0	None

Comment

Hazard Issue(s) [8800.0001]

Hardshoulder / hardstrip width & Verge width details

Chainage	Width of Verge	Width of adjacent Hardstrip A		Carriageway width from Psb	Total nearside runoff distance	Total offside runoff distance
0.0	3.5	0.0	0.0	7.3	0.0	7.3
Comment						

Chainage	Width of Verge	Width of adjacent Hardstrip A		Carriageway width from Psb	Total nearside runoff distance	Total offside runoff distance
250.0	3.5	0.0	0.0	7.3	0.0	7.3
Comment						

End

Aston Firs Technical Note
Appendix D (part 4)
B4669 East Bound RRRAP

Full Report

Report 10-Oct-2024 14:18:04

IMPORTANT NOTICE
The Road Restraint design is the responsibility of the Designer; the RRRAP tool is an integral part of the design process which assists the Designer in determining at each specific site the need for VRS and its performance requirements.
Users of this program take full responsibility for verifying the data entered into this program and only using

Record Information

Record Name:	HNRFI B4669 EB
Project Name:	Hinckley National Rail Freight Interchange
Record Description:	
Record Status:	Live
Record Last Updated:	10-Oct-2024 13:15:35
RRRAP Version Number:	3.3
RRRAP Issue Date:	15-Sep-2009

Record Declarations

Declaration	Name (Organisation)	Job Title	Date
Commencement of Design	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Start Date: 10-Oct-2024
Read TD19 & Guidance	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Sign off date: 10-Oct-2024
Site Visit	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Visit date: 25-Sep-2024
Design Checked	Simon Hilditch (BWB Consulting Ltd,	Director	Sign off date: 10-Oct-2024
Design Completed	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Sign off date: 10-Oct-2024

Common Details

Basic Details

Project Id or Pin	
Highway Authority	Leicestershire County Council
Designer Reference	
Contract Type	other
Contract Sub Type	N/A
Region	
Country	England

Reason for Design

New Section of Road	Yes
Widening existing carriageway	No
Upgrade/improvement to existing carriageway	No
Downgrade existing carriageway	No
Replacement of existing restraint	No
New restraint on existing road	No
Temporary Works	No
Road furniture/ equipment improvement	No
Assess existing parapet	No
Other	

Section Details

Road Classification	Other Classified Road
Road Number	B4669
Road Name	B4669
Road Sub Type	Single
Road Location	Rural
To Current Geometric Standards	Yes

From Junction Name		To Junction Name	
From Junction No		To Junction No	
From Marker Post		To Marker Post	
From Section Label		To Section Label	
From Chainage of section(m)	0.0	To Chainage of section(m)	60.0

Section/Direction being assessed	
Nearside or Offside Verge being assessed?	N/S Verge
Does road have full-width (i.e. to standard) near side hardshoulder or hardstrip?	Hard strip < 0.6m
Are Environmental considerations likely to influence provision?	No

Traffic Info

Permanent Speed Limit (mph)	60
Temporary Mandatory Speed Limit (HSR)	N/A
AADT (2-way unless motorway link or slip)	30000
Large Vehicles (%)	8.5
Medium Vehicles (%)	15.4
Model accident frequency (Nearside)	0.066
Model accident frequency (Offside)	0.037

Scheme Duration and Barrier Costs

Start Year	2026
Use Default VRS Lifetime (20 years)?	Yes
Use the default Discount (i.e. inflation) Rate of 7.0% over the VRS lifetime?	Yes
Use default safety barrier and parapet costs?	Yes

600 Earthworks

ID	Earthworks Profile	Start Chainage	Offset from PSb	Overall Width
0600.0001	Nominally at Grade	0.0	2.0	1.0

Overall Height	Ave slope gradient	Local Alignment	Speed	Sleep	Other Features
0.0	0.0	Average alignment	Mean speed approximately equal to speed limit	C	Y

Typical surface of	Typical location of Highway	Length	Aggressiveness
Short grass	Beyond width of slope	60.0	0.25

Topography Factor	MF for runoff rate	Is risk without VRS acceptable	Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond
1.0	0.97	Yes			

Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	Relaxation / Departure
				0.0	None

Comment

ID	Earthworks Profile	Start Chainage	Offset from PSb	Overall Width
0600.0002	Nominally at Grade	60.0	2.0	1.0

Overall Height	Ave slope gradient	Local Alignment	Speed	Sleep	Other Features
0.0	0.0	Average alignment	Mean speed approximately equal to speed limit	C	Y

Typical surface of	Typical location of Highway	Length	Aggressiveness
Short grass	Beyond width of slope	End Earthwork for Section.	0.25

1100 Kerbs and Edge of Pavement Details

ID	Nature	Start Chainage
1100.0001	Kerb >100mm up to 250mm	0.0

Comment

ID	Nature	Start Chainage
1100.0002	Kerb >100mm up to 250mm	60.0

Comment

2500 Special Structures

ID	Nature	Start Chainage	Length	Width	Offset from PSb
2500.0001	Environmental Barriers (concrete / timber)	0.0	60.0	0.3	9.0

Height / Depth	Aggressiveness	Local Alignment	Speed	Sleep
>1m height	1.8	Average alignment	Mean speed approximately equal to speed limit	C

Other Features	Topography Factor	MF for runoff rate	Is risk without VRS acceptable
Y	1.0	0.97	Yes

Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond	Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option
							0.0

Relaxation / Departure required?

None

Comment

Hazard Issue(s) [2500.0001]

Hardshoulder / hardstrip width & Verge width details

Chainage	Width of Verge	Width of adjacent Hardstrip A		Carriageway width from Psb	Total nearside runoff distance	Total offside runoff distance
0.0	2.0	0.0	0.0	7.3	0.0	7.3
Comment						

Chainage	Width of Verge	Width of adjacent Hardstrip A		Carriageway width from Psb	Total nearside runoff distance	Total offside runoff distance
60.0	2.0	0.0	0.0	8.0	0.0	8.0
Comment						

End

Aston Firs Technical Note
Appendix D (part 5)
B4669 East Bound RRRAP (Gabion Option)

Full Report

Report 18-Nov-2024 15:29:40

IMPORTANT NOTICE
The Road Restraint design is the responsibility of the Designer; the RRRAP tool is an integral part of the design process which assists the Designer in determining at each specific site the need for VRS and its performance requirements.
Users of this program take full responsibility for verifying the data entered into this program and only using

Record Information

Record Name:	HNRFI B4669 EB
Project Name:	Hinckley National Rail Freight Interchange
Record Description:	
Record Status:	Live
Record Last Updated:	18-Nov-2024 15:29:33
RRRAP Version Number:	3.3
RRRAP Issue Date:	31-Mar-2022

Record Declarations

Declaration	Name (Organisation)	Job Title	Date
Commencement of Design	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Start Date: 10-Oct-2024
Read TD19 & Guidance	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Sign off date: 10-Oct-2024
Site Visit	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Visit date: 25-Sep-2024
Design Checked	Simon Hilditch (BWB Consulting Ltd,	Director	Sign off date: 10-Oct-2024
Design Completed	Sam Carter (BWB Consulting Ltd, Nottingham)	Associate Director	Sign off date: 18-Nov-2024

Common Details

Basic Details

Project Id or Pin	
Highway Authority	Leicestershire County Council
Designer Reference	
Contract Type	other
Contract Sub Type	N/A
Region	
Country	England

Reason for Design

New Section of Road	Yes
Widening existing carriageway	No
Upgrade/improvement to existing carriageway	No
Downgrade existing carriageway	No
Replacement of existing restraint	No
New restraint on existing road	No
Temporary Works	No
Road furniture/ equipment improvement	No
Assess existing parapet	No
Other	

Section Details

Road Classification	Other Classified Road
Road Number	B4669
Road Name	B4669
Road Sub Type	Single
Road Location	Rural
To Current Geometric Standards	Yes

From Junction Name		To Junction Name	
From Junction No		To Junction No	
From Marker Post		To Marker Post	
From Section Label		To Section Label	
From Chainage of section(m)	0.0	To Chainage of section(m)	60.0

Section/Direction being assessed	
Nearside or Offside Verge being assessed?	N/S Verge
Does road have full-width (i.e. to standard) near side hardshoulder or hardstrip?	Hard strip < 0.6m
Are Environmental considerations likely to influence provision?	No

Traffic Info

Permanent Speed Limit (mph)	60
Temporary Mandatory Speed Limit (HSR)	N/A
AADT (2-way unless motorway link or slip)	30000
Large Vehicles (%)	8.5
Medium Vehicles (%)	15.4
Model accident frequency (Nearside)	0.066
Model accident frequency (Offside)	0.037

Scheme Duration and Barrier Costs

Start Year	2026
Use Default VRS Lifetime (20 years)?	Yes
Use the default Discount (i.e. inflation) Rate of 7.0% over the VRS lifetime?	Yes
Use default safety barrier and parapet costs?	Yes

600 Earthworks

ID	Earthworks Profile	Start Chainage	Offset from PSb	Overall Width
0600.0001	Nominally at Grade	0.0	2.0	1.0

Overall Height	Ave slope gradient	Local Alignment	Speed	Sleep	Other Features
0.0	0.0	Average alignment	Mean speed approximately equal to speed limit	C	Y

Typical surface of	Typical location of Highway	Length	Aggressiveness
Short grass	Beyond width of slope	60.0	0.25

Topography Factor	MF for runoff rate	Is risk without VRS acceptable	Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond
1.0	0.97	Yes			

Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	Relaxation / Departure
				0.0	None

Comment

ID	Earthworks Profile	Start Chainage	Offset from PSb	Overall Width
0600.0002	Nominally at Grade	60.0	2.0	1.0

Overall Height	Ave slope gradient	Local Alignment	Speed	Sleep	Other Features
0.0	0.0	Average alignment	Mean speed approximately equal to speed limit	C	Y

Typical surface of	Typical location of Highway	Length	Aggressiveness
Short grass	Beyond width of slope	End Earthwork for Section.	0.25

1100 Kerbs and Edge of Pavement Details

ID	Nature	Start Chainage
1100.0001	Kerb >100mm up to 250mm	0.0

Comment

ID	Nature	Start Chainage
1100.0002	Kerb >100mm up to 250mm	60.0

Comment

1600 Piles and Retaining Walls

ID	Nature	Start Chainage	Length	Width
1600.0001	Gabion wall	0.0	60.0	1.0

Offset from PSb	End Offset from PSb	Angle	Height / Depth	Aggressiveness
9.0	9.0	0	>1m height	1.3

Local Alignment	Speed	Sleep	Other Features	Topography Factor	MF for runoff rate	Is risk without VRS acceptable
Average alignment	Mean speed approximately equal to	C	Y	1.0	0.97	Yes

Level of risk with optimum length VRS	Min Length Advance	Min Length Beyond	Barrier Containment	VRS Class

VRS WW	Setback VRS	End VRS WW	Cost Option	Relaxation / Departure required?
			0.0	None

Comment

Hardshoulder / hardstrip width & Verge width details

Chainage	Width of Verge	Width of adjacent Hardstrip A		Carriageway width from Psb	Total nearside runoff distance	Total offside runoff distance
0.0	2.0	0.0	0.0	7.3	0.0	7.3
Comment						

Chainage	Width of Verge	Width of adjacent Hardstrip A		Carriageway width from Psb	Total nearside runoff distance	Total offside runoff distance
60.0	2.0	0.0	0.0	8.0	0.0	8.0
Comment						

End