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



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

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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

From Junction No

To Junction No

To Junction No

To Marker Post

To Marker Post

To Section Label

From Chainage of section(m)

Output

To Chainage of section(m)

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?

Traffic Info

250.0

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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

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600 Earthwor	<u>ks</u>							
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 appro equal to speed limi		С	Υ		
Typical surface of	Typical location	on of Highway	Lengt	h		Aggressiveness		
Short grass	Beyond width	of slope	250.0		0.25			
Topography Factor	MF for runoff ra	te Is risk without VR	S Level of risk with optimum length VRS		Min Leng Advance			
1.0	0.97	Yes						
Barrier Containment	VRS Class	VRS WW S	Setback VRS	Cost Option	n F	Relaxation / Departure		
				0.0	1	None		
Comment								

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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 appro equal to speed lim		С	Υ
Typical surface of	Typical loca	tion of Highway	Leng	th		Aggressiveness
Short grass	Beyond wid	th of slope	End	Earthwork for	Section.	0.25

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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		

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1200 Traffic Signs or Signals

ID	Nature			Start Ch	nainage	L	ength	Width	Offs	et from PSb
1200.0001	Signal on p	.s.post(s)		160.0		1	15.0	0.1	1.2	
Cluster of hazards	Height / Depth	Mounting height	Designe loading?	ed for collision	Width face	of sigr	Aggres	sivenes	S	Local Alignment
Cluster of hazards	>3m	>1.5m mounting ht	No				0.25			Average alignment
Speed		Sleep	Oth	ner Features	Topograp Factor	hy	MF for rul	noff	Is risk	without VRS able
Mean speed ap limit	proximately equa	I to speed C	Υ		1.0		0.97		Yes	
Level of risk wit length VRS	h optimum Min Le Advan	~		Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Optio	n [telaxation / Departure equired?
								0.0	١	lone

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.

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1300 Road Lighting C	Columns
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ID	Na	ture		Start Cha	inage	Len	gth '	Width	Offset from PSb
1300.0001		Row of lighting columns (passively safe)		0.0		250	.0	0.1	2.0
Height / De	pth	Aggres	ssiveness	Local Alignmer	nt	Spe	ed		
<10m high		0.25		Average alignr	nent	Mea limit	•	approxim	nately equal to speed
Sleep	Other Feature	es T	opography Factor	MF for rur	noff rate	Is	s risk with	nout VRS	acceptable
С	Υ	1	1.0	0.97		Υ	'es		
Level of risk length VRS	c with optimum	Min Length Advance		Barrier Containment	VRS Class	VRS WW	Setback VRS	k Cost Optio	L)enarture

None

0.0

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

Yes

Comment

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2500 Special	Structures
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ID I	Nature		Start Chair	nage	Lenç	gth	Width	Offse	t from PSb
/300.0001	Environmental Barriers (concrete / timber)		0.0		250	.0	0.3	3.0	
Height / Depth	Aggress	iveness	Local Alignmen	ıt	Spe				Sleep
>1m height	1.8		Average alignment		Mea equa	Mean speed approxinequal to speed limit		nately	С
Other Features	Topography Factor		MF for runoff rate		ls	Is risk without VRS acceptab			table
Υ	1.0		0.97 Ye		Yes				
Level of risk with optimulength VRS	um Min Length Advance	Min Length Beyond	Barrier Containment	VRS Class	VRS WW	Setba	ack VRS	Cost	Option
								0.0	

Relaxation / Departure required?

None

Comment

Hazard Issue(s) [2500.0001]

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Hardshoulder / hardstrip width & Verge width details

Chainage	Width of Verge			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		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)



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

Road Number

N/A

Road Name

A47 Link Road

Are Environmental considerations likely to influence provision?

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 To Chainage of section(m) 250.0 0.0 From Chainage of section(m) 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

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 appro equal to speed lim		С	Υ
Typical surface of	Typical locati	on of Highway	Lengt	th		Aggressiveness
Short grass	Beyond widtl	n of slope	250.0)		0.25
Topography Factor	MF for runoff ra	te Is risk without VR acceptable	S Level of risk with length VRS	h optimum	Min Leng Advance	th Min Length Beyond
1.0	0.97	Yes				
Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	on F	Relaxation / Departure
				0.0	1	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 appro equal to speed lim		С	Υ
Typical surface of	Typical loca	tion of Highway	Length			Aggressiveness
Short grass	Beyond wid	th 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 Ch	nainage	Length	Width	Offset from PSb
1200.0001	Signal on p	o.s.post(s)		160.0		15.0	0.1	1.2
Cluster of hazards	Height / Depth	Mounting height		igned for collision ling?	Width of si face	gn Aggres	siveness	Local Alignment
Cluster of hazards	>3m	>1.5m mounting ht	No			0.25		Average alignment
Speed		Sle	ер	Other Features	Topography Factor	MF for rul		Is risk without VRS acceptable
Mean speed ap limit	proximately equa	al to speed C		Υ	1.0	0.97		Yes
Level of risk with length VRS	n optimum Min Le Advar	•	ength	Barrier Containment	VRS Class WW		Cost Optio	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.

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 L	ocal Alignment	Speed		

<10m high</p>
O.25
Average alignment
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

Relaxation / Level of risk with optimum Min Length Min Length VRS **VRS** Setback Cost **Barrier** Departure length VRS Advance Beyond Containment Class WW **VRS** Option 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		S	Start Chainage	Length	Width
1600.0001	Gabion wall		O	0.0	250.0	1.0
Offset from PSh	End Offset from	PSb	Angle	Height / Dept	th Ag	gressiveness
3.0	3.0		0	>1m height	1.3	3
Local Alignment	Speed	Sleep	Other Feature	es Topography Factor	MF for runoff rate	Is risk without VRS acceptable
Average alignment	Mean speed approximately equal to	С	Υ	1.0	0.97	Yes
Level of risk wit VRS		n Length Adva	nnce Min L	ength Beyond	Barrier Containment	t 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 adjacen	t	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 adjacer	nt	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

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.

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 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	⁹ , 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 To Chainage of section(m) 0.0 250.0 From Chainage of section(m) 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?

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 Average alignment Mean speed approximately Υ 2.0 С 33.3 equal to speed limit Typical surface of Typical location of Highway Length Aggressiveness End Earthwork for Section. Short grass Beyond width of slope 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 approa		С	Υ
Typical surface of	Typical location	on of Highway	Lengtl	h		Aggressiveness
Short grass	Beyond width	of slope	250.0			0.25
Topography Factor	MF for runoff rate	e Is risk without VR acceptable	Level of risk with length VRS	optimum	Min Lengt Advance	h Min Length Beyond
1.0	0.97	Yes				
Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Optio	n R	elaxation / Departure
				0.0	N	one
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		

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1200 Traffic Signs or Signals

ID	Nature			Start Ch	nainage	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	Desig loadir	gned for collision ng?	Width of s	ign Aggres	ssiveness	Local Alignment
Cluster of hazards	>3m	>1.5m mounting ht	No			0.25		Average alignment
Speed		Slee	p	Other Features	Topography Factor	MF for ru		Is risk without VRS acceptable
Mean speed ap limit	proximately equa	I to speed C		Υ	1.0	0.97		Yes
Level of risk wit length VRS	h optimum Min Le Advar	0	. •	Barrier Containment	VRS VR Class WV		Cost Optio	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	Lightin	g Co	lumns

ID	Po	ure	lumns (passively	Start Chai	nage	Len		Vidth	Offset from PSb
1300.000	saf		250.0	250.0 0.1			2.0		
Height / D	epth	Aggress	iveness	Local Alignmer	nt	Spe	ed		
<10m high	1	0.25		Average alignr	nent	Mea limit	•	approxim	ately equal to speed
Sleep	Other Feature	s To	pography Factor	r MF for rur	off rate	Is	risk witho	out VRS	acceptable
С	Υ	1.0)	0.97		Υ	'es		
							63		

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.

<u>Water</u>										
ID		Nature			Start C	hainage	Length	Width	Offset f	rom PSb
8800.0001		Water > 1m de	epth		250.0		40.0	50.0	15.0	
End Offset f	rom PSb	Angle	Aggressivene	ess L	₋ocal Aligi	nment	Speed			Sleep
11.0		174	1.5	,	Average a	llignment	Mean speed <	speed limit	i	Α
Other Features	Topography Factor	MF for rur rate	noff Is risk v	without VF able		Level of ris	k with optimum	Min Lengt Advance		n Length eyond
Υ	1.0	0.94	Yes							
Barrier Con	tainment	VRS Class	VRS WW	Setback	k VRS	Cost Option	on Relaxation	on / Depart	ure	
						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 Total nearside ru		off 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		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



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

N/A

Designer Reference

Contract Type other

Contract Sub Type

Region

Country England

Reason for Design

Full Report 10-Oct-2024 14:18:04

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

Traffic Info

Full Report 10-Oct-2024 14:18:04

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 Earthwor	<u>ks</u>					
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 appro equal to speed lim		С	Υ
Typical surface of	Typical locati	on of Highway	Leng	th		Aggressiveness
Short grass	Beyond width	of slope	60.0			0.25
Topography Factor	MF for runoff ra	te Is risk without VR acceptable	Level of risk wit length VRS	h optimum	Min Leng Advance	th Min Length Beyond
1.0	0.97	Yes				
Barrier Containment	VRS Class	VRS WW	Setback VRS	Cost Option	on F	Relaxation / Departure
				0.0	1	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 appro equal to speed lim	•	С	Υ
Typical surface of	Typical loca	tion of Highway	Leng	th		Aggressiveness
Short grass	Beyond wid	th 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		

ID	Nature		Start Chainage		Lengt	h Width	Offse	et from PSb
/300.0001	Environmental Barriers (concrete / timber)		0.0		60.0	0.3	9.0	
Height / Depth	Aggressiveness		Local Alignmer	Local Alignment Speed		eed		Sleep
>1m height	1.8		Average alignn	nent	Mean equal	speed appro I to speed lim	oximately it	С
Other Features	Topography Factor		MF for runoff rate		ls r	Is risk without VRS acceptable		table
Υ	1.0		0.97		Ye	S		
Level of risk with optimulength VRS	um Min Length Advance	Min Length Beyond	Barrier Containment	VRS Class	VRS WW	Setback VRS	S Cost	Option

0.0

Relaxation / Departure required?

None

Comment

Hazard Issue(s) [2500.0001]

Full Report 10-Oct-2024 14:18:04

Hardshoulder / hardstrip width & Verge width details

Chainage	Width of Verge			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)



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)
Section/Direction being assessed		
Nearside or Offside Verge being asses	N/S Verge	
Does road have full-width (i.e. to stand	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 Local Alignment Ave slope gradient **Speed** Sleep Other Features Average alignment Mean speed approximately Υ С 0.0 0.0 equal to speed limit Typical surface of Typical location of Highway Length Aggressiveness Beyond width of slope 60.0 0.25 Short grass MF for runoff rate Is risk without VRS Level of risk with optimum Min Length Min Length **Topography Factor** acceptable length VRS Advance Beyond 0.97 1.0 Yes Relaxation / Departure **VRS WW** Setback VRS **Barrier Containment VRS Class Cost Option** 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 appro equal to speed lim		С	Υ
Typical surface of	Typical location of Highway		Leng	th		Aggressiveness
Short grass	Beyond wid	th 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		Sta	rt Chainage	Length	Width
1600.0001	Gabion wall		0.0		60.0	1.0
Offset from PS	b End Offset from	PSb	Angle	Height / Dept	h Ag	ggressiveness
9.0	9.0		0	>1m height	1.3	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	С	Υ	1.0	0.97	Yes
Level of risk wir		in Length Adva	ance Min Len	gth Beyond	Barrier Containmen	t 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		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