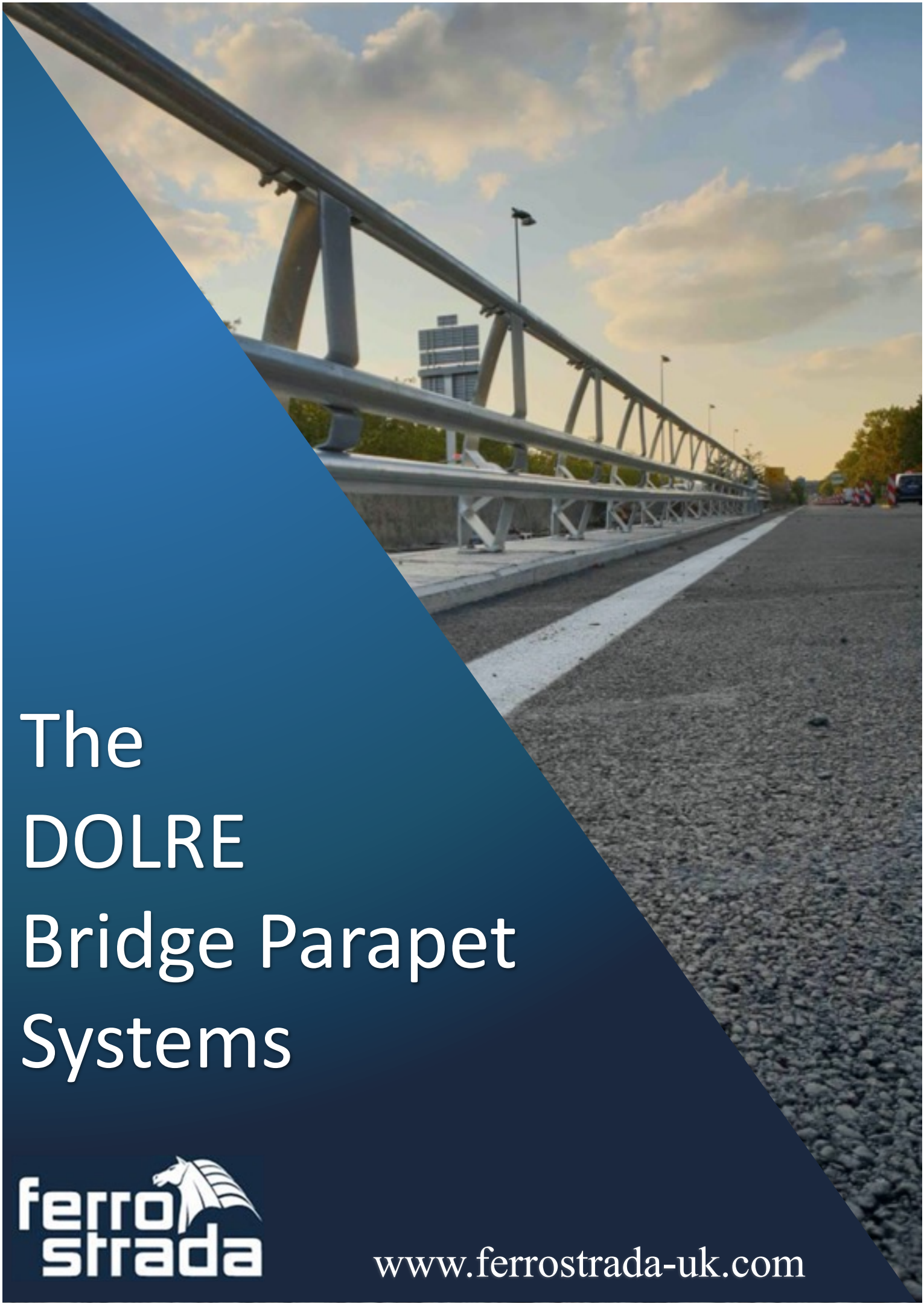

The DOLRE Bridge Parapet Systems

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DOLRE Bridge Parapets

The Desami **DOLRE** range of Bridge Parapet systems presented by FerroStrada have been developed with road safety engineering in mind. Outstanding aesthetically pleasing designs are complimented with effective mechanisms to limit transferable forces to the supporting structure making it a highly efficient, attractive, and cost effective solution for new and existing bridge parapet projects.

Supplied in convenient containment options N2 normal containment, H2 higher containment and H4 very high containment, each DOLRE system is fastened to the bridge with just two anchors either side of an elongated base plate. The base plate is designed to support locally drilled and fixed anchors.

Breakaway posts activate a heavy chain concept which provides the design envelope for DOLRE systems to be compliantly installed on ageing infrastructure without the need for significant refurbishment and on modest off-bridge concrete foundations of just 150mm.

ferro strada
CONSTRUCTION PRODUCT ENGINEERING

DESAMI

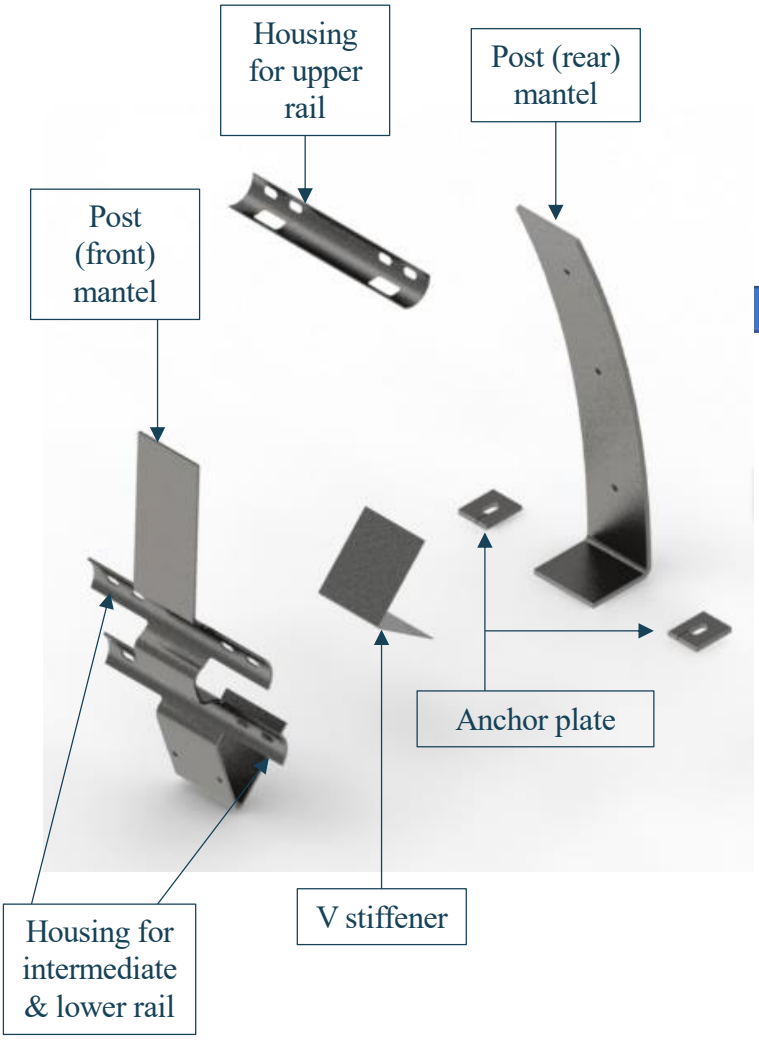
FerroStrada (UK) Limited
Venlaw House, Burston Road, The Heywood
South Norfolk, IP22 5SX, United Kingdom
email: admin@ferrostrada-uk.com

DOLRE Bridge Parapets

DOLRE Bridge Parapet Posts

The DOLRE bridge parapet posts have been designed to conceal fasteners from road side and constructed to be mounted on a concrete support via rectangular plates welded either side of a rear mantel.

This patent protected technology enables the post to breakaway without affecting the integrity of the anchors.



The system been carefully considered for optimum performance, visual aesthetically pleasing, impact and versatility.

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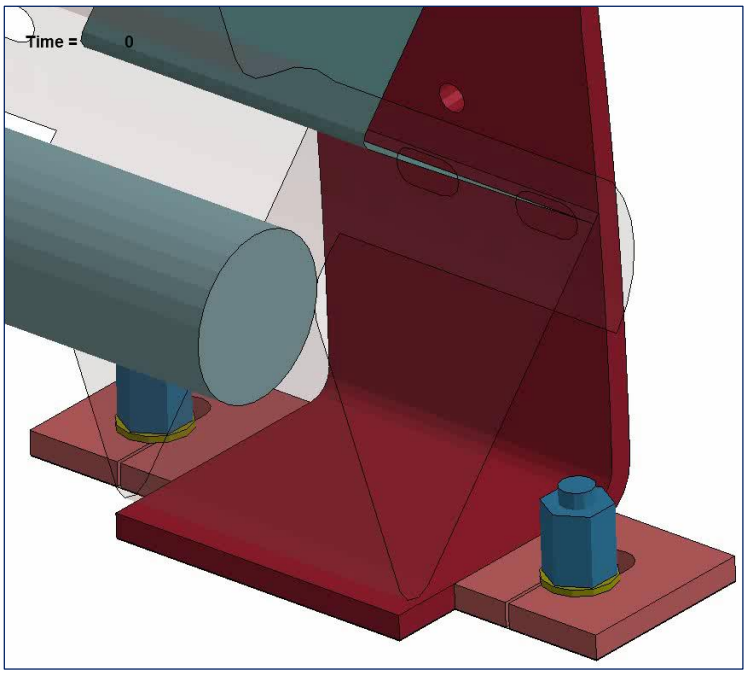
DOLRE Bridge Parapets

DOLRE Bridge Parapet Posts

The innovative fuse disconnection process at the base plate prevents permanent damage to the anchor unit during impact. This means, in all cases, the anchors will not require replacing making impact maintenance swift and effective.

The energy is dissipated by the system through rigid tubes to operate a heavy chain mechanism which is a common feature with FerroStrada systems.

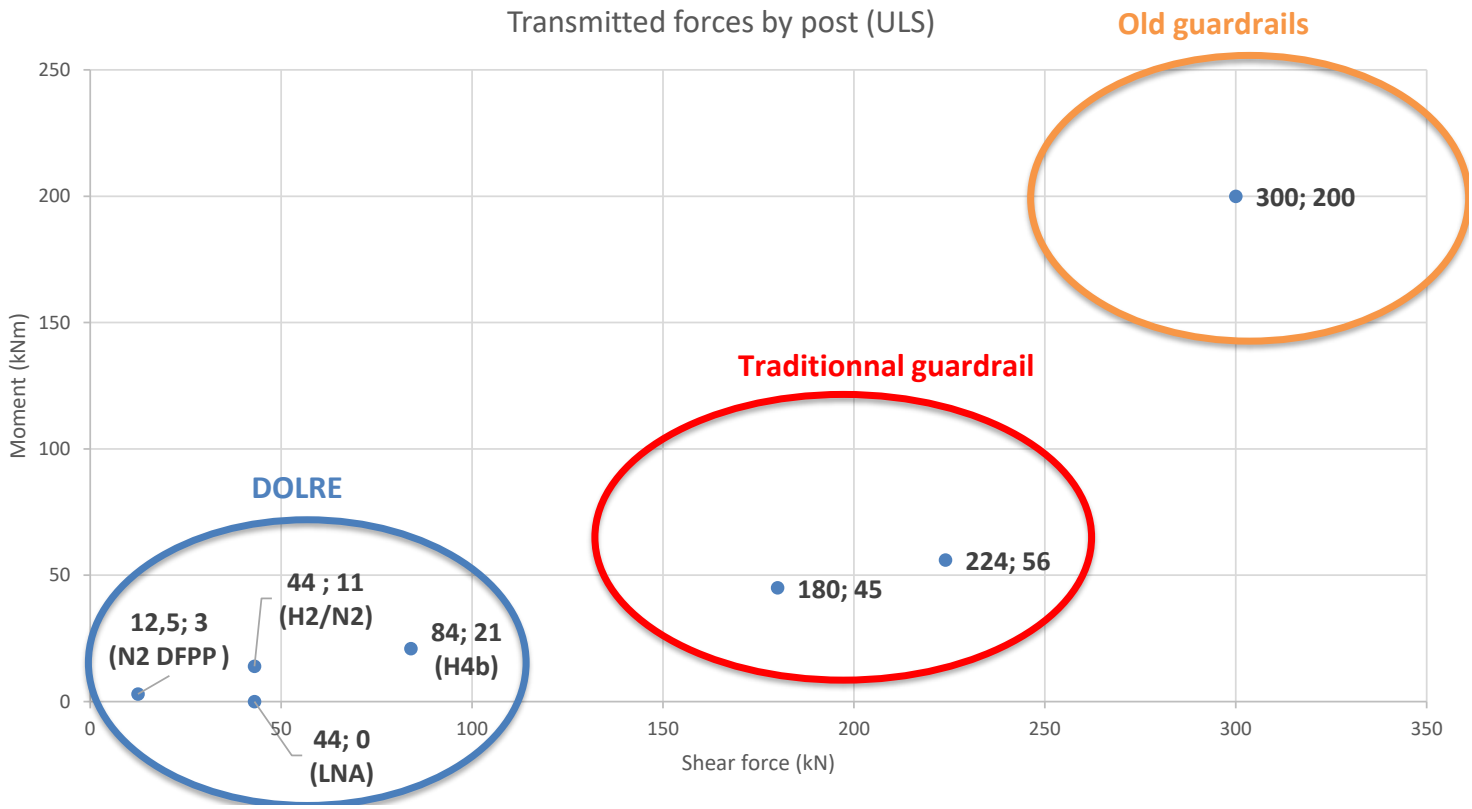
No fixings visible from road side



DOLRE Bridge Parapets

DOLRE Low Stress

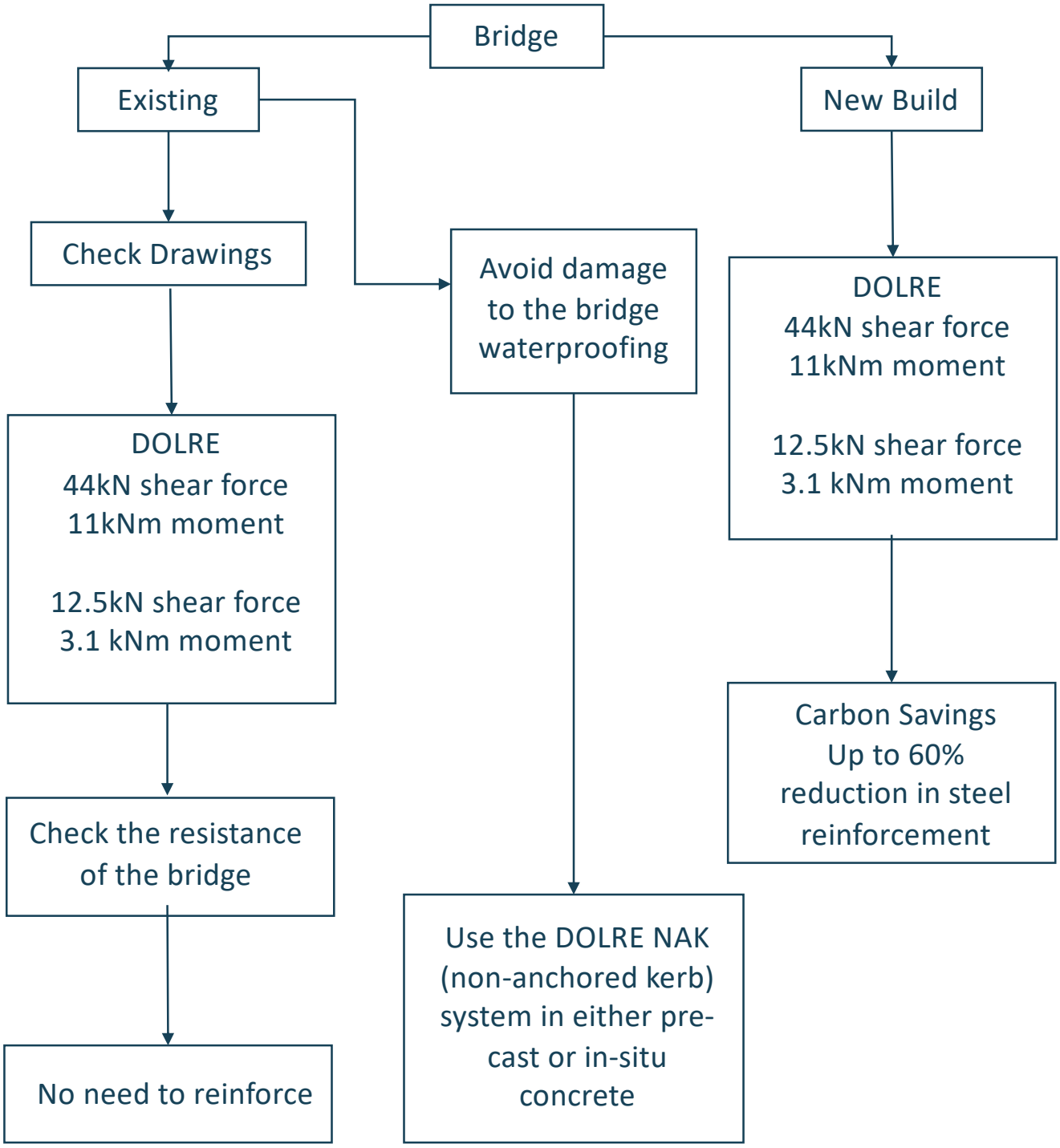
The energy dissipation techniques offer the ideal opportunity to upgrade existing structures with a modern, up to date, attractive system without the need for heavy refurbishment including steel reinforcement. DOLRE is light weight therefore in most cases can relieve stresses from the bridge by removing weight without compromising on compliance or safety.



DOLRE Bridge Parapets

DOLRE Design Process

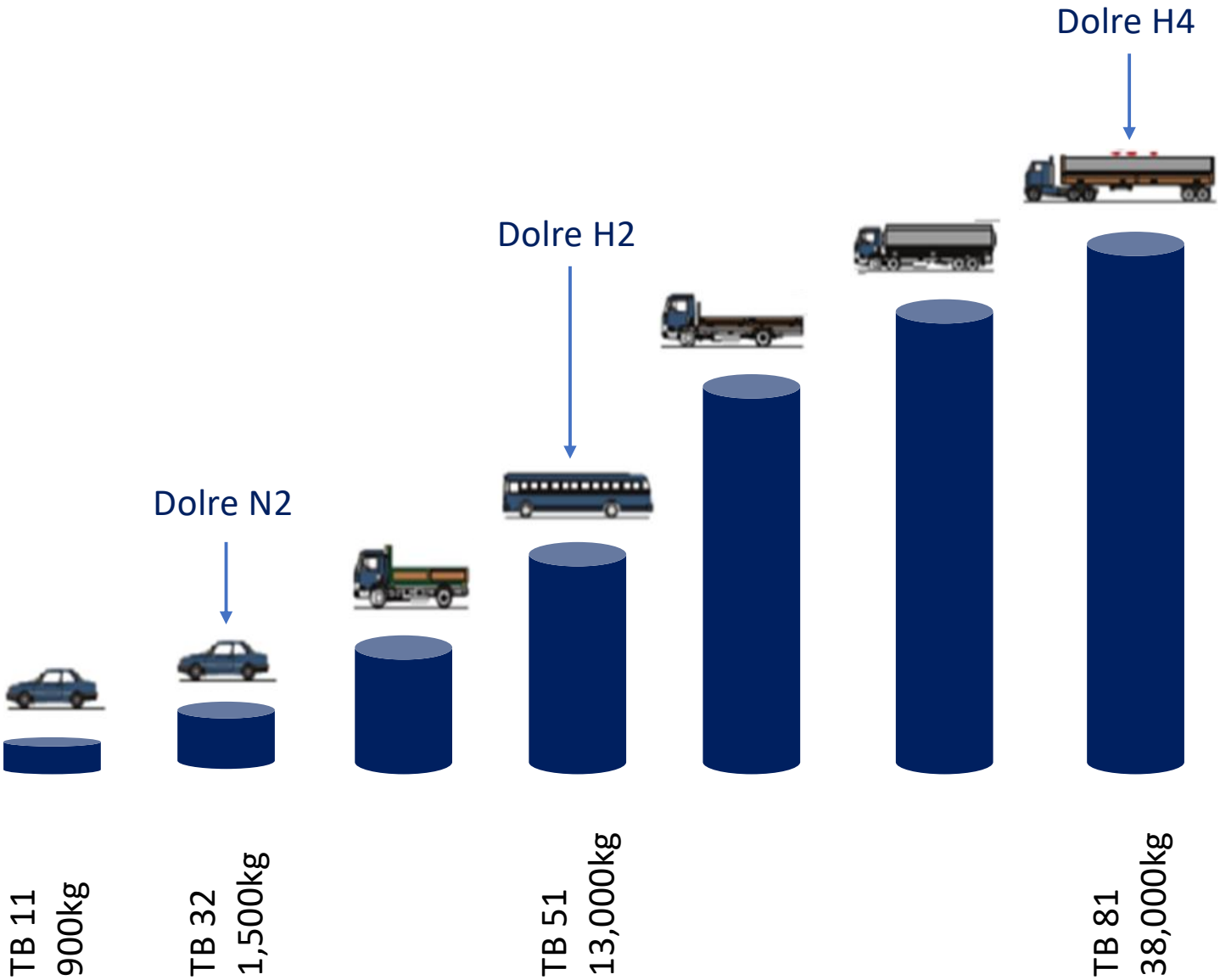
The low stresses generated by DOLRE bridge parapet systems present opportunities to embrace Net Zero in construction by offering the platform to create innovative and carbon efficient design concepts for refurbishment and new build projects saving construction time and costs.



DOLRE Bridge Parapets

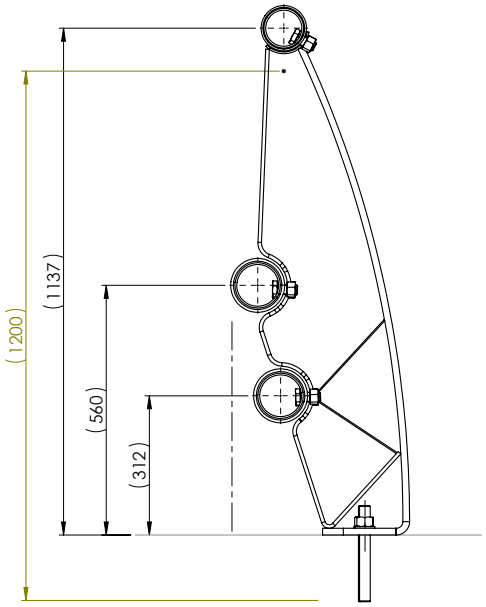
DOLRE Containment Classes

The DOLRE Bridge Parapet is supplied in three convenient Containment Classes according to the parameters set out in EN 1317 conforming to Part 5 Product Conformity.



DOLRE Bridge Parapets

DOLRE N2-32



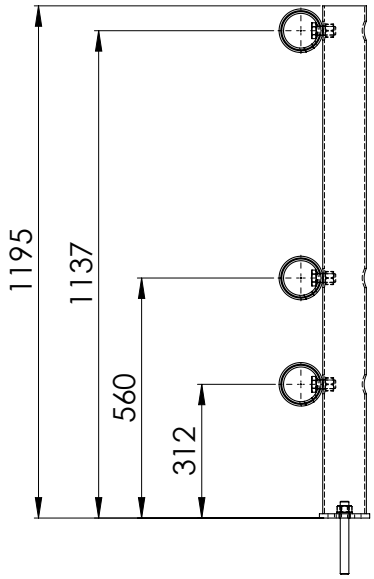
The DOLRE N2-32 Bridge Parapet.

Containment Class:	N2
Dynamic Deflection:	0.8m
Working Width:	W2
Vehicle Intrusion:	Vi3
Acceleration Severity Index:	ASI B

Post Centres (m)	Nominal height (m)	Minimum plinth width (mm)	Anchor Type	Forces	
				Shear Force (kN)	Moment (kNm)
6.0	1.2	400	M24	44	11

DOLRE Bridge Parapets

DOLRE N2-46 DFPP



The DOLRE N2-46 DFPP Bridge Parapet.

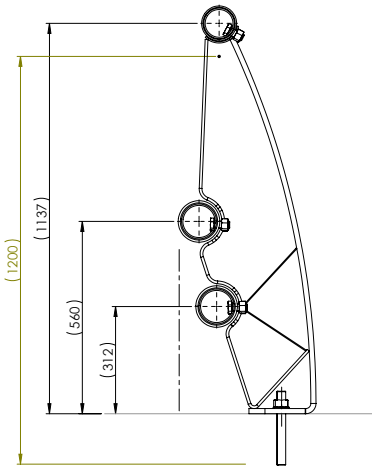
Containment Class:	N2
Dynamic Deflection:	0.9m
Working Width:	W3
Vehicle Intrusion:	Vi3
Acceleration Severity Index:	ASI B

DFPP = Double Face Pedestrian Protection

Post Centres (m)	Nominal height (m)	Minimum plinth width (mm)	Anchor Type	Forces	
				Shear Force (kN)	Moment (kNm)
2.0	1.2	240	M20	12.5	3.1

DOLRE Bridge Parapets

DOLRE H2-41



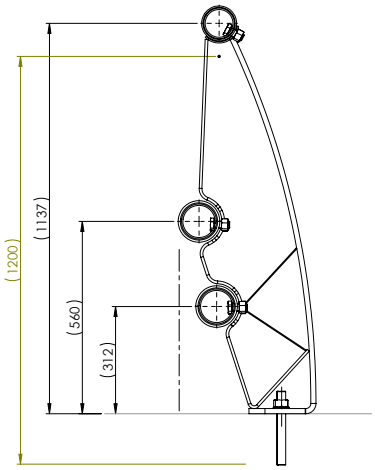
The DOLRE H2-41 Bridge Parapet.

Containment Class:	H2
Dynamic Deflection:	0.9m
Working Width:	W3
Vehicle Intrusion:	Vi3
Acceleration Severity Index:	ASI B

Post Centres (m)	Nominal height (m)	Minimum plinth width (mm)	Anchor Type	Forces	
				Shear Force (kN)	Moment (kNm)
2.0	1.2	400	M24	44	11

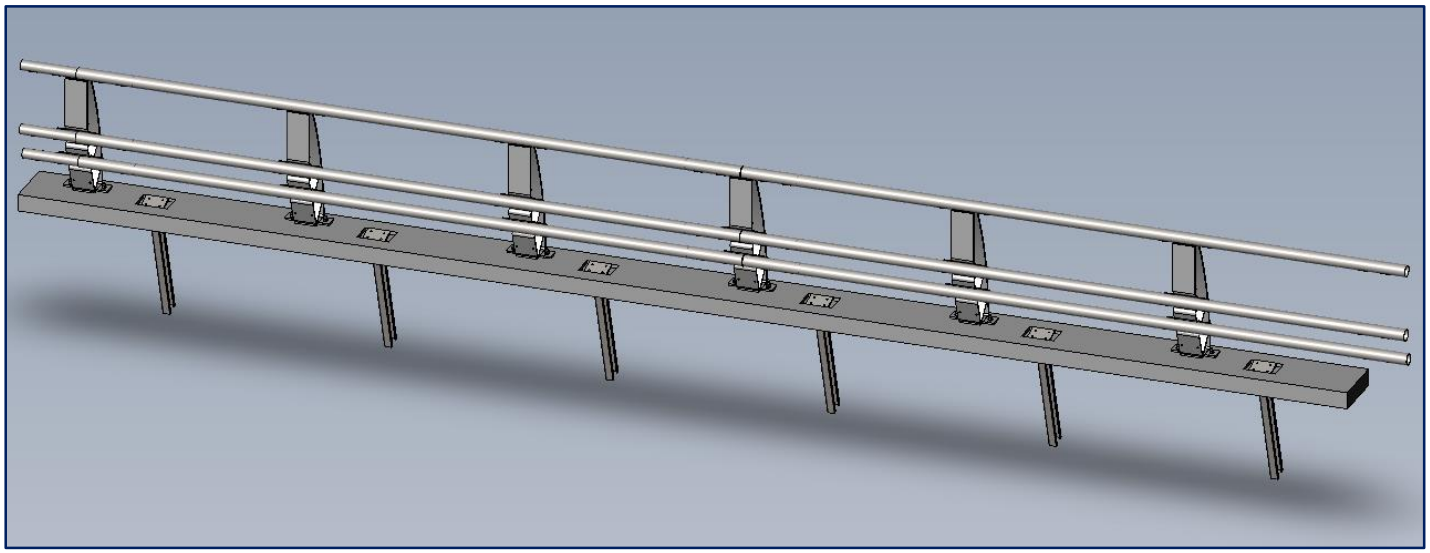
DOLRE Bridge Parapets

DOLRE H2-33 NAK



The DOLRE H2-33 Off-Bridge Parapet on 150mm thick string course.

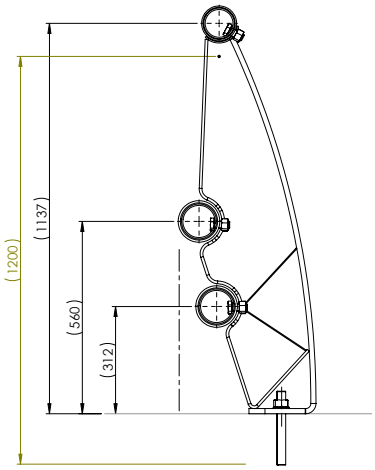
Containment Class:	H2
Dynamic Deflection:	0.9m
Working Width:	W3
Vehicle Intrusion:	Vi3
Acceleration Severity Index:	ASI B



Post Centres (m)	Nominal height (m)	Minimum plinth width (mm)	Anchor Type	Forces	
				Shear Force (kN)	Moment (kNm)
2.0	1.2	650	M24	44	11

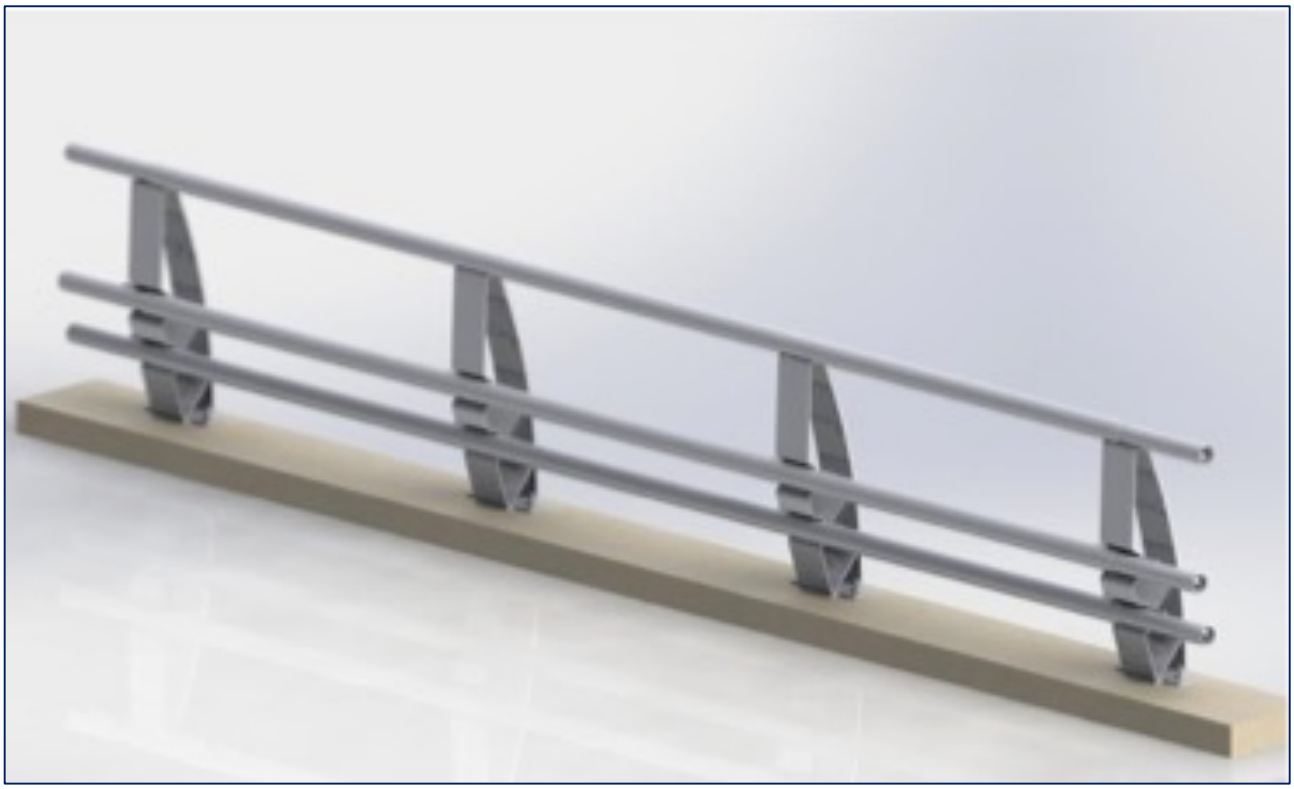
DOLRE Bridge Parapets

DOLRE H2-55 Light



The DOLRE H2-55 light weight version of H2-41

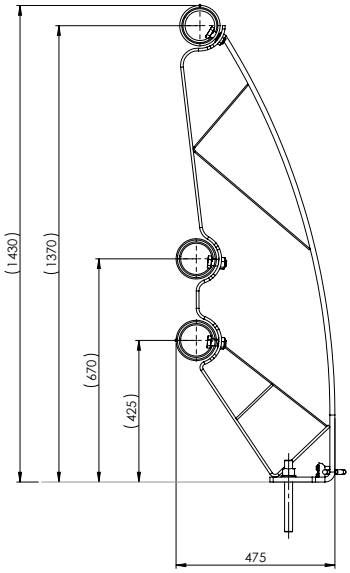
Containment Class:	H2
Dynamic Deflection:	1.4m
Working Width:	W5
Vehicle Intrusion:	Vi5
Acceleration Severity Index:	ASI B



Post Centres (m)	Nominal height (m)	Minimum plinth width (mm)	Anchor Type	Forces	
				Shear Force (kN)	Moment (kNm)
2.0	1.2	400	M24	44	11

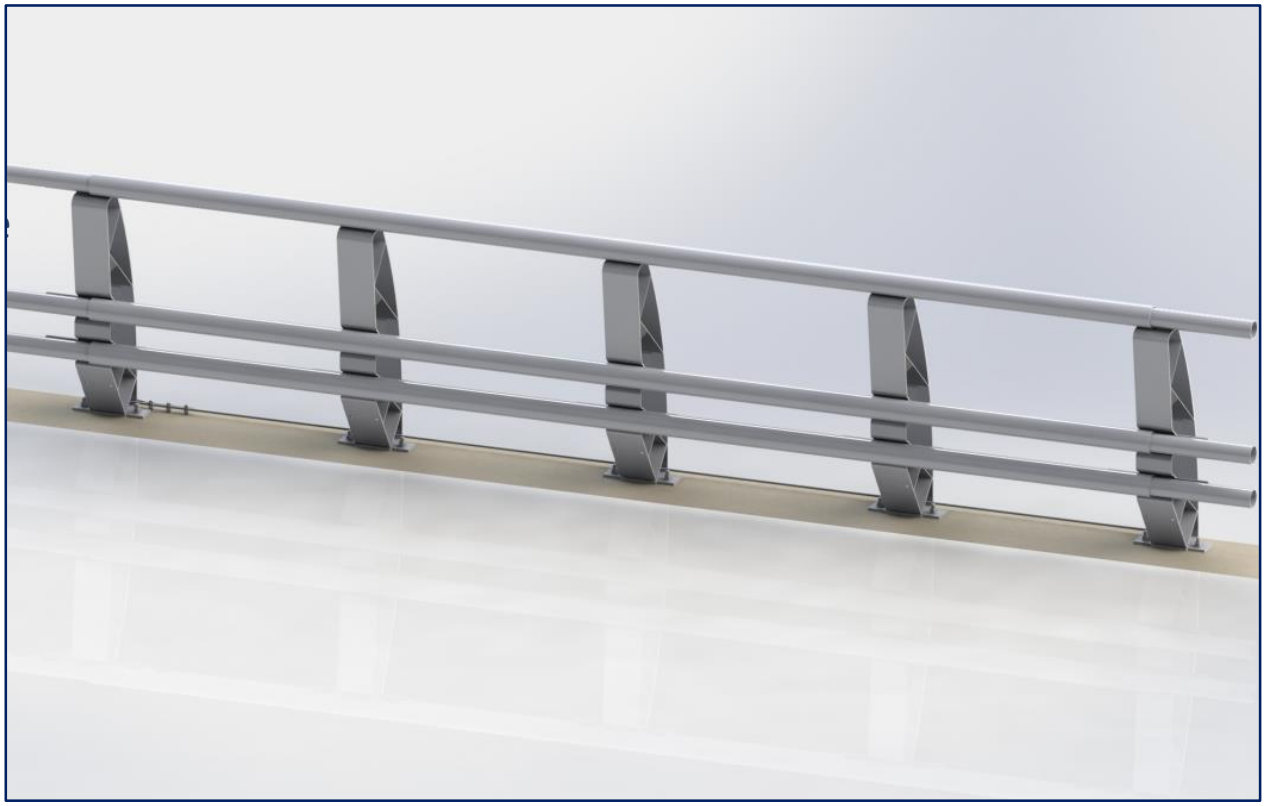
DOLRE Bridge Parapets

DOLRE H4-64



The DOLRE H4-64 Bridge Parapet

Containment Class:	H4
Dynamic Deflection:	1.7m
Working Width:	W6
Vehicle Intrusion:	Vi8
Acceleration Severity Index:	ASI B

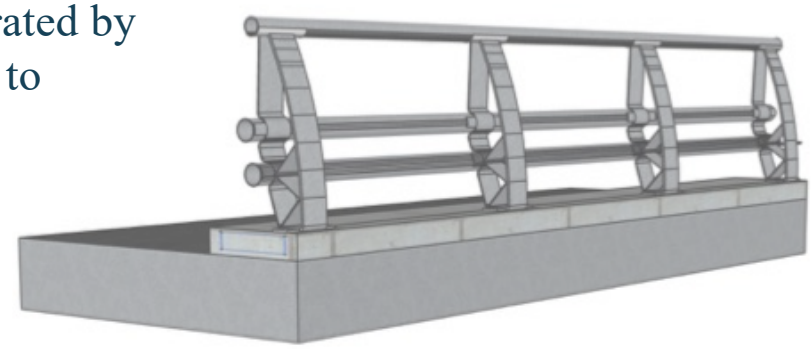


Post Centres (m)	Nominal height (m)	Minimum plinth width (mm)	Anchor Type	Forces	
				Shear Force (kN)	Moment (kNm)
1.5	1.4	500	M24	84	21

DOLRE Bridge Parapets

DOLRE NAK SYSTEM (Non-Anchored Kerb)

Due to the modest impact loads generated by DOLRE systems, we have a platform to create innovative design solutions.



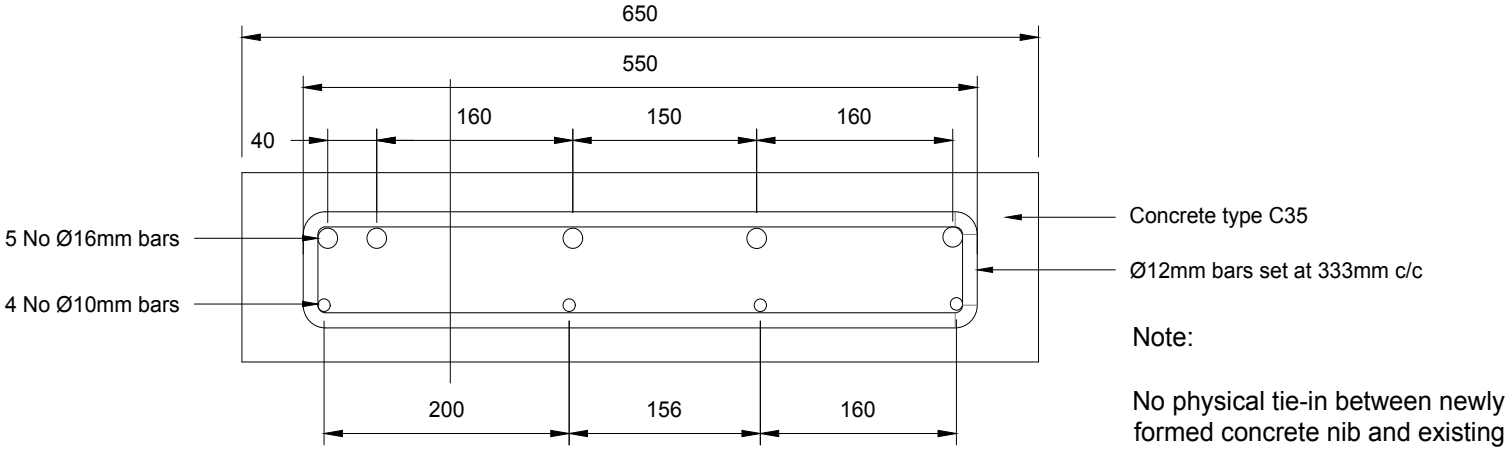
The solutions are not exhaustive and can change depending on your project requirements.

We created a self-supporting concrete nib 650mm x 150mm designed to sit directly on the bridge without any mechanical bonding. The nib can be created in-situ or in pre-cast with detailed reinforcement already verified by crash test.

In pre-cast the length from 6m and more can be delivered with the parapet already installed.

The NAK system can be installed along the bridge extents or in front of an existing bridge parapet.

No damage to the existing waterproofing



Note:

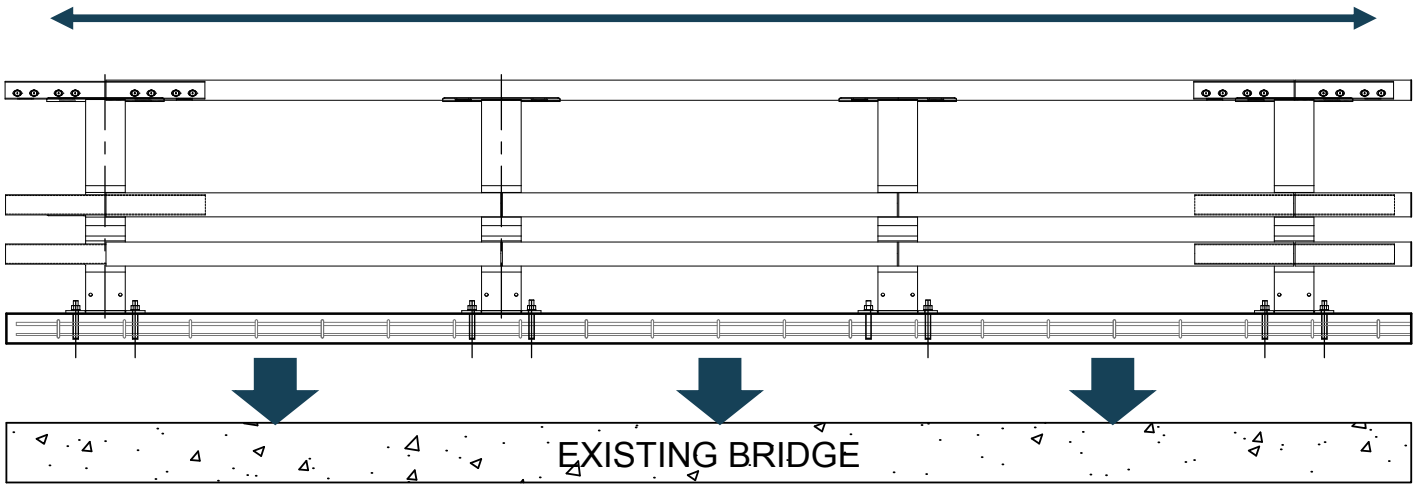
No physical tie-in between newly formed concrete nib and existing structure

DOLRE DESIGN INFORMATION	
Design moment acting along the slab (M)	11 kNm
Coexisting Shear Force (V)	44 kN

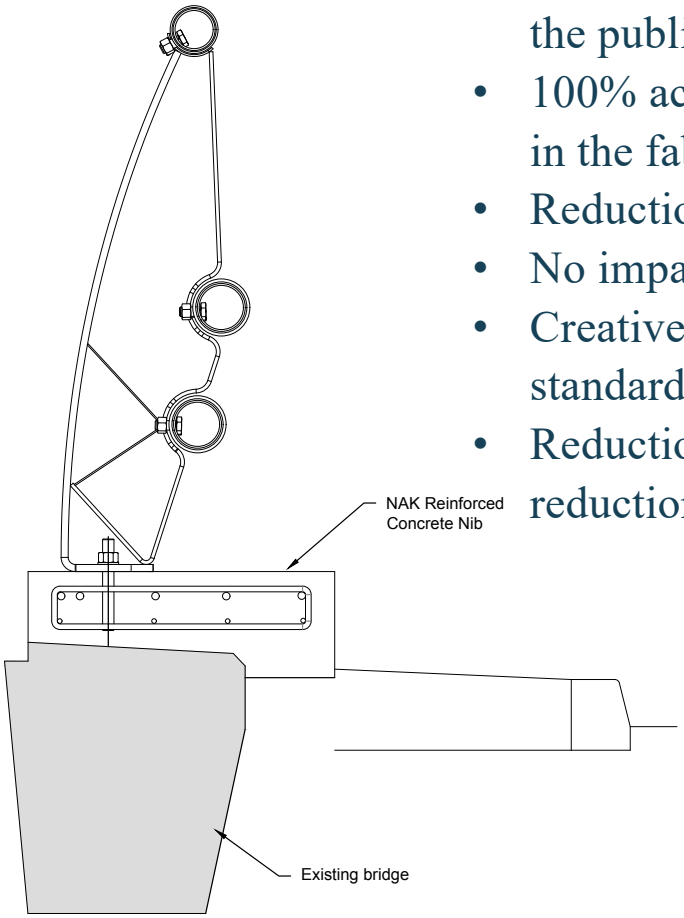
DOLRE Bridge Parapets

DOLRE NAK SYSTEM (Non-Anchored Kerb)

Flexible engineering solutions - produced in-situ or Pre-cast



- Suitable for N246, N232, H232, H241 and H255
- The entire parapet can be produced and installed completely off-site.
- Cost effective solution to minimise disruption to the public.
- 100% accuracy – all installation work completed in the fabrication yard.
- Reduction in traffic management requirements.
- No impact loads transferred to the bridge.
- Creative solution for parapet upgrade and sub-standard parapet protection.
- Reduction in on-site labour – reduction in risk – reduction in potential accidents



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DOLRE Bridge Parapets

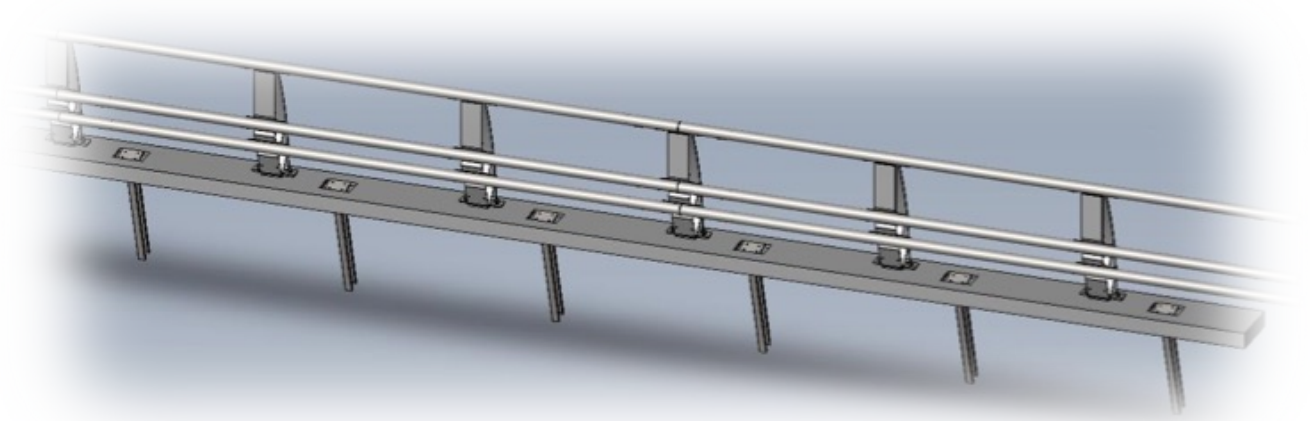
DOLRE NAK SYSTEM (Non-Anchored Kerb)

DOLRE Non-Anchored Kerb Impact Test

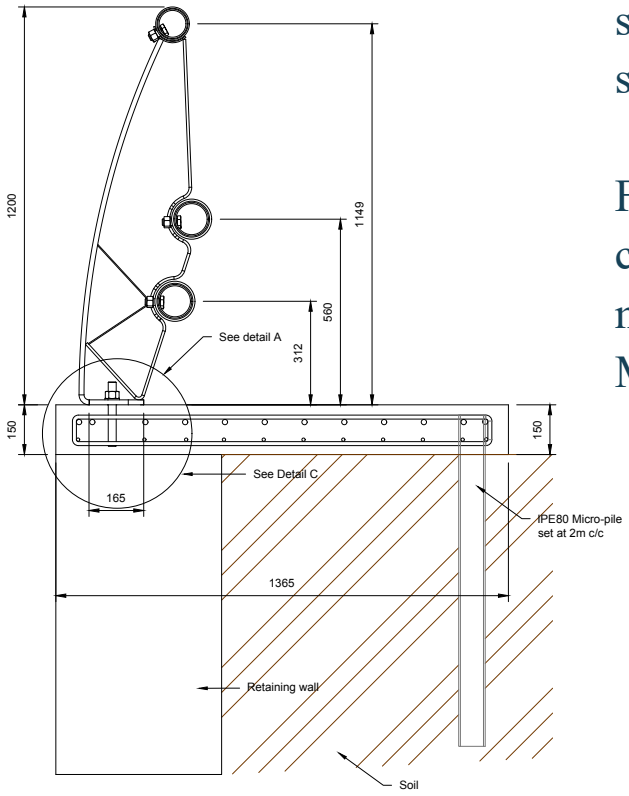
The Result

DOLRE Bridge Parapets

DOLRE NAK SYSTEM (Non-Anchored Kerb)



For retaining walls, embankments and reinforced soil – the LNA is a slab solution that requires a micro pile inserted into the soil at 2m centres. The string course remains 150mm in thickness and its width is variable.



Limited horizontal loads means the slab does not transfer significant forces into the soils and therefore no further soil stabilisation works are required.

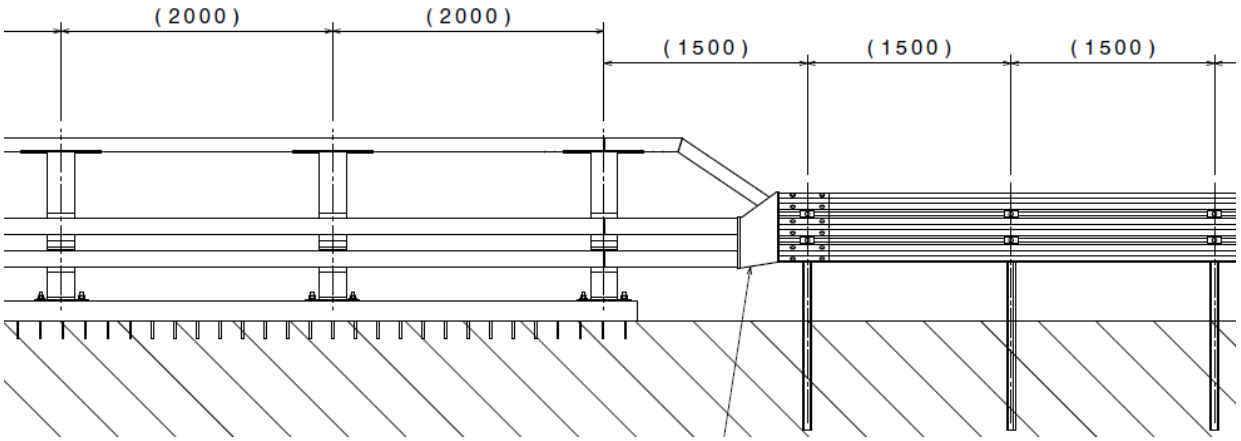
For edge of embankments, the string course can be reduced to 500mm in width maintaining the 150mm in thickness. Micro-piles are inserted at 2m post centres.

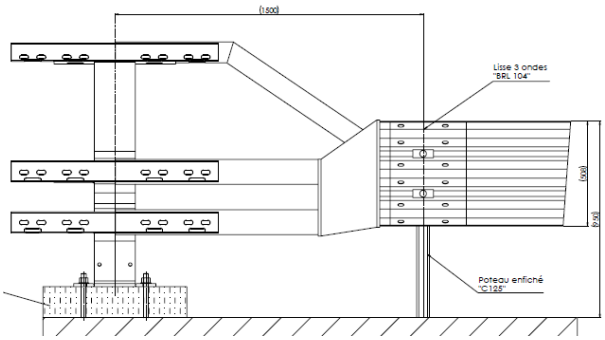
DOLRE Bridge Parapets

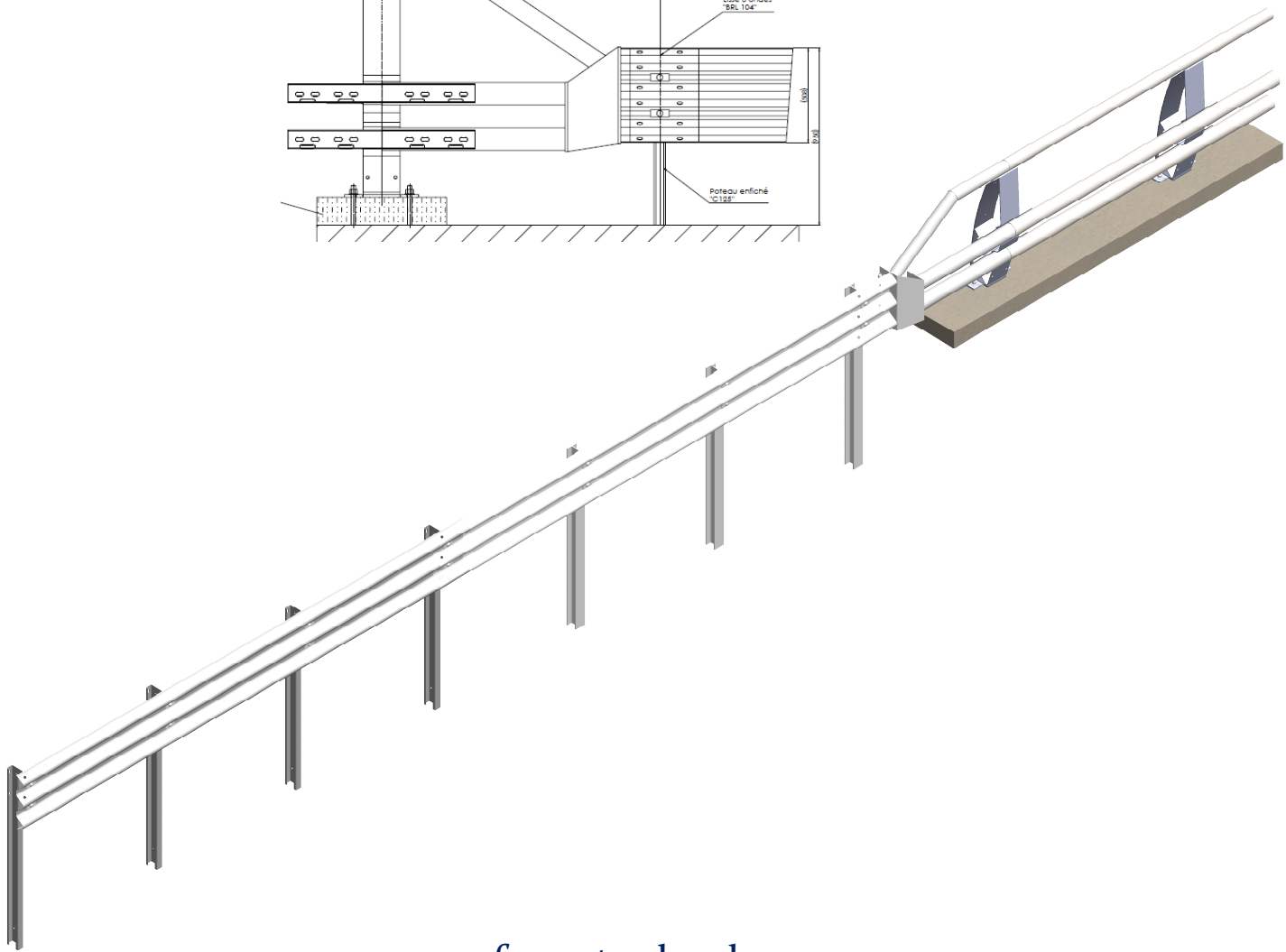
DOLRE Transitions

The DOLRE Bridge Parapet systems can be supplied with numerous transition options.

Transition TL2 and TL4 to steel guardrail





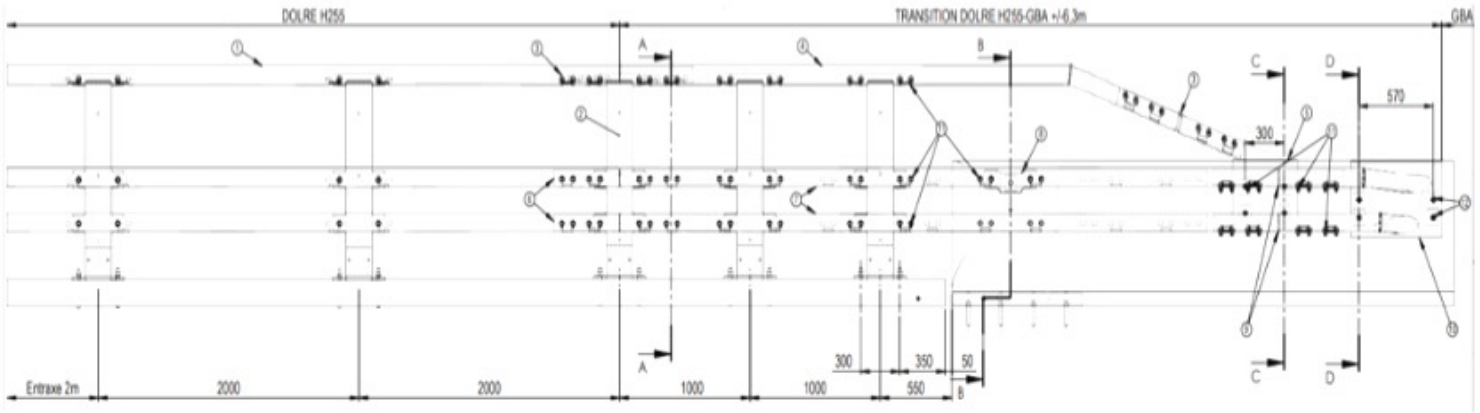


DOLRE Bridge Parapets

DOLRE Transitions

The DOLRE Bridge Parapet systems can be supplied with numerous transition options.

Impact tested transition TL4 to concrete barrier



DOLRE Bridge Parapets

DOLRE Accessories

The DOLRE parapet systems can be supplied with a wide range of accessories to provide aesthetically pleasing options.

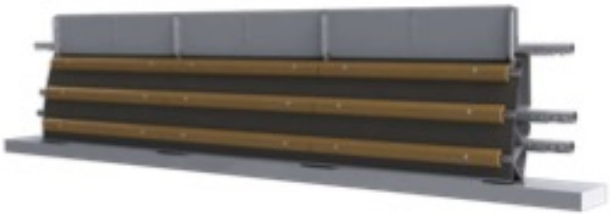
Mesh infill panels fitted to front or rear

Decorative infill panels

Solid infill panels fitted to front or rear

Solid infill panels fitted to front or rear with mesh extension

Bat protection system with wood clad



Bat protection extension with wood clad

LED highway lighting systems

DOLRE Bridge Parapets

DOLRE Applications

Aesthetically pleasing with posts 6.0m apart

Transitions to safety fence

Angles and bespoke manufacture

Bat Protection

Bat Protection with extension plate

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DOLRE
BRIDGE PARAPETS

Outstanding Design
Less Reinforcement
Lowest Forces
Carbon Saving Opportunity

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