

Protect 365[®] N1 Parapet

3 rail 1.0 m

Approved by UK Highways Agency and National Roads Authority (Ireland).

Designed, verified by computer modelling, and dynamically tested with modern cars (less than five years old) and with representative test lengths to meet the requirements of BS EN 1317.

Improved safety performance together with reduced bridge deck loadings than older steel systems or current accredited steel or aluminium systems.

Containment level	N1
Height	1.0 m
Post centres	
• Proven range	2.5 to 3.75 m
• End bay maximum	3.0 m
Minimum length of parapet	12.5 m end post centres (5 bays, 6 posts)
Plinth height	50 to 100 mm
Grout bedding (plus any falls)	10 to 30 mm
Plinth width minimum	450 mm

For all non standard designs contact us at the details below

Key features

- Reduced structure loading
- Reduced anchorage requirements
- Increased proven range of post centres
- Increased tolerance for installation to accommodate out of position foundations

Availability

Supply and installation is by licensed companies having third party verified UK Highways Agency Sector Scheme 5A and 5B approval and a quality management scheme in accordance with ISO 9001 or 9002.

Performance

Post centres	2.5 m	3.75 m
Impact severity level	A	A
Working Width class	W1 (0.5 m)	W2 (0.7 m)
Wheel penetration	0.3 m	0.3 m
Dynamic deflection	0.3 m	0.4 m

Anchorage load requirements

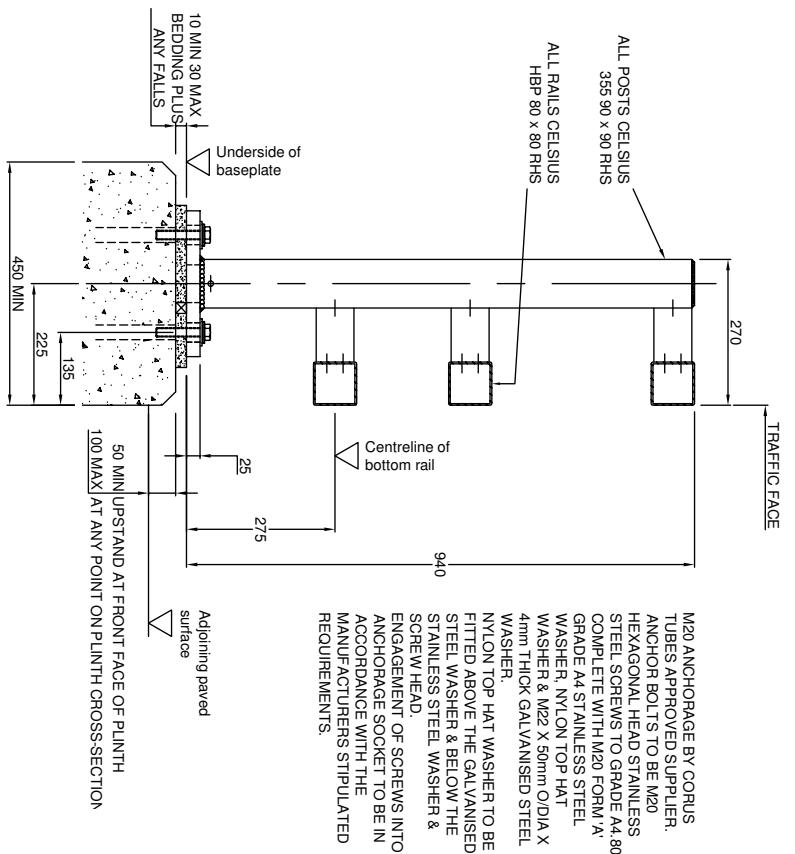
Bolt tensile load 1.5 x nominal	49.5 kN
Test load 1.1 x nominal	36.3 kN
Ultimate limit state 1.8 x nominal	59.4 kN

Structure loads

Post size	90 x 90mm
Post ultimate moment capacity	14.1 kNm
Coexisting shear force	26.0 kN
Post ultimate shear capacity	131.0 kN

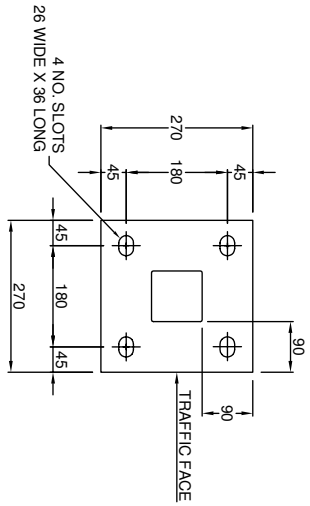
Finishing

Final finish	• Hot dip galvanised to BS EN ISO 1461
Service life	• 30+ years (dependent upon conditions in accordance with specifications for Highways Works Series 400) (Nov 2007)
Options	<ul style="list-style-type: none"> • Infill: Mesh or solid sheet • Available in various heights from 1.0 m up to 1.8 m • Paint finish available if required

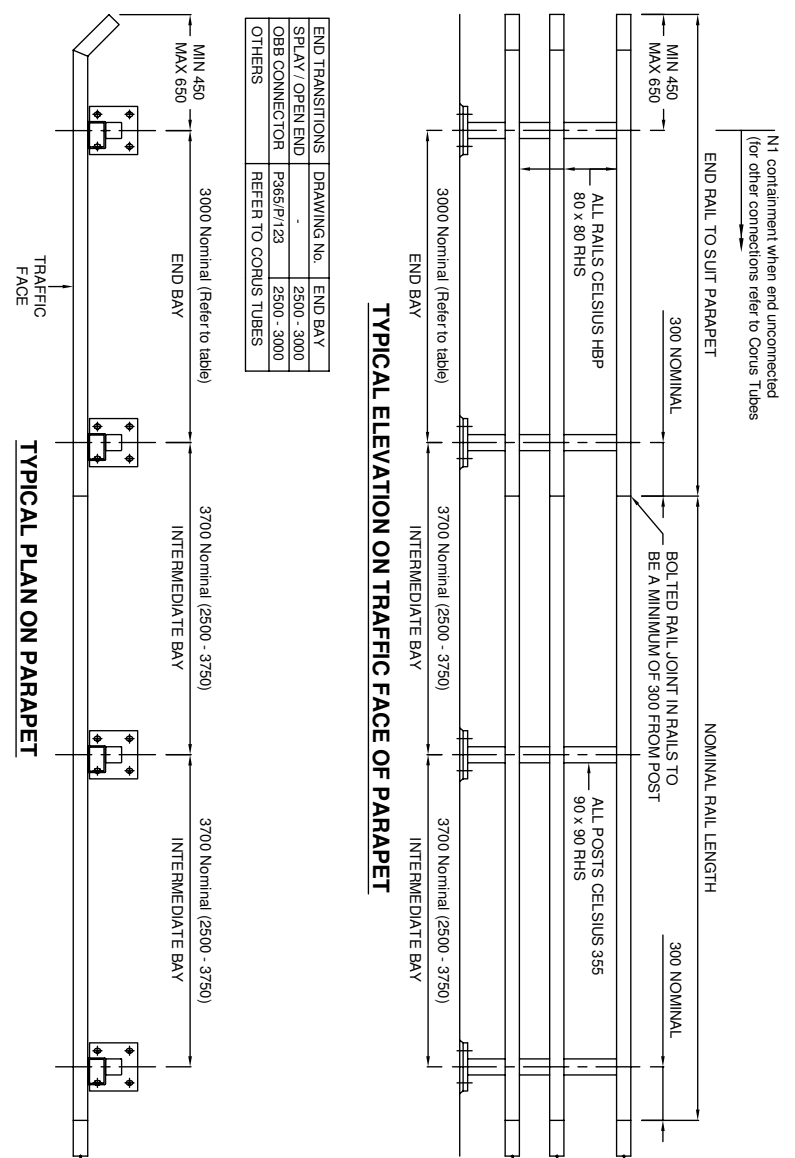


SECTION THROUGH PARAPET

POST ULTIMATE MOMENT CAPACITY TO ALL POSTS 14.1kNm,
COEXISTING SHEAR 26.0kN,
POST ULTIMATE SHEAR CAPACITY 131.0kN



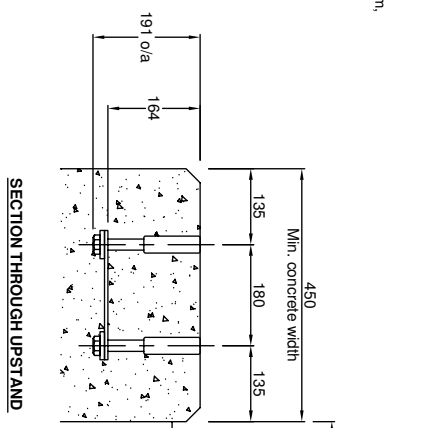
BASEPLATE DETAIL



TYPICAL ELEVATION ON TRAFFIC FACE OF PARAPET

END TRANSITIONS	DRAWING No.	END BAY
SPLAY / OPEN END	-	2500 - 3000
ORB CONNECTOR	P365/P/123	2500 - 3000
OTHERS	REFER TO CORUS TUBES	

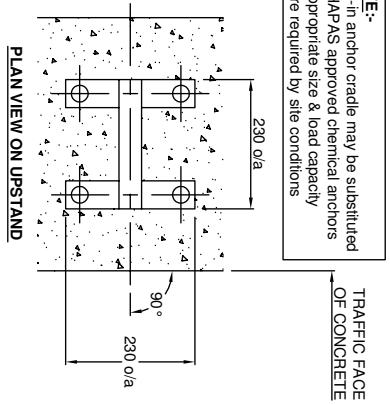
TYPICAL PLAN ON PARAPET



SECTION THROUGH UPSTAND

ANCHOR CRADLE DETAIL

Anchor cradle shown: M20 SSRT70 as manufactured by Fixing Centre Ltd.
(Alternative HAPAS approved anchor cradle of appropriate size & load capacity may also be used.
Dimensions for alternative anchor to be checked with Fabricator)



PLAN VIEW ON UPSTAND

NOTE:-
Cast-in anchor cradle may be substituted for HAPAS approved chemical anchors of appropriate size & load capacity where required by site conditions

GENERAL NOTES

- 1/ RAILS TO BE CELSIUS HBP 80 x 80 RHS AS MANUFACTURED BY CORUS TUBES.
- 2/ ALL OTHER HOLLOW SECTIONS TO BE CELSIUS 355 STRUCTURAL HOLLOW SECTIONS AS MANUFACTURED BY CORUS TUBES.
- 3/ OTHER STEEL SECTIONS TO BE TO GRADES AS NOTED.
- 4/ STAINLESS STEEL HEXAGONAL HEAD SCREWS TO BE GRADE A4 CLASS 80 TO BS EN ISO 3506-1 & BS EN ISO 4017.
- 5/ PLAIN WASHERS TO BE TO BS EN ISO 7089.
- 6/ SPRING WASHERS TO BE TO BS 4464.
- 7/ STEEL WASHERS TO BE GALVANISED TO BS EN ISO 1461.
- 8/ STAINLESS STEEL WASHERS TO BE GRADE A4.
- 9/ POSTS SHALL BE VERTICAL TO WITHIN ±15mm OVER 1000mm.
- 10/ RAILS SHALL BE SET TO GIVE A SMOOTH FLOWING LINE WITH A MINIMUM HEIGHT OF 1000mm FROM ADJOINING PAVED SURFACE TO TOP OF TOP RAIL.
- 11/ POST/RAIL CONNECTION BRACKETS SET TO FOLLOW SLOPE OF RAILS.
- 12/ PARAPET MANUFACTURE & INSTALLATION SHALL ONLY BE CARRIED OUT BY COMPANIES APPROVED & LICENSED BY CORUS TUBES.
- 13/ ALL CARBON STEEL MATERIALS TO BE HOT DIPPED GALVANISED AFTER MANUFACTURE TO BS EN ISO 1461.
- 14/ ALL PLATES TO BE GRADES NOTED TO BS EN 10 025.

Corus Tubes
PO Box 101
Weldon Road
Cotby
Northamptonshire
ENGLAND
NN17 5UA
ENGLAND
Tel: +44 (0)1536 42321
Fax: +44 (0)1536 42049

Rev	Revision note	Date	By
02	Note regarding containment added	Sep '09	JLL
01	Vertical location of rails amended in rev with tested system	Dec '07	JLL

Date	By
Sep '09	JLL
Dec '07	JLL

GENERAL ARRANGEMENT OF
Protect 365™ N1 VEHICLE PARAPET
(80 km/h TRAFFIC SPEED) - P365/P/105
3 Rail system - 1.000m Nominal height

© Corus Tubes - This drawing is the copyright work of Corus Tubes. It may not be copied, in whole or in part, without the prior written consent of Corus Tubes. The design is disclosed in this drawing may be the subject of other intellectual property rights and reproduction of the design shown in this drawing without the prior written consent of Corus Tubes may infringe intellectual property rights.

Title	Issue	Date	By	Rev
STANDARD DETAILS OF N1 VEHICLE PARAPET TO BS EN 1317-1, 2 & 5 (General details) P365/P/105	JLL	Sep 2006	JLL	02
	Checked	Sep 2006	T.R.M.	
	Approved	Sep 2006	T.R.M.	