Protect 365® H4a Parapet to N2 Parapet

Transitions

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) to meet the requirements of BS EN 1317.

Improved safety performance.

Containment level	N2
Post centres	3.75 m
Distance between H4a parapet and N2 parapet end posts	7.5 m
Grout bedding (plus any falls)	10 to 30 mm

Availability

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

Performance

Impact severity level	B
Working width class	W3 (1.0 m)
Wheel penetration	0.5 m
Dynamic deflection	0.5 m

Anchorage load requirements

	Transition Post
Bolt tensile load 1.5 x nominal	61.5 kN
Test load 1.1 x nominal	45.1 kN
Ultimate limit state 1.8 x nominal	73.7 kN

Structure loads

	Transition post
Post ultimate moment capacity	19.8 kNm
Coexisting shear force	36.8 kN
Post ulltimate shear capacity	164.9 kN

Finishing

Final finish	• Hot dip galvanised to BS EN ISO 1461
Service life	• 30+ years (dependent upon conditions in accordance with specification for highway works series 400) (Nov 2007)
Options	• Paint finish available

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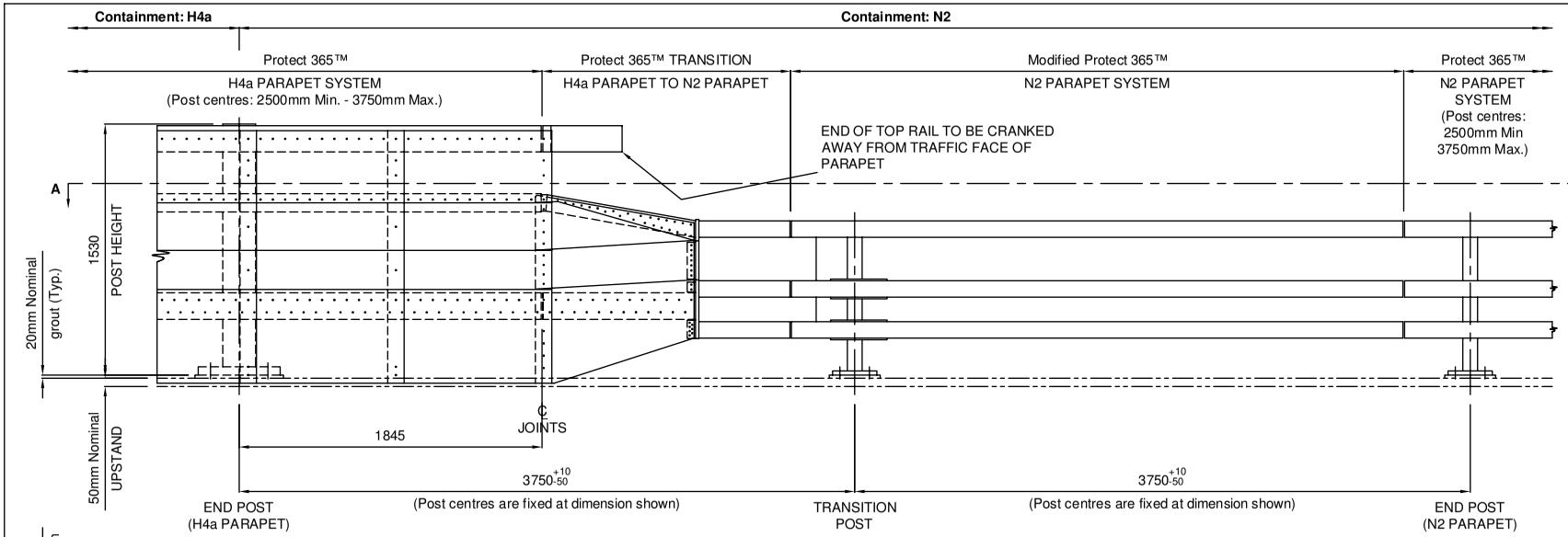
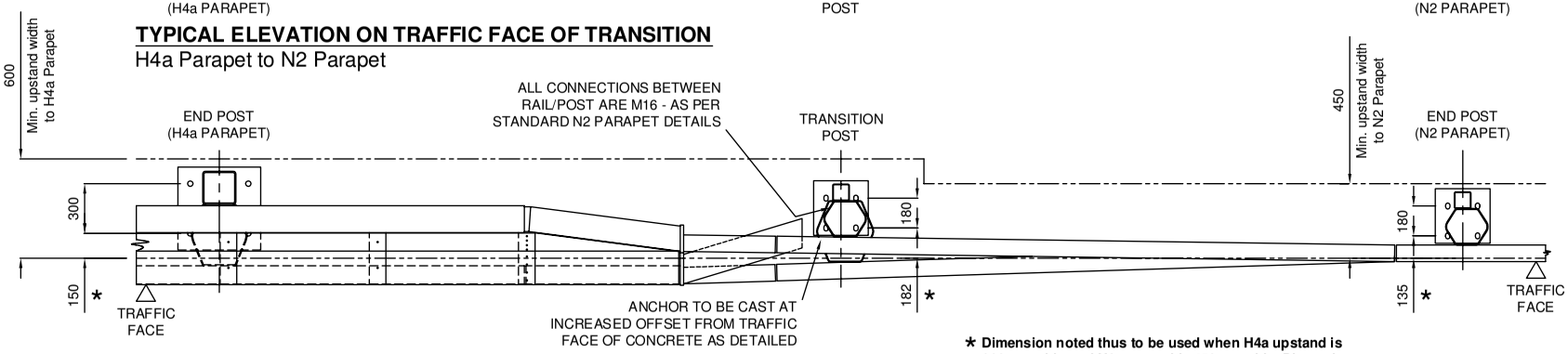
CT70-2:PDF:11/2009



NOTE:-
Details shown are for **Departure** end of parapet. Details for Approach end of parapet opposite hand

TYPICAL ELEVATION ON TRAFFIC FACE OF TRANSITION

H4a Parapet to N2 Parapet



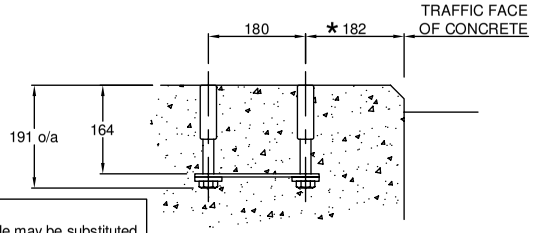
*** Dimension noted thus to be used when H4a upstand is 600mm wide and N2 upstand is 450mm wide. Dimension may be adjusted to suit larger upstand widths**

VIEW ON A-A

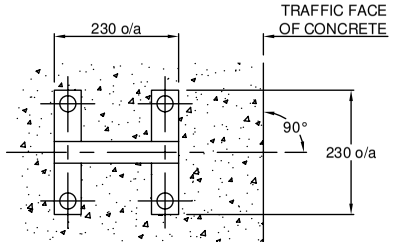
PLAN ON TRANSITION

POST TYPE	ULTIMATE MOMENT CAPACITY (kNm)	COEXISTING SHEAR (kN)	ULTIMATE SHEAR CAPACITY (kN)
H4a Parapet post	125	135	515
Transition post	19.8	36.1	164.9
N2 Parapet post	19.8	36.1	164.9

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



SECTION THROUGH UPSTAND



PLAN VIEW ON UPSTAND

ANCHOR CRADLE DETAIL TO TRANSITION POST

Anchor cradle shown: M20 SSR170 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)

GENERAL NOTES

1/. **ALL** RAILS TO BE CELSIUS HBP (SECTION SIZES AS NOTED) 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.
PLAIN WASHERS TO BE TO BS EN ISO 7089.
SPRING WASHERS TO BE TO BS 4464.
STEEL WASHERS TO BE GALVANISED TO BS EN ISO 1461.
STAINLESS STEEL WASHERS TO BE GRADE A4.
5/. POSTS SHALL BE VERTICAL TO WITHIN ±15mm OVER 1000mm.
6/.RAILS SHALL BE SET TO GIVE A SMOOTH FLOWING LINE
7/. POST/RAIL CONNECTION BRACKETS SET TO FOLLOW SLOPE OF RAILS.
8/. TRANSITION INSTALLATION SHALL ONLY BE CARRIED OUT BY COMPANIES APPROVED & LICENSED BY CORUS TUBES.
9/. ALL CARBON STEEL MATERIALS TO BE HOT DIPPED GALVANISED AFTER MANUFACTURE TO BS EN ISO 1461.
10/. ALL PLATES TO BE GRADES AS NOTED TO B.S EN 10 025

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Rev.	Revision note	Date	Sign

GENERAL ARRANGEMENT OF Protect 365 ™ H4a PARAPET TO N2 PARAPET TRANSITION - P365/T/009

Title	STANDARD DETAILS OF H4a PARAPET TO N2 PARAPET TRANSITION TO BS EN 1317-1, 4 & 5 (General details) P365/T/009		
Drawn	J.L.L	Date	June 2008
Checked	T.R.M	Date	June 2008
Approved	T.R.M	Date	June 2008
Drg. No.	P365/T/109	Rev.	00