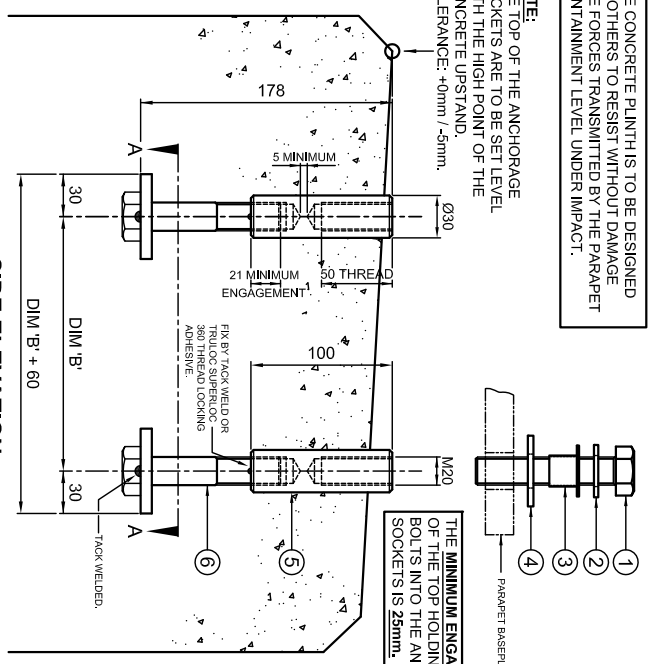


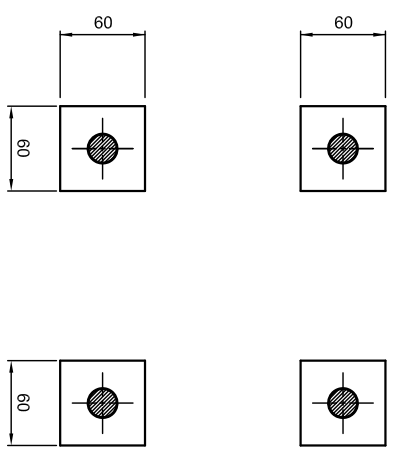
THE CONCRETE PUNTH IS TO BE DESIGNED BY OTHERS TO RESIST WITHOUT DAMAGE THE FORCES TRANSMITTED BY THE PARAPET CONTAINMENT LEVEL UNDER IMPACT.

**NOTE:**  
THE TOP OF THE ANCHORAGE SOCKETS ARE TO BE SET LEVEL WITH THE HIGH POINT OF THE CONCRETE UPSTAND.  
TOLERANCE: +0mm / -5mm.



THE MINIMUM ENGAGEMENT OF THE TOP HOLDING DOWN BOLTS INTO THE ANCHORAGE SOCKETS IS 25mm.

**SIDE ELEVATION.**



**SECTION A-A.**

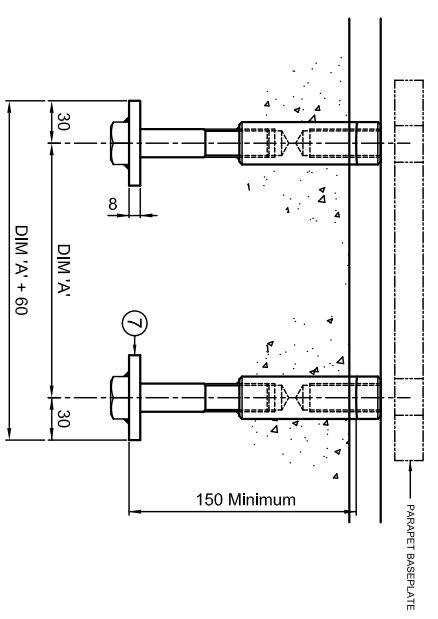
**INSTALLATION PROCEDURE:**

1. THE ANCHOR EMBEDMENT DEPTH IN THE CONCRETE MUST BE NOT LESS THAN 150mm.
2. IF THE PARAPET CROSSFALL AND / OR LONGFALL EXCEEDS A TOTAL OF 20mm BETWEEN SOCKET CENTRES, THE ANCHORAGE MUST BE SET TO ENSURE THAT THE STAINLESS STEEL SOCKET HAS A MINIMUM EMBEDMENT OF 80mm.
3. ANCHORAGES ARE SUPPLIED WITH A PLYWOOD TEMPLATE AND CARBON STEEL BOLTS FOR FIXING TO FORMWORK. THE PLYWOOD IS TO BE NAILLED TO THE SHUTTERING BEFORE POURING. IF IT IS NECESSARY TO REMOVE THE PLYWOOD THIS SHOULD NOT BE DONE UNTIL THE CONCRETE IS SET SUFFICIENTLY TO PREVENT ANY DISTURBANCE OF THE ANCHORAGE.
4. WHEN ANCHORAGES ARE SENT TO CONCRETE PRECASTERS ANCHORAGE CENTRES ARE SET AND THE TOP SOCKET THREADS ARE FITTED WITH PLASTIC CAPS OR PLUGS.
5. THE CARBON STEEL BOLTS MUST BE REPLACED IN THE SOCKETS. TO ENSURE THAT THE SOCKET THREADS ARE KEPT CLEAN.
6. APPLY HIGH GREEP RESISTANT GREASE TO SOCKET THREADS AFTER CLEANING BUT PRIOR TO INSERTING THE STAINLESS STEEL HOLDING DOWN BOLT. (ROCOOL J168 OR SIMILAR).
7. FOR PARAPET ERECTION SEQUENCE REFER TO PRODUCT SPECIFICATION MANUALS.
8. THE LENGTH OF TOP BOLT TO BE DETERMINED BY THE PARAPET INSTALLER. TO SUIT SITE CONDITIONS. TO ENSURE A MINIMUM THREAD ENGAGEMENT OF 25mm.
9. FOR ALUMINIUM PARAPETS THE NYLON TOP HAT WASHERS IS TO BE PLACED BETWEEN THE STAINLESS STEEL WASHER AND THE ALUMINIUM BASEPLATE.
10. FOR STEEL PARAPETS THE NYLON WASHERS IS TO BE PLACED BETWEEN THE UNDERSIDE OF THE BOLT HEAD AND THE GALVANISED STEEL WASHER.

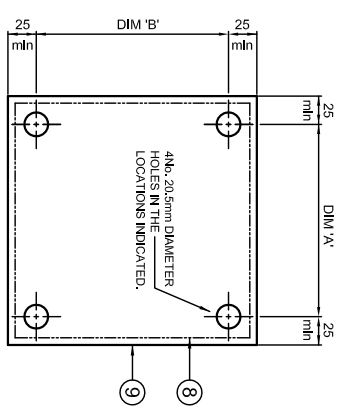
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**M20 CAST-IN ANCHORAGE SPECIFICATION.**

A/.	THIS ANCHORAGE IS DESIGNED AND SPECIFIED IN COMPLIANCE WITH:	<b>Material.</b>	
A.1	THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOLUME 1, SERIES 400.	1. Parapet Holding Down Fixing: M20 x Suitable length Hexagonal Head Setcrew. BS.3643-2: 2009	
A.2	BS.6779-1:1998 HIGHWAY PARAPETS FOR BRIDGES AND OTHER STRUCTURES.	2. M20 Flat Washer Form 'A'. To BS.4320: 1968 and Stainless Steel Grade A4 to BS. ENISO 3506-1: 2009	
B.	ANCHORAGE IS ONLY FOR USE WITH THE APPROPRIATE VAG VEHICLE RESTRAINT SYSTEMS.	3. M20 Nylon Top Hat Washer. Nylon 66.	
C/.	THREAD TOLERANCES: ANCHOR SOCKET INTERNAL - CLASS 6H MEDIUM FIT TO BS.3643-2: 2007.	4. M20 x 23 lid x 50 old x 4mm Galvanised Washer. (For use with Steel Parapets only.) To BS.4320: 1968 and Galvanised to BS. ENISO 1461.	
D/.	THE HOLDING DOWN SETSCREWS - CLASS 6g MEDIUM FIT TO BS.3643-2: 2007.	5. Anchorage Coupler. 30mm Diameter Bar - SSR550 Stainless Steel grades 1.4401, 1.4436 OR 1.4362 (Duplex) to BS. 10098-1:2005.	
E/.	ALL WELDS TO BE IN ACCORDANCE WITH BS. EN. 1011-3:2000. THE ANCHORAGE FINISH IS SELF COLOUR.	6. M20x100 Hexagonal Head Bolt. High Tensile Steel Class 8.8 to BS.3692:20101.	
Item No.	Description.	7. 60x60x8 Anchorage Base plate. Carbon Steel to BS. EN. 10025-1 and 2: 2004 grade S275JR.	
1.	Parapet Holding Down Fixing: M20 x Suitable length Hexagonal Head Setcrew.	8. 1.5mm thick steel setting template. Carbon Steel to BS. EN. 10025-1 and 2: 2004 grade S275JR.	
2.	M20 Flat Washer Form 'A'.	9. Plywood Template. FSC Softwood plywood board or similar.	
3.	M20 Nylon Top Hat Washer.	<b>MATERIAL SPECIFICATION.</b>	
4.	M20 x 23 lid x 50 old x 4mm Galvanised Washer. (For use with Steel Parapets only.)	<b>SSR-500 STAINLESS STEEL CONNECTOR.</b>	
5.	Anchorage Coupler.	MINIMUM 0.2% PROOF STRESS = 550 N/mm <sup>2</sup> .	
6.	M20x100 Hexagonal Head Bolt.	MINIMUM ULTIMATE TENSILE STRENGTH = 650 N/mm <sup>2</sup> .	
7.	60x60x8 Anchorage Base plate.	<b>GRADE 8.8 HIGH TENSILE STEEL BOLTS TO BS.3692:2001</b>	
8.	1.5mm thick steel setting template.	MINIMUM YIELD STRENGTH = 640 N/mm <sup>2</sup> .	
9.	Plywood Template.	MINIMUM TENSILE STRENGTH = 800 N/mm <sup>2</sup> .	
		<b>CARBON STEEL TO BS. EN. 10025-1 &amp; 2:2004 GRADE S275JR.</b>	
		MINIMUM YIELD STRENGTH = 275 N/mm <sup>2</sup> .	
		MINIMUM ULTIMATE TENSILE STRENGTH = 410 N/mm <sup>2</sup> .	



**FRONT ELEVATION.**



**PLYWOOD TEMPLATE.**

1.5mm THICK STEEL SETTING TEMPLATE TO BE PLACED BETWEEN THE TOP OF THE ANCHORAGE SOCKET AND THE PLYWOOD TEMPLATE.

ALL DIMENSIONS IN MM.

SCALE	DATE	06/04/2011
DRN   P.G.H.	CHK   D.V.C.	
TITLE		
STANDARD ARRANGEMENT DRAWINGS OF M20 ANCHORAGE UNIT TYPE 1.		

Revised	By	Description
B	Apr 11	dvc
Redrawn with minor amendments.		
MANUFACTURING TOLERANCES AS SHOWN UNLESS STATED OTHERWISE.		
DIMENSIONS: TOLERANCES:		
GREATER THAN ± 2mm		
LESS THAN ± 1mm		
1000mm ± 0.15°		
ANGULAR DIMENSIONS:		
NOTE: ALL ACCUMULATIVE TOLERANCES ARE TO BE CONTAINED WITHIN THE OVERALL TOLERANCE.		
SITE ERECTION TOLERANCES:		
WILL VARY TO SUIT SITE CONDITIONS.		
ALL STANDARDS QUOTED ARE DEEMED CURRENT AT THE DATE THE DRAWING IS ISSUED FOR APPROVAL, UNLESS OTHERWISE STATED.		
THE DRAWING TO BE USED ONLY WITH:		
<b>W.O.N.O.</b>		
DRAWING TO BE RETURNED TO ISSUING OFFICE ON COMPLETION OF WORK		
<b>Varley and Gulliver Ltd.</b> Alfred Street, Spacknook, Birmingham B12 5UR Tel. 44 (0) 121 773 2441 Fax. 44 (0) 121 766 8875 Website: www.vandg.co.uk		
DRAWING NUMBER		
VGAS - 1.B.		