

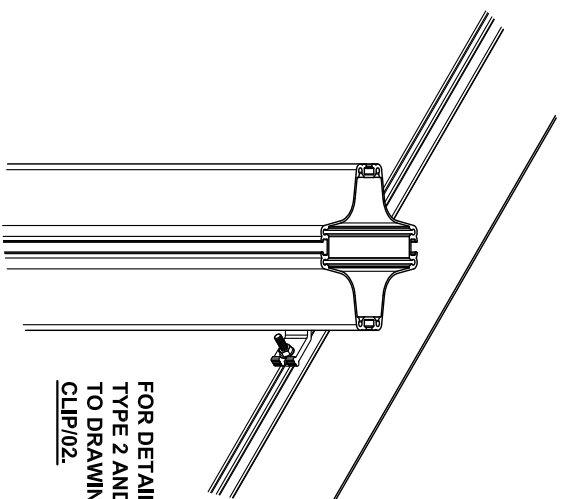
**MULTI LEG SUPPORT.**

HIMAST H500 PASSIVE MAST INFORMATION.						
Section Size (mm)	Section Weight (kg/m)	Baseplate Weight (kg)	Bending Capacity (kNm)	Bending Stiffness (kNm <sup>2</sup> )	Torsional Capacity (kNm)	Torsion Stiffness (kNm <sup>2</sup> )
125 x 125	5.61	7.50	11.70	164	13.6	63.88
						61

**GENERAL NOTES.**

- 1/ THE MINIMUM EDGE DISTANCE SHOWN FOR ANCHORAGES IS TO ELIMINATE ANY REDUCTION FACTORS.
- 2/ SIGN FOUNDATION TO BE PROVIDED BY OTHERS AND CAN PROTRUDE ABOVE GROUND LEVEL BY A MAXIMUM OF 50mm.
- 3/ THE FOUNDATION DESIGN IS THE RESPONSIBILITY OF THE SCHEME DESIGNER. THE FOUNDATION SHALL BE DESIGNED AS RIGID IN ACCORDANCE WITH ANNEX A.2 OF BS.EN.12767:2007.
- 4/ SIGNAGE TO BE PROVIDED AND INSTALLED BY OTHERS. SIGN MATERIAL, CHANNEL TYPE AND CHANNEL SPACINGS COULD AFFECT THE POST LOCATIONS.

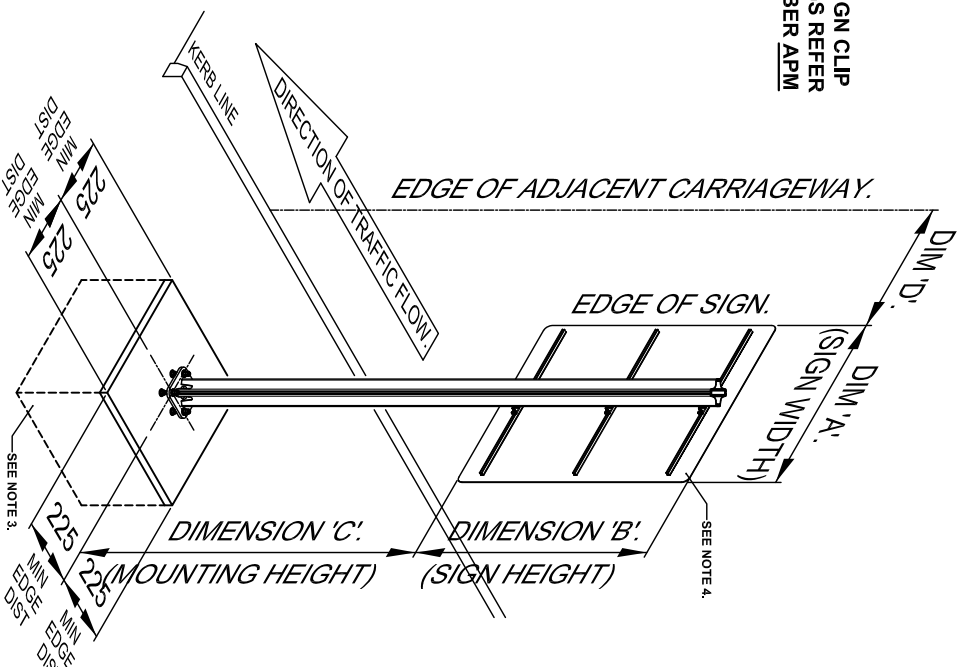
- 5/ FABRICATION TO BE IN ACCORDANCE WITH BS.8118-2.
- 6/ AN EASILY LEGIBLE IDENTIFICATION PLATE SHALL BE APPLIED AND LOCATED APPROXIMATELY 1.5m ABOVE THE BASEPLATE IN AN EASILY VISIBLE POSITION.



FOR DETAILS OF SIGN CLIP TYPE 2 AND FIXINGS REFER TO DRAWING NUMBER APM CLIP/02.

**ENLARGED VIEW ON SIGN ATTACHMENT.**

HIMAST H500 PASSIVE MAST PERFORMANCE.	
BS.EN.12767:2007.	
IMPACT TEST CRITERIA.	35 km/h and 100 km/h
ENERGY ABSORPTION CATEGORY.	NE
SPEED CLASS.	100
OCCUPANT SAFETY LEVEL.	2



**SINGLE LEG SUPPORT.**

MINIMUM INFORMATION TO BE PROVIDED FOR PASSIVE MASTS.		
	SINGLE LEG SIGN	MULTI LEG SIGN
DIMENSION 'A' - SIGN WIDTH	■	■
DIMENSION 'B' - SIGN HEIGHT	■	■
DIMENSION 'C' - SIGN MOUNTING HEIGHT	■	■
DIMENSION 'D' - DISTANCE FROM SIGN EDGE TO CARRIAGEWAY	■	■
POST CENTRES.	■	■
SIGN LOCATION.	■	■

**MATERIAL SPECIFICATION.**

ITEM	SPECIFICATION
COLUMN AND SIGN CLIP.	ALL EXTRUSIONS ARE TO BE ALUMINIUM ALLOY IN ACCORDANCE WITH BS.EN.5745, BS.EN.573-3, BS.EN.573-4, BS.EN.755-1, BS.EN.755-2, BS.EN.755-3, BS.EN.755-7 AND BS.EN.755-9, WITH A MINIMUM PROOF STRESS OF 210N/mm <sup>2</sup> FOR THE COLUMN SECTION.
BASEPLATE.	BASEPLATE TO BS.EN.10025 GRADE S355J2G3, HOT DIPPED GALVANISED TO BS.EN.ISO.1461.
BOLTS.	FOR HOLDING DOWN STUDS SPECIFICATION REFER TO DRAWING NUMBER FCL.686. M8 SETSCREWS TO CONFORM TO BS.EN.ISO.4017 AND BE STAINLESS STEEL TO GRADE A4 B7 MAX 109.
NUTS.	FOR HOLDING DOWN NUTS REFER TO DRAWING NUMBER FCL.686. M8 NUTS TO CONFORM TO BS.3692 AND BE STAINLESS STEEL TO BS.EN.ISO.3506-2 GRADE A2 OR SIMILAR.
PLAIN WASHERS.	FOR HOLDING DOWN BOLT WASHERS REFER TO DRAWING NUMBER FCL.686. M12 AND M8 FORM 'C' WASHERS TO BS.4320 AND TO BE STAINLESS STEEL TO BS.EN.ISO.3506 GRADE A4 OR A2.



CE  
No. 0086-CPE-565203

**SECTION SCHEDULE**

1	COLUMN SECTION 113618
2	SIGN CLIP SECTION 111501
3	BASEPLATE SECTION



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Website: www.v-and-g.co.uk

DRAWING NUMBER

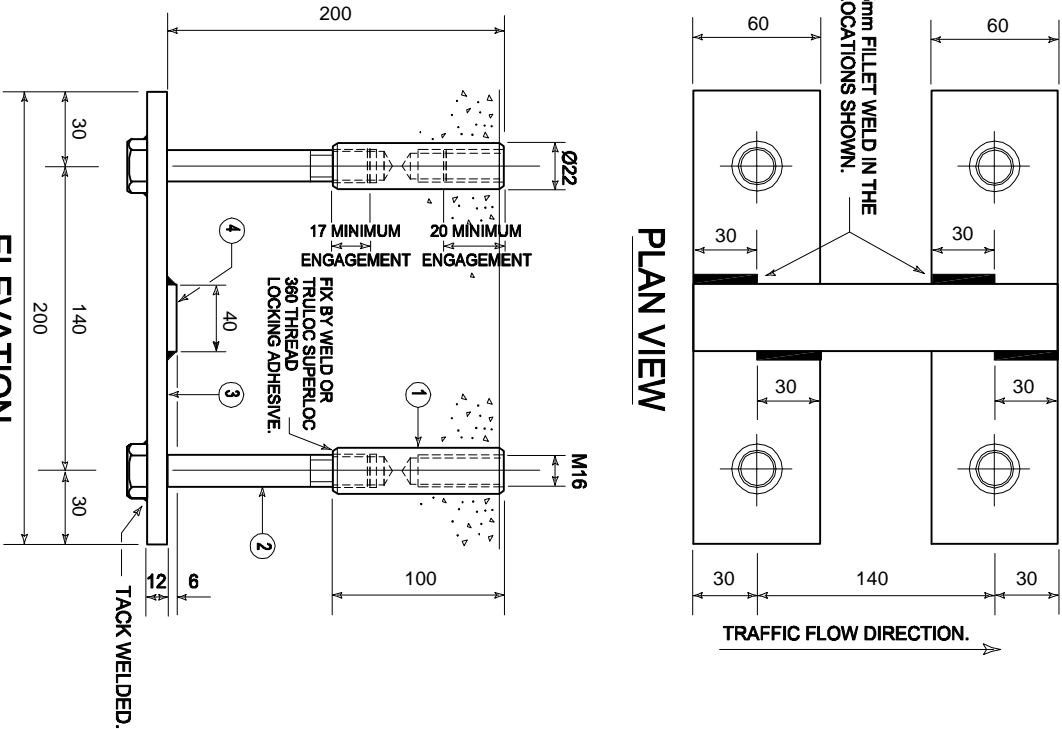
STANDARD ARRANGEMENT DRAWINGS OF HIMAST H500 ALUMINIUM PASSIVE MAST.

APM H500 - 01A.

ALL DIMENSIONS IN MM.

**H500 CAST-IN ANCHORAGE SPECIFICATION**

- A./ THIS ANCHORAGE IS DESIGNED AND SPECIFIED IN COMPLIANCE WITH:  
A.1 THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY 9/06)  
REQUIREMENT FOR ROAD RESTRAINT SYSTEMS A.2 BS.6779-1:1998 HIGHWAY PARAPETS FOR BRIDGES AND OTHER STRUCTURES,  
A.3 BD 94/07 DESIGN OF MINOR STRUCTURES,  
B./ CHARACTERISTIC ANCHORAGE RESISTANCE = 106kN, DESIGN RESISTANCE PER SOCKET = 195kN,  
C./ THE SOCKET THREADS MUST BE LINED WITH HIGH CREEP RESISTANT GREASE PRIOR TO INSERTION OF THE BOLT TO FACILITATE FUTURE MAINTENANCE OF THE ANCHORED COMPONENT.  
D./ THREAD TOLERANCES.  
E./ ANCHOR SOCKET INTERVAL - CLASS 6H MEDIUM FIT TO BS.3643:2:2007.  
F./ ALL WELDS TO BE IN ACCORDANCE WITH BS.EN.1011-3:2000.  
G./ HOLDING DOWN BOLTS:  
USE SSR170 ADJUSTMENT STUD SETS AS DETAILED ON DRAWING NUMBER FCL 686.  
CONCRETE FOUNDATIONS TO BE REINFORCED AND A MINIMUM CONCRETE GRADE OF C25/30.



- INSTALLATION PROCEDURE:**
1. THE PLYWOOD IS TO BE NAILED 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. THE BOLTS MUST BE REPLACED IN THE SOCKETS TO ENSURE THAT THEY ARE NOT LOST. ALL SOCKET THREADS ARE TO BE KEPT CLEAN.
  2. APPLY HIGH CREEP RESISTANT GREASE TO SOCKET THREADS BEFORE INSERTING BOLT.
  3. ANCHORAGE UNITS ARE SUPPLIED WITH PLYWOOD TEMPLATE FOR FIXING TO FORMWORK.

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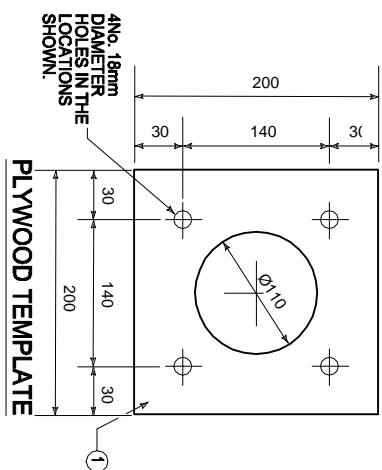
Item No.	Description.	Material.
1.	SSR 100 Anchorage Socket.	22mm Diameter Bar - SSR550 Stainless Steel grades 1.4401, 1.4436 OR 1.4302 (Duplex) to BS.10088-1:2005.
2.	M16 Hexagonal Head Bolt.	High Tensile Steel Class 8.8 to BS.3692:2001.
3.	Anchorage Base Straps.	Carbon Steel to BS.EN.10025-1 and 2:2004 grade S275JR.
4.	Anchorage Base Straps connecting straps.	Carbon Steel to BS.EN.10025-1 and 2:2004 grade S275JR.
5.	Plywood Template.	FSC Softwood plywood board or similar.

**MATERIAL SPECIFICATION.**

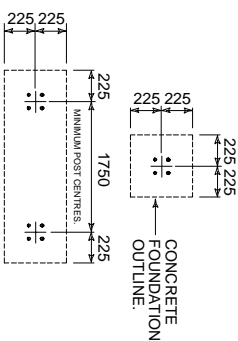
SSR-650 STAINLESS STEEL CONNECTOR.  
MINIMUM 0.2% PROOF STRESS = 550 N/mm<sup>2</sup>  
MINIMUM ULTIMATE TENSILE STRENGTH = 650 N/mm<sup>2</sup>

GRADE 8.8 HIGH TENSILE STEEL BOLTS TO BS.3692:2001  
MINIMUM YIELD STRENGTH = 640 N/mm<sup>2</sup>  
MINIMUM TENSILE STRENGTH = 800 N/mm<sup>2</sup>

CARBON STEEL TO BS.EN.10025-1 & 2:2004 GRADE S275JR.  
MINIMUM YIELD STRENGTH = 275 N/mm<sup>2</sup>  
MINIMUM ULTIMATE TENSILE STRENGTH = 410N/mm<sup>2</sup>



**MINIMUM EDGE DISTANCES.**  
(TO ELIMINATE REDUCTION FACTORS)



ISSUE	MODIFICATION	BY	DATE

**Fixing Centre Limited**  
Stainless Steel Civil Engineering Solutions

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CLIENT  
**VARLEY & GULLIVER LTD**

TITLE  
**M16 - SSR-170 CRADLE ANCHOR**  
TYPE H500 MAST

DRN. & CHD BY DATE SCALE  
RL 15.07.2010 N.T.S.

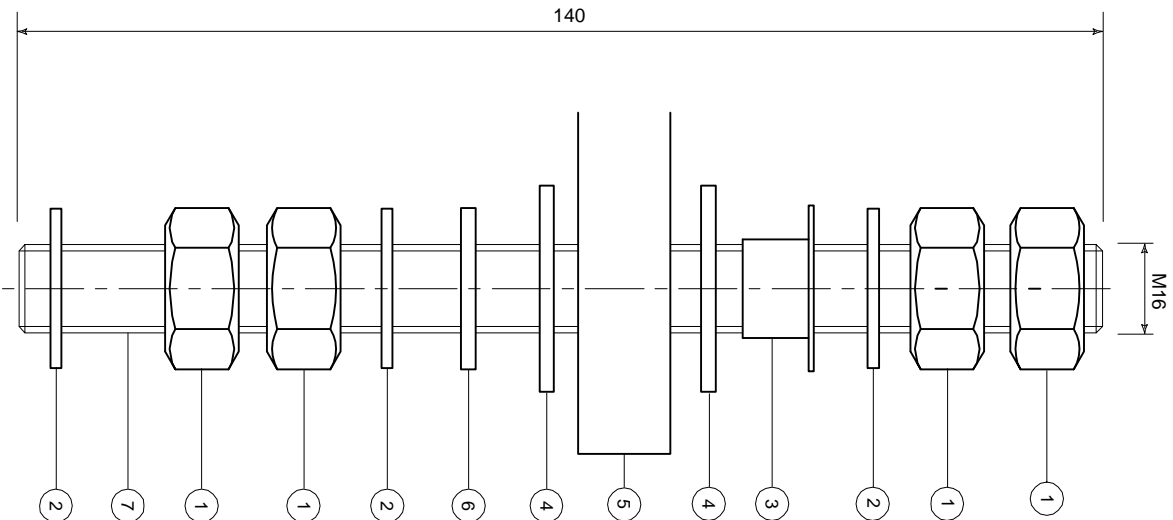
DRAWING NO. **FCL685** REVISION -

**SSR 170 ADJUSTMENT STUD SETS**

Item No.	Description.	Material.
1.	M16 Hexagonal Full Nuts	Stainless Steel Class A4-80 to BS.EN.ISO.3506-2:1998
2.	M16x30x3mm Flat Washers	A4 Stainless Steel Form A to BS 4320:1968
3.	M16 Nylon Top Hat Isolation Washers	Nylon 66
4.	M18x54x4mm Flat Washers	Galvanised Steel to BS 4320:1968
5.	20mm Galvanised Steel Base Plate	To Varley and Gulliver Specification
6.	M16 Nylon Flat Washer	Nylon 66
7.	M16x140mm Long All Thread Stud	Stainless Steel Class A4-80 to BS.EN.ISO.3506-1:1997

**INSTALLATION PROCEDURE**

1. SCREW THE TREADED STUD INTO THE ANCHOR SOCKET BY HAND, ENSURING THAT THE MINIMUM ENGAGEMENT OF THREAD IS 20mm. IT IS RECOMMENDED THAT HIGH CREEP RESISTANT GREASE IS APPLIED TO THE INTERNAL THREAD BEFORE INSERTING THE STUD.
2. PLACE A STAINLESS STEEL WASHER OVER THE STUD. SCREW A HEXAGON NUT DOWN THE STUD UNTIL THE WASHER IS IN CONTACT WITH THE CONCRETE SURFACE. TIGHTEN THE CONNECTION BUT DO NOT OVER TORQUE.
3. THREAD A SECOND HEXAGON NUT ONTO THE STUD AND SCREW DOWN TO THE LOWER PART BUT DO NOT TIGHTEN.
4. PLACE A STAINLESS STEEL WASHER FOLLOWED BY THE NYLON ISOLATOR WASHER AND FINALLY A GALVANISED WASHER OVER THE NUT. ENSURE THAT THIS SEQUENCE IS STRICTLY FOLLOWED.
5. WHEN ALL THE STUDS ARE FITTED IN THE ANCHORS FOLLOWING THE ABOVE SEQUENCE, THE COLUMN BASE PLATE CAN BE PLACED OVER THE PROJECTING RODS. THE LEVEL CAN BE ADJUSTED USING THE HEXAGON NUT BELOW THE PLATE.
6. WHEN THE LINE AND LEVEL HAVE BEEN SET PLACE THE SECOND GALVANISED WASHER OVER THE STUD. NEXT POSITION THE NYLON TOP HAT ISOLATOR WASHER ON THE STUD ENSURING THAT THE SHANK PASSES THROUGH THE OVERSIZE HOLE IN THE WASHER AND INTO THE DRILLED HOLE OR SLOT IN THE BASE PLATE. FINALLY PLACE THE STAINLESS STEEL WASHER OVER THE NYLON TOP HAT WASHER.
7. SCREW THE THIRD HEXAGON NUT ONTO THE STUD AND TIGHTEN TO A TORQUE WITHIN THE RANGE 25 TO 40Nm.
8. SCREW ON THE FOURTH HEXAGON NUT AND LOCK ONTO THE THIRD NUT USING A SPANNER.



ISSUE	MODIFICATION	BY	DATE

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Stainless Steel Civil Engineering Solutions

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CLIENT		<b>VARLEY &amp; GULLIVER LTD</b>
TITLE		<b>M16 - SSR-170 STUD SET CLASS A4-80 (HOLDING DOWN BOLT DETAIL OF H500 MAST)</b>
DRN. & CHD BY	DATE	SCALE
RL	15.07.2010	N.T.S.
DRAWING NO.	<b>FCL686</b>	
REVISION	-	