

# SIRIUS OBSERVATORIES

## SCHOOL MODEL : 3.5 METRE DIAMETER

### DESIGN REQUIREMENTS :

THIS STRUCTURE IS COMPLIANT WITH THE REQUIREMENTS OF PART B1 OF THE BUILDING CODE OF AUSTRALIA AND THE NEW ZEALAND BUILDING CODE. THE FOLLOWING STANDARDS ARE INCORPORATED BY REFERENCE :

AUSTRALIAN OR NEW ZEALAND STANDARDS (AS/NZS)

#### STRUCTURAL DESIGN ACTIONS

■ 1170.0	PART 0 :	GENERAL PRINCIPALS
■ 1170.1	PART 1 :	PERMANENT, IMPOSED, AND OTHER ACTIONS
■ 1170.2	PART 2 :	WIND ACTIONS
■ 1170.3	PART 3 :	SNOW LOADS
■ 1170.4	PART 4 :	EARTHQUAKE LOADS

### DESIGN LOADINGS

COMBINATIONS OF THE MOST ADVERSE DESIGN LOADINGS LISTED BELOW WERE USED TO DETERMINE THE SUITABILITY OF THE STRUCTURE AT A PARTICULAR SITE.

#### LIVE LOAD

ROOF LIVE LOAD 0.5 KILOPASCALS (KPa)

#### WIND LOAD

SITE IMPORTANCE LEVEL 1

ANNUAL PROBABILITY OF EXCEEDANCE 1/100

WIND SPEED 225 KPH

REGIONAL WIND SPEED, V 100 63 METRES PER SECOND (M/S), REGION A (1 TO 5), NON-CYCLONIC,

SNOW LOAD TERRAIN CATEGORY 3.

GROUND SNOW LOAD 4.8 KPa

#### EARTHQUAKE LOAD

IMPORTANCE FACTOR 1 = 10

(ISOLATED STRUCTURE, LOW HAZARD)

ACCELERATION COEFFICIENT 0.09

PROBABILITY FACTOR OF EXCEEDANCE 0.3

SITE FACTOR, S 1.0

DESIGN SUITABLE FOR DESIGN CATEGORY E

STRUCTURE IS SUITABLE FOR OTHER COMBINATIONS OF LOADS. CONTACT THE MANUFACTURER FOR SITE-SPECIFIC DESIGN COMBINATIONS.

### GENERAL NOTES :

INSTALL OBSERVATORY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.

### MATERIAL SPECIFICATIONS :

OBSERVATORY IS CONSTRUCTED USING FIBREGLASS MATERIALS CONFORMING TO THE FOLLOWING MATERIAL AND PERFORMANCE SPECIFICATIONS :

LAMINATE	LOCATION	ROVING OR CHOPPED STRAND MAT. (CSM).		FIBRECORE OR FOAM CORE		THICKNESS INCLUDING GELCOAT (MM)	ELASTIC MODULUS (GPa)	TENSILE STRESS (MPa)	COMPRESSIVE STRESS (MPa)	FLEXURAL STRESS (MPa)
		LAYERS	(GM/M2)	(LAYERS)	(MM)					
A	DOME AND WALL PANEL	5	300			4.0	5.8	79	103	95
B	JOIN LAMINATE	8	300			6.0	6.1	83	112	91
C	DOME STIFFENER.	5	300			10.0	5.1	53	56	89
D		10	300			7.4	6.1	84	114	90

### LEGEND :

GM/M.2	GRAMS PER SQUARE METRE
MM.	MILLIMETRES.
MPa	MEGAPASCALS
GPa	GIGAPASCALS
KPH	KILOMETERS PER HOUR

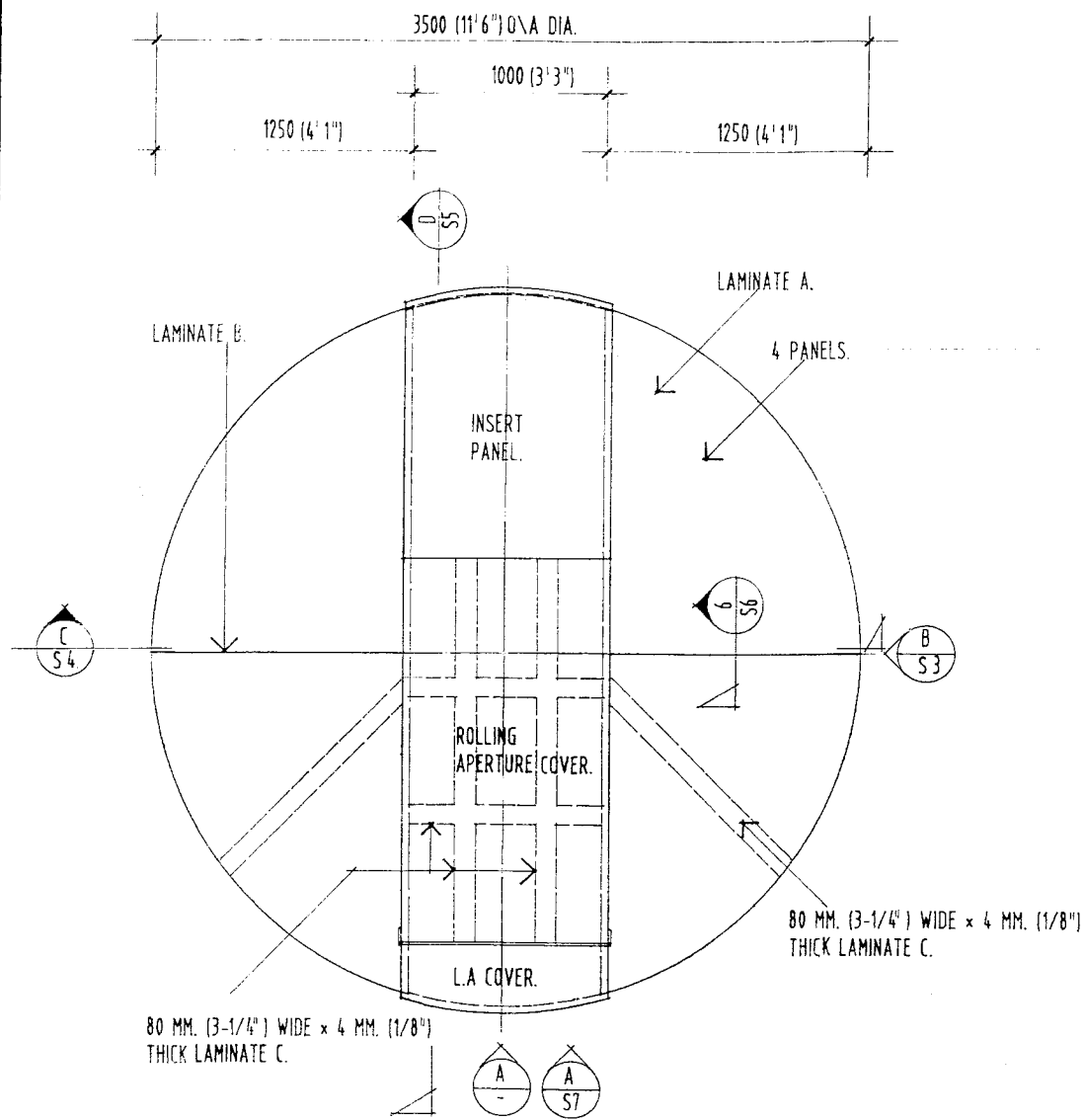
### HOLDING DOWN ANCHORS (FASTENERS) :

INSTALL CONCRETE ANCHOR BOLTS IN ACCORDANCE WITH THE 'INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS EVALUATION REPORT 1372(ICBO ER-1372)' (NO SPECIAL INSPECTION REQUIREMENTS).  
 CONCRETE ANCHOR : RAMSET/RED HEAD TRUBOLT WEDGE.  
 MINIMUM ANCHOR SIZE : M.12.  
 MIN. EDGE DISTANCE FROM CONC : 100 MM.  
 MIN. EMBEDMENT DEPTH : 60 MM.  
 MIN. CONCRETE STRENGTH : 20 MPa.

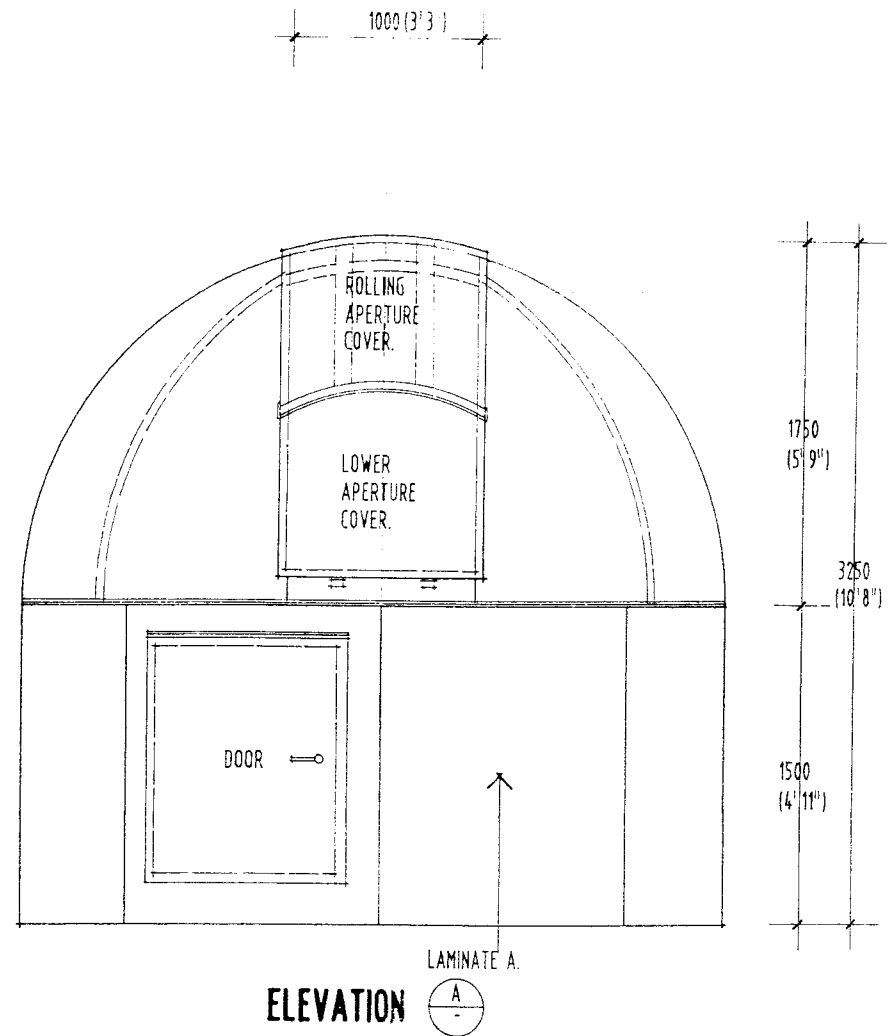
### LIST OF DRAWINGS :

SHEET NO.	DESCRIPTION.
■ S.1.A.	TITLE SHEET.
■ S.2.A.	DOME PLAN & ELEVATION.
■ S.3.A.	PLAN & ELEVATION.
■ S.4.A.	SECTIONS.
■ S.5.A.	DETAILS.
■ S.6.A.	DETAILS.
■ S.7.A.	DOME ONLY INSTALLATION.
■ S.8.A.	HIGH WIND CONNECTIONS.

AMENDMENTS : WIND SPEED IN KPH INCLUDED. S8.A SHEET INCLUDED.	PROJECT : <b>STANDARD ASSEMBLY DETAILS : SCHOOL MODEL ASTRONOMICAL OBSERVATORY.</b>	SIRIUS OBSERVATORIES & PLANETARIUMS AUSTRALIA. A DIVISION OF PENINSULA FIBREGLASS (QLD) PTY. LTD. 33 FILMER STREET. CLONTARF. QUEENSLAND. 4019 AUSTRALIA. PHONE (61) 7 3284 2111. FAX (61) 7 3284 4827. E-MAIL INFO@SIRIUSOBSERVATORIES.COM	CLIENT :	AUSTRALIA.
			TITLE :	TITLE SHEET.
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FLOOR PLAN. : DOME



ELEVATION

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PROJECT : **STANDARD ASSEMBLY DETAILS :**  
**SCHOOL MODEL**  
**ASTRONOMICAL OBSERVATORY.**  
 8.12.04.

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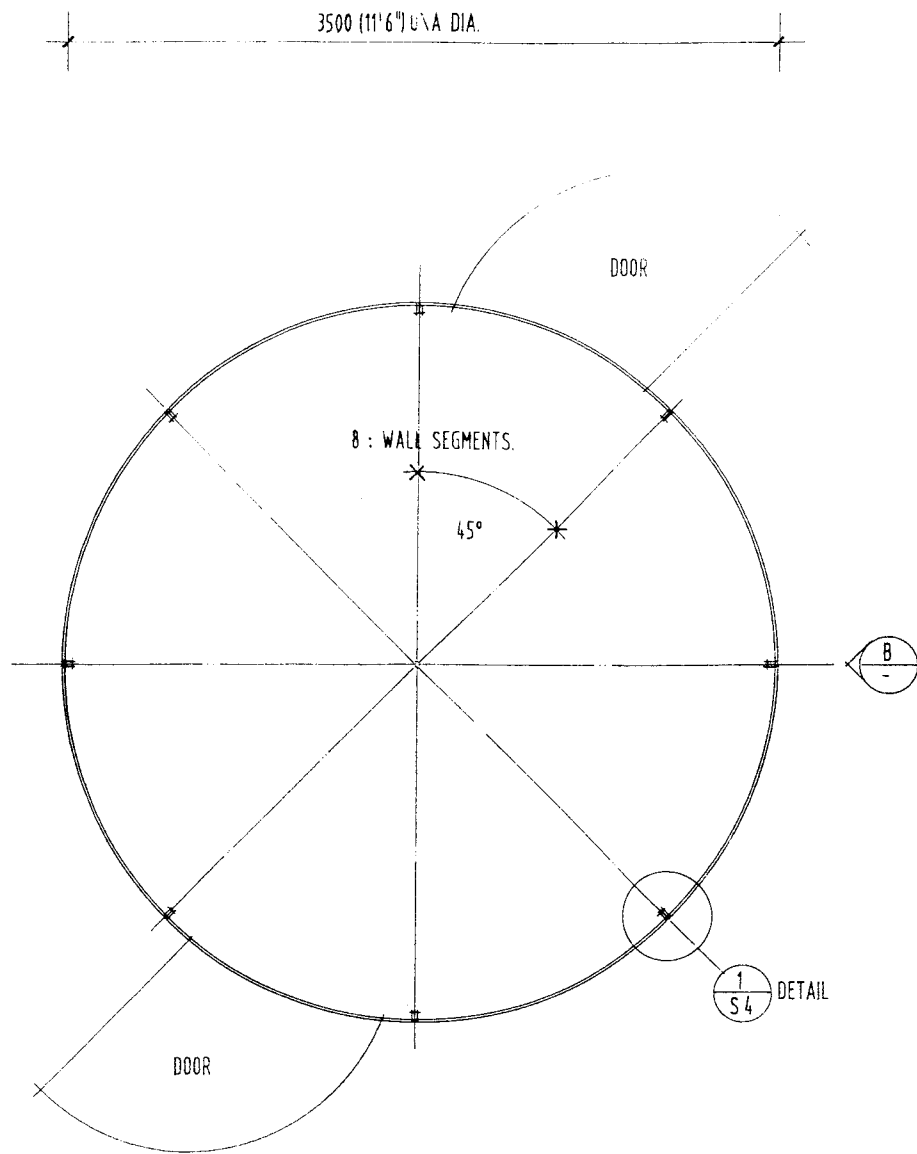
TITLE : **DOMES PLAN & ELEVATION.**

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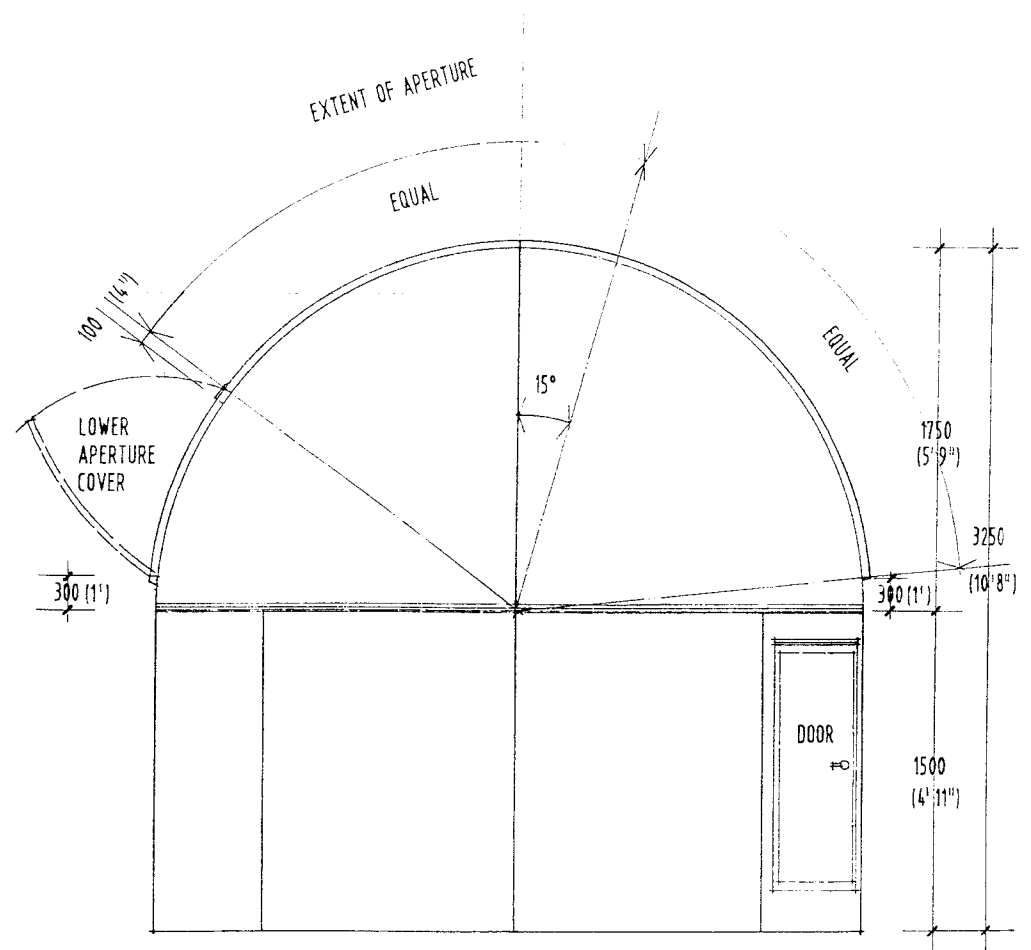
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DRG. **S2.A.**



FLOOR PLAN : WALLS.

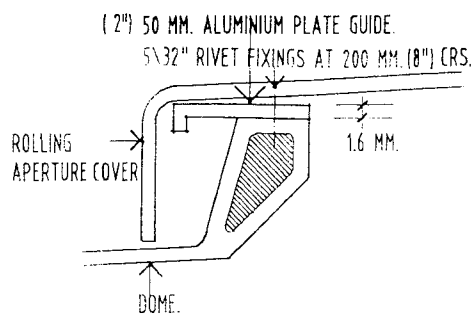


ELEVATION B B  
- S2

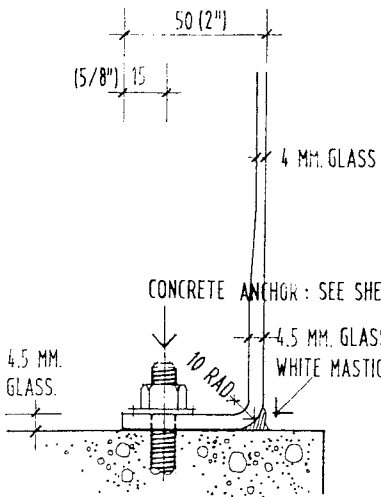
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			TITLE : <b>PLAN &amp; ELEVATION.</b>	<span style="border: 1px solid black; border-radius: 50%; padding: 2px;">C</span> COPYRIGHT DRG. <b>S3.A.</b>
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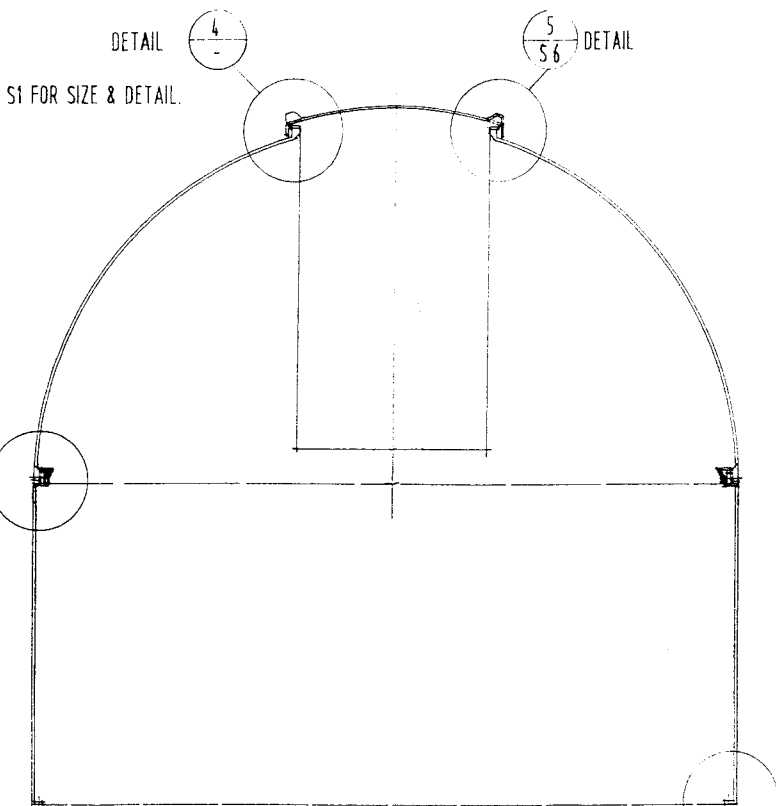


DETAIL  $\frac{4}{-}$  DETAIL BETWEEN GUIDE WHEELS.



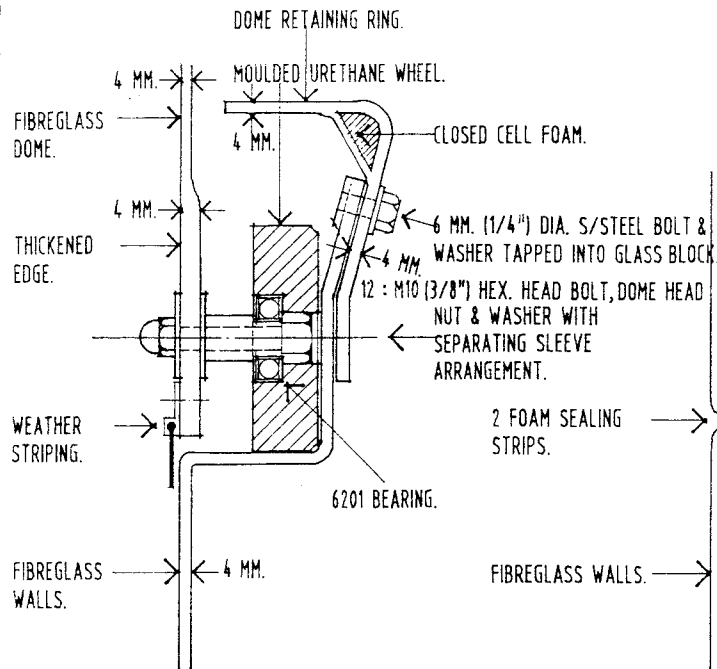
DETAIL  $\frac{3}{-}$

NOTE: 3 ANCHOR FIXINGS PER WALL PANEL.

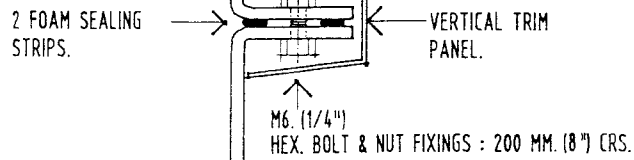


SECTION  $\frac{C}{S2}$

DETAIL  $\frac{3}{-}$



DETAIL  $\frac{2}{-}$



DETAIL  $\frac{1}{S3}$

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TITLE :

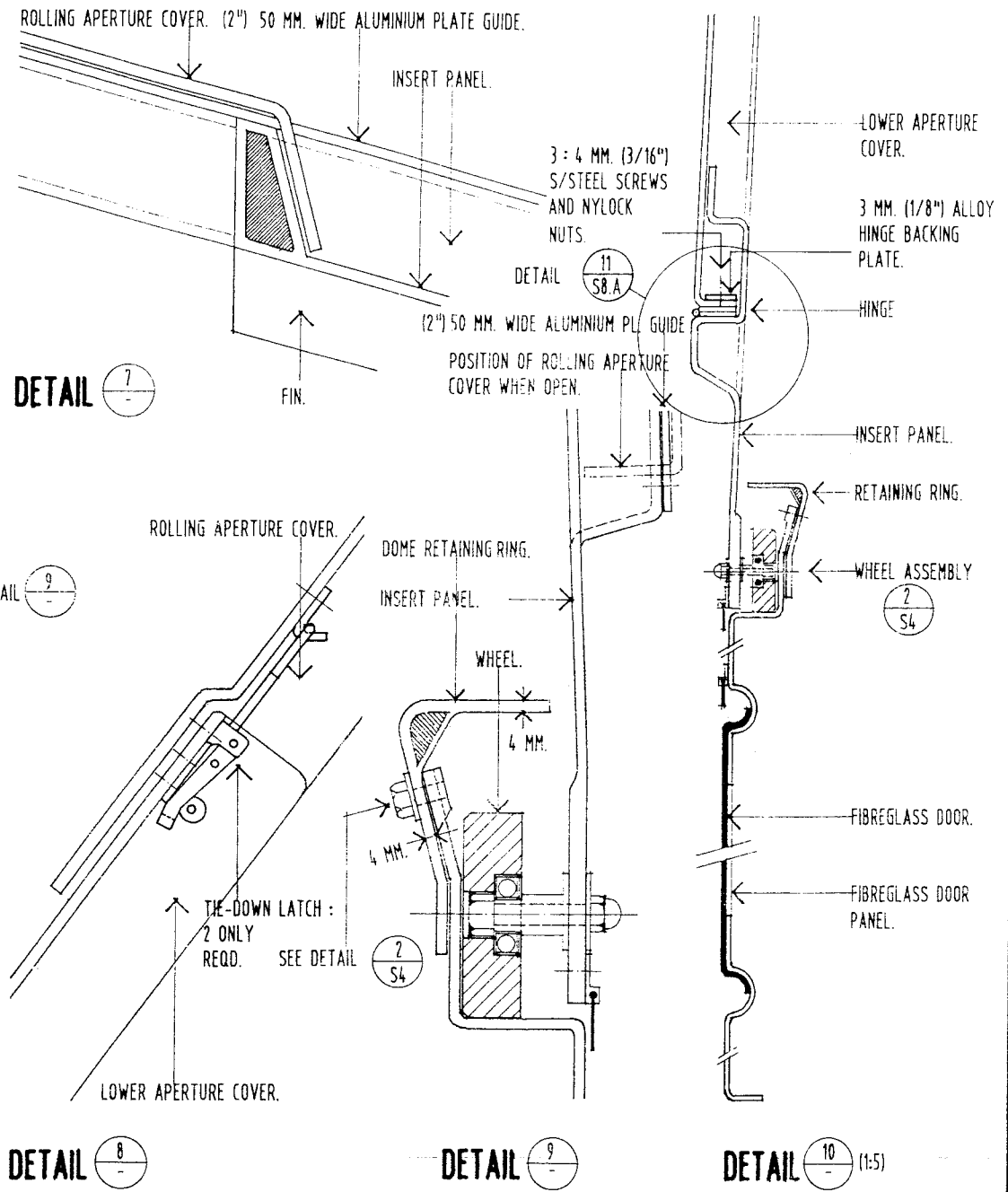
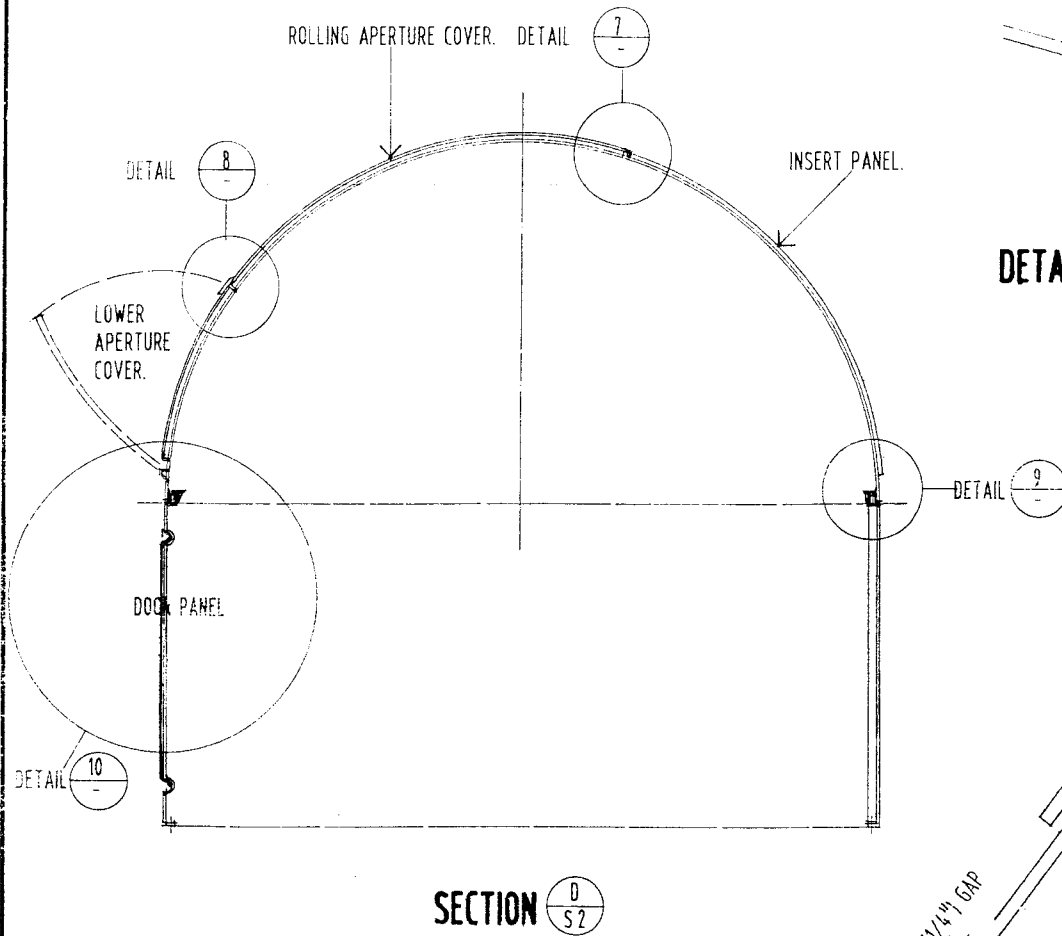
**SECTIONS.**

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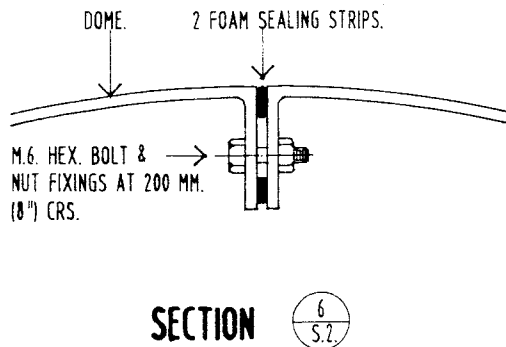
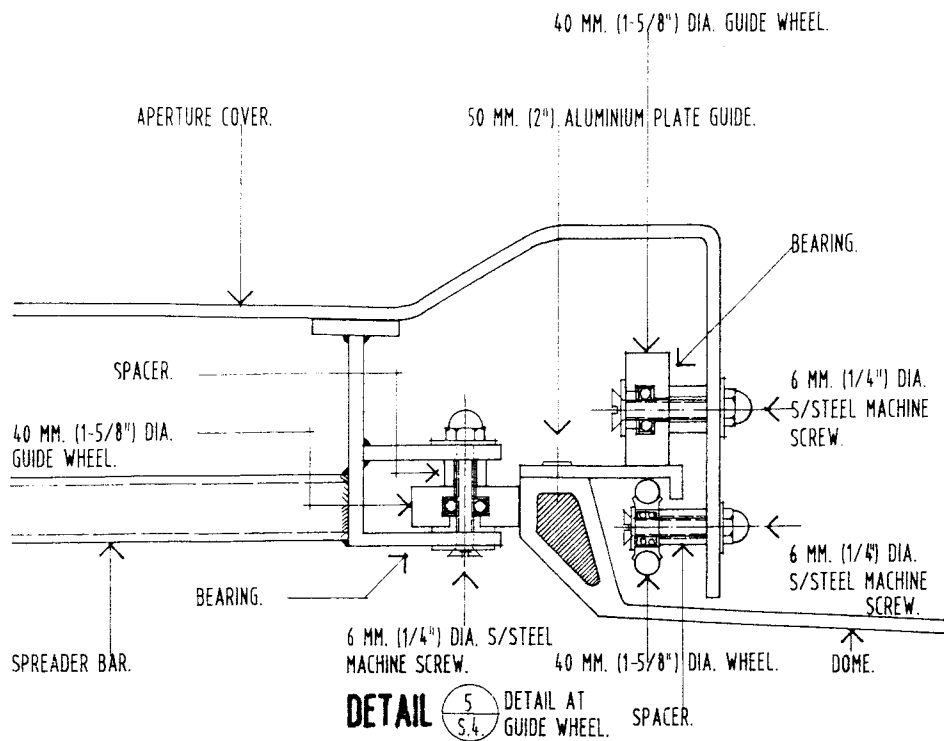
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 TITLE : **DETAILS**

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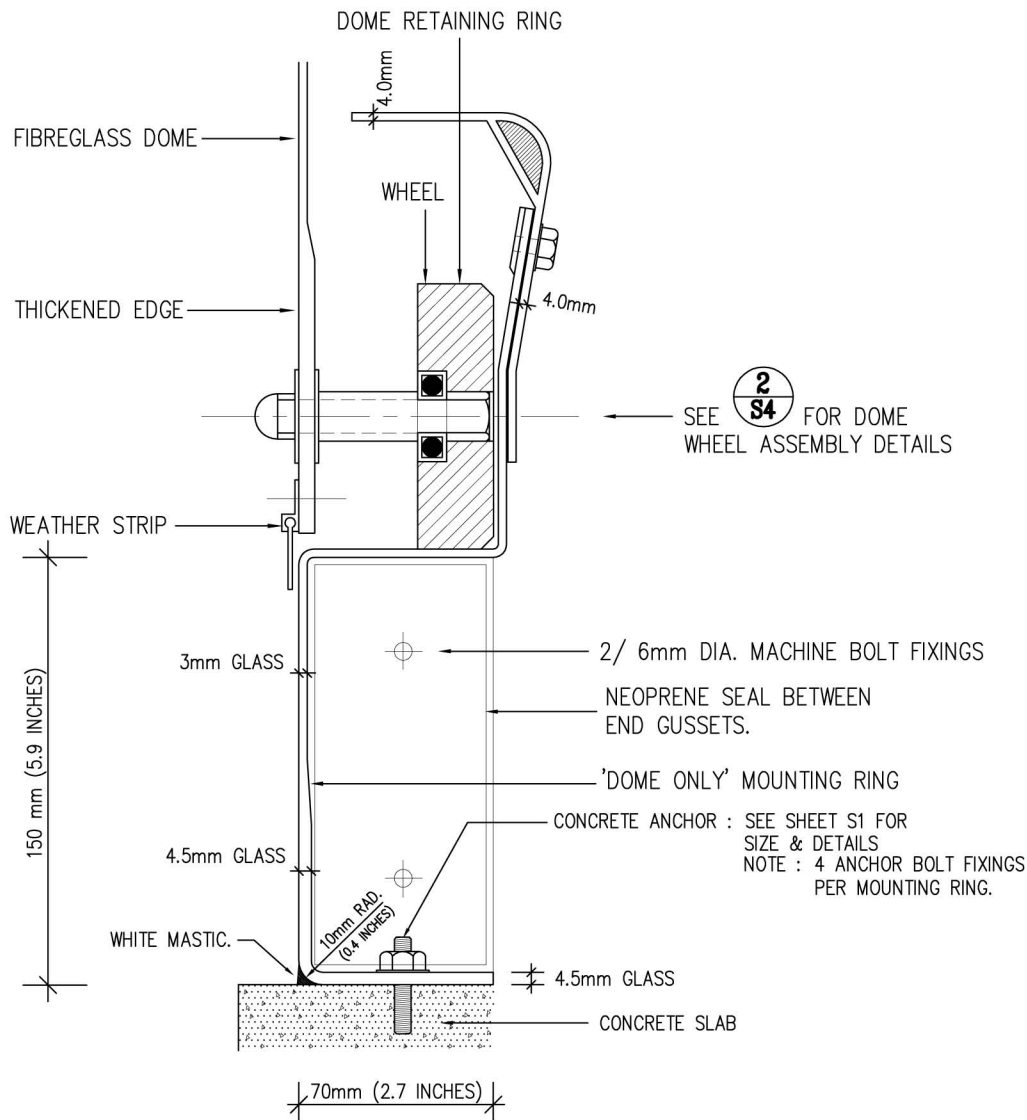
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TITLE :

**DETAILS.**

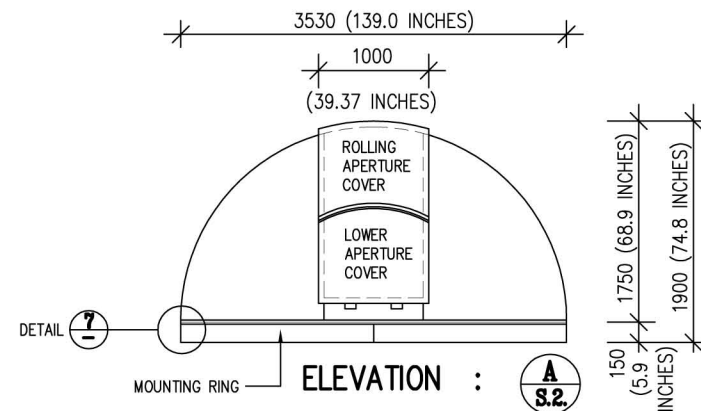
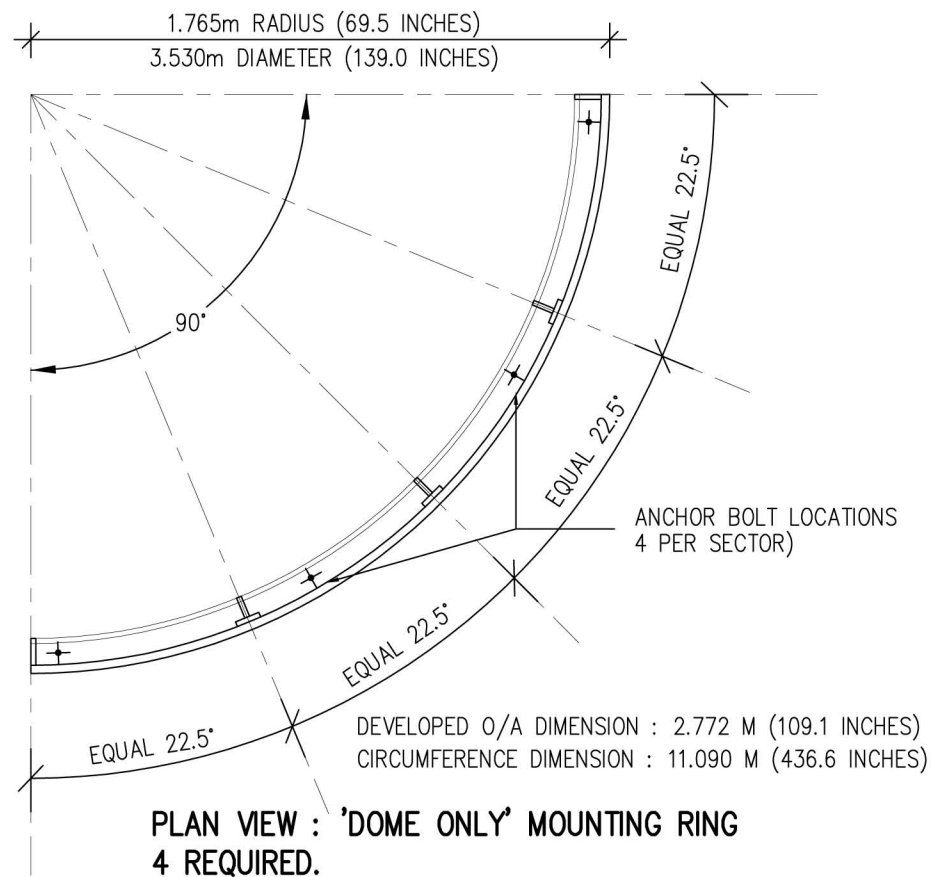
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SEE **2**/**S4** FOR DOME WHEEL ASSEMBLY DETAILS

DETAIL : **7** DOME ROTATION  
'DOME ONLY' SITUATION



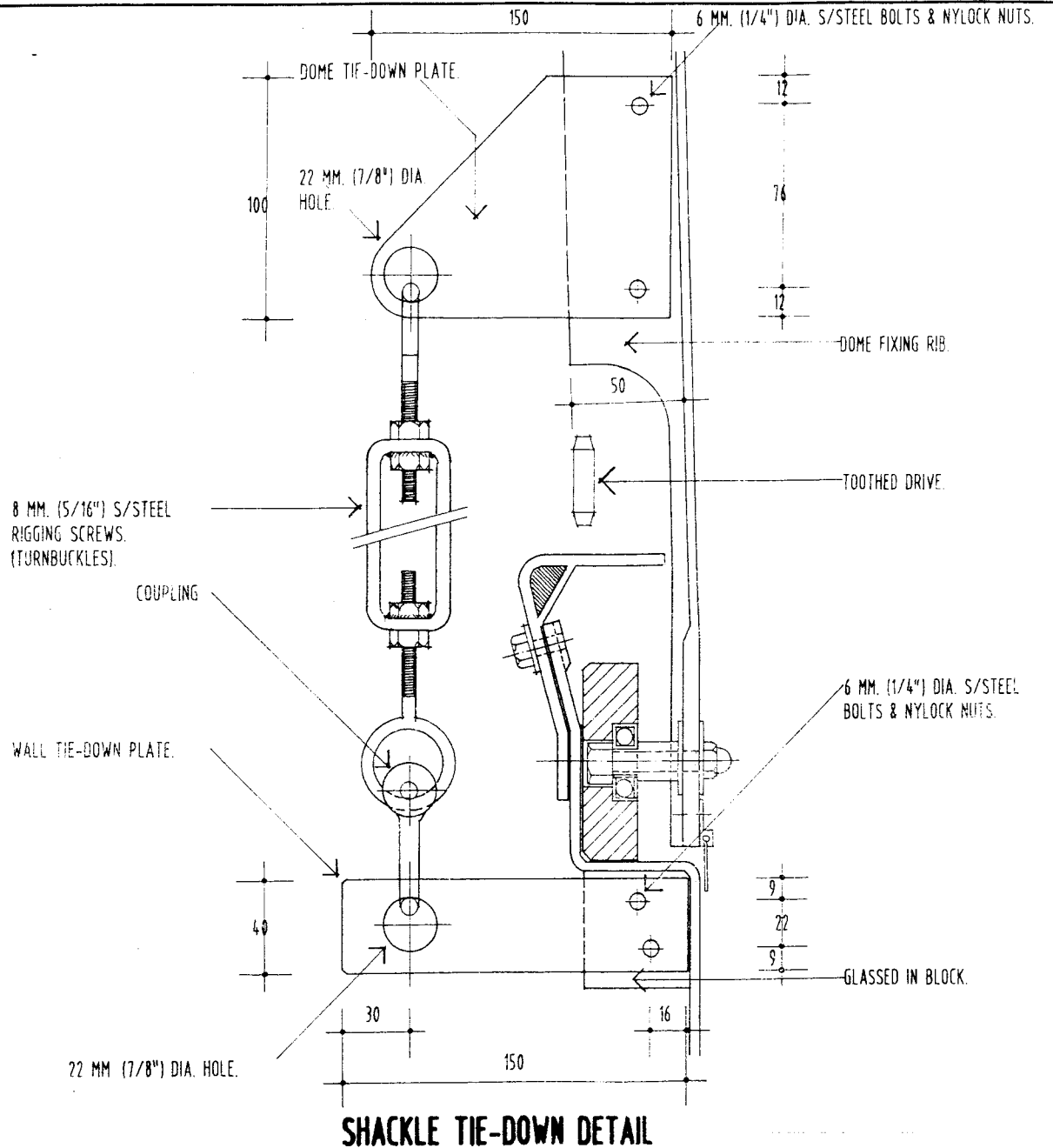
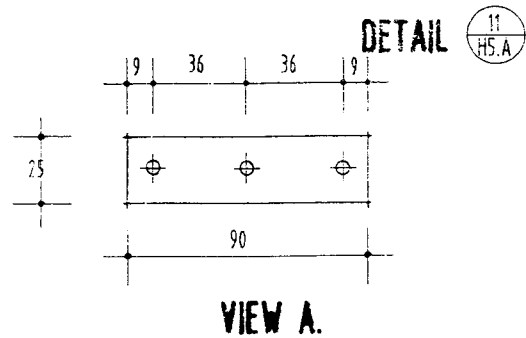
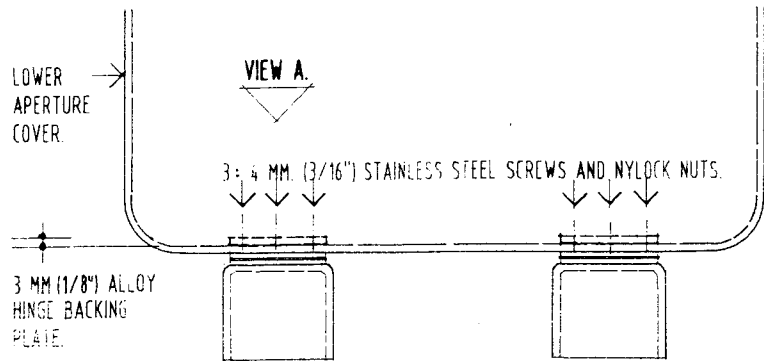
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PROJECT :  
**STANDARD ASSEMBLY DETAILS :  
 3.5m SCHOOL MODEL  
 ASTRONOMICAL DOME ONLY.**  
 DATE : MAY 2008

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**SHACKLE TIE-DOWN DETAIL**

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			TITLE : <b>HIGH WIND CONNECTIONS</b>	© COPYRIGHT. DRG. <b>S8.A.</b>
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