

P.O. Box 43  
FERNDALE 2160  
SOUTH AFRICA

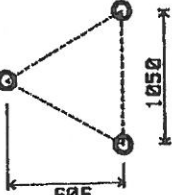
Tel (011)793-7324  
Telex 4-31046 SR  
Fax (011)793-4510

237

MAST TYPE 33m LUNAR LNM33

**MAST DESIGN CRITERIA**

WIND DESIGN CODE SABS 0160-1980  
ALTITUDE 1000m  
TERRAIN CATEGORY 2/3 CLASS B  
BASIC WIND SPEED 45m/sec (162km/hr)  
MEAN RETURN 25 YEARS



**MAST DESIGN PERFORMANCE**

AERIAL OR ANTENNA LOADING

MAXIMUM AREA of EACH .923 m<sup>2</sup>  
MAXIMUM MASS of EACH 100 kg  
WIND LOAD @ 33 m 115 kg  
DEFLECTION @ 33 m 7.339 cm  
WIND LOAD @ 30 m 112 kg  
DEFLECTION @ 30 m 6.12 cm

**MAST DESIGN DATA**

MAST PROPERTIES  
LEG SIZE 48 o/d x 3.3 mm  
ROD BRACING 14.5 mm  
I<sub>xx</sub>=I<sub>yy</sub>= 25580.738 cm<sup>4</sup>  
Z<sub>xx</sub>= 405.903 cm<sup>3</sup>  
Z<sub>yy</sub>= 465.952 cm<sup>3</sup>  
r<sub>xx</sub>=r<sub>yy</sub>= 42.895 cm  
NETT FACE AREA .138 m<sup>2</sup>/m  
MASS/m of MAST 30.568 kg/m

**FOUNDATION LOADINGS**

REACTIONS @ 'R'  
R<sub>v</sub> = 19.280 kN R<sub>h</sub> = .505 kN  
Bending Moment 7.947 kNm  
REACTIONS @ 'D'  
D<sub>v</sub> = 7.795 kN D<sub>h</sub> = 9.469 kN

GUY ROPE POST TENSIONING  
6mm ts 124kg & 8mm ts 220kg

Designed by :- ROSNOVANU & ASSOCIATES

Consulting Engineers APRIL 1985



P.O. Box 43  
FERNDALE 2160  
SOUTH AFRICA

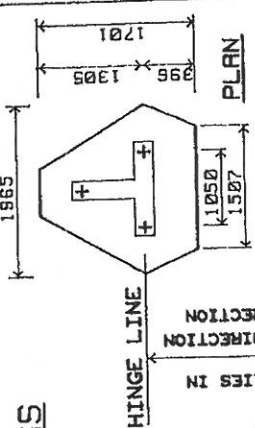
Tel (011)793-7324  
Telex 4-31046 SR  
Fax (011)793-4510

238

MAST TYPE 33m LUNAR LNM33

**FOUNDATION LOADINGS**

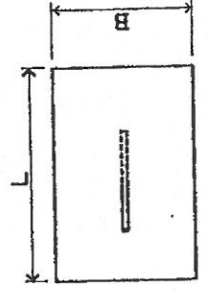
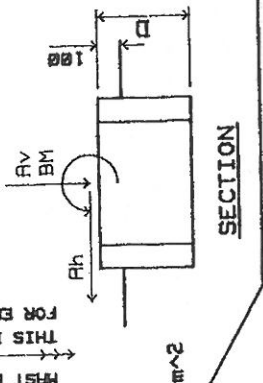
REACTIONS @ 'R'  
R<sub>v</sub> = 19.28 kN R<sub>h</sub> = .51 kN  
Bending Moment 7.95 kNm



REACTIONS @ 'D'  
D<sub>v</sub> = 7.80 kN D<sub>h</sub> = 9.47 kN  
ANGLE of REPOSE = 30.00 deg

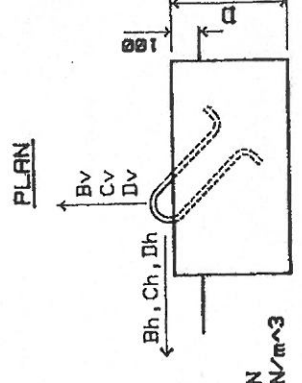
**FOUNDATION TYPE 'R'**

DEPTH = .50 m  
CONCRETE VOLUME = 1.13 m<sup>3</sup>  
CONCRETE MASS = 27.22 kN  
BEARING PRESSURE = 29.08 kN/m<sup>2</sup>



**FOUNDATION TYPE 'D'**

L = 1.05 m B = .85 m  
D = .70 m  
CONCRETE VOLUME = .62 m<sup>3</sup>  
CONCRETE MASS = 14.99 kN  
BEARING PRESSURE = 72.85 kN/m<sup>2</sup>



TOTAL VOLUME of CONCRETE = 3.01 m<sup>3</sup>

Designed by :- ROSNOVANU & ASSOCIATES

Consulting Engineers APRIL 1985