

104071596

ZS TOWERS
 (PTY) LTD
 MAST TYPE 12m COSMIC ZSCNSD12

P.O. BOX 43
 FERNDALE 2160
 SOUTH AFRICA

Tel (011)793-7460 235
 Telex 4-31046 SA.

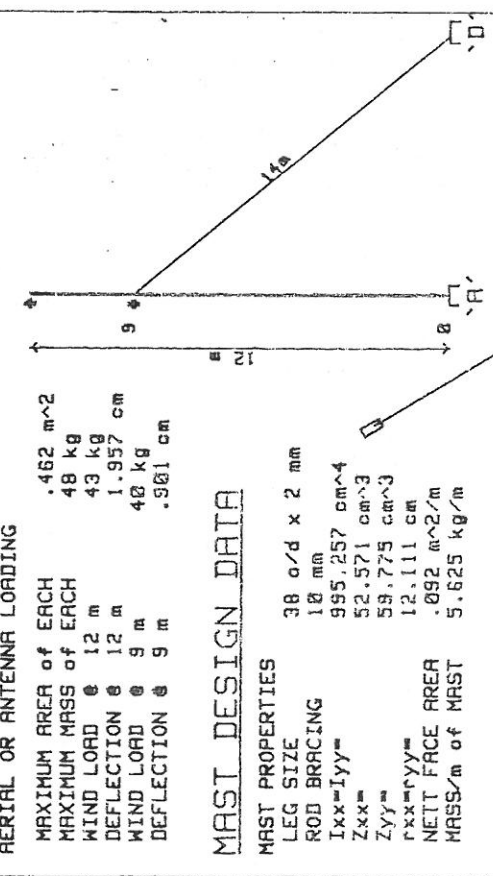
MAST DESIGN CRITERIA

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 .462 m²
 MAXIMUM MASS of EACH 48 kg
 WIND LOAD @ 12 m 43 kg
 DEFLECTION @ 12 m 1.957 cm
 WIND LOAD @ 9 m 40 kg
 DEFLECTION @ 9 m .901 cm



MAST DESIGN DATA

MAST PROPERTIES
 LEG SIZE 38 o/d x 2 mm
 ROD BRACING 10 mm
 Ixx-Iyy = 995,257 cm⁴
 Zxx = 52,571 cm³
 Zyy = 59,775 cm³
 rxx-ryy = 12,111 cm
 NETT FACE AREA .092 m²/m
 MASS/m of MAST 5.625 kg/m

FOUNDATION LOADINGS

REACTIONS @ 'A'
 Rv = 5.881 kN Ah = .206 kNm
 Bending Moment .611 kNm
 REACTIONS @ 'D'
 Dv = 2.282 kN Dh = 2.550 kN

Designed by :- **ROSNOVANU & ASSOCIATES**
 Consulting Engineers

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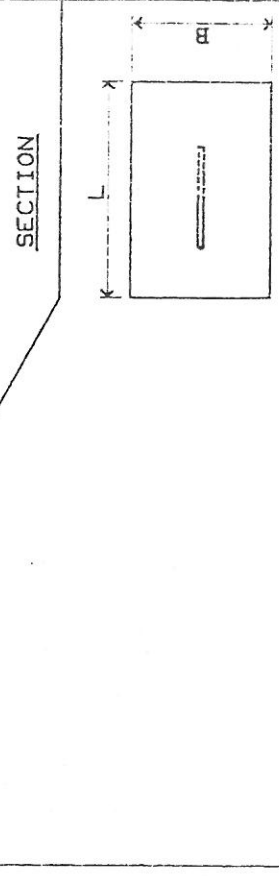
FOUNDATION LOADINGS

REACTIONS @ 'A'
 Rv = 5.88 kN Ah = .21 kNm
 Bending Moment .61 kNm

REACTIONS @ 'D'
 Dv = 2.28 kN Dh = 2.55 kN

FOUNDATION TYPE 'A'

DEPTH = .50 m
 CONCRETE VOLUME = .26 m³
 CONCRETE MASS = 6.25 kN
 BEARING PRESSURE = 31.95 kN/m²



FOUNDATION TYPE 'D'

L = .65 m B = .50 m
 D = .50 m
 CONCRETE VOLUME = .16 m³
 CONCRETE MASS = 3.90 kN
 BEARING PRESSURE = 157.63 kN/m³

TOTAL VOLUME of CONCRETE = .75 m³

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DIVISION of **C O M M I T E E C H** (Pty) Ltd

1290 + 15%

ZS TOWERS P.O. BOX 43 Tel (011)793-7460 237
 (PTY) LTD FERNDALE 2160 Tel ex 4-31046 SA.
 SOUTH AFRICA
MAST TYPE 15m COSMIC ZSCNSD15

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



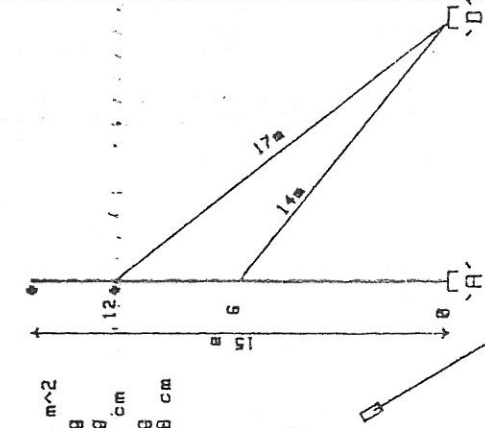
MAST

MAST DESIGN PERFORMANCE
 AERIAL OR ANTENNA LOADING

MAXIMUM AREA of EACH	.462 m ²
MAXIMUM MASS of EACH	48 kg
WIND LOAD @ 15 m	47 kg
DEFLECTION @ 15 m	2.68 cm
WIND LOAD @ 12 m	43 kg
DEFLECTION @ 12 m	1.348 cm

MAST DESIGN DATA

MAST PROPERTIES	
LEG SIZE	38 o/d x 2 mm
ROD BRACING	10 mm
Ixx=Iyy=	995.257 cm ⁴
Zxx=	52.571 cm ³
Zyy=	59.775 cm ³
cxx=yy=	12.111 cm
NETT FACE AREA	.892 m ² /m
MASS/m of MAST	5.625 kg/m



ELEVATION

PLAN

FOUNDATION LOADINGS

REACTIONS @ 'A'
 Rv = 8.628 kN
 Bending Moment .290 kNm
 REACTIONS @ 'D'
 Dv = 3.348 kN
 Rh = .144 kN
 Dh = 4.138 kN

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 (PTY) LTD FERNDALE 2160 Tel ex 4-31046 SA.
 SOUTH AFRICA
MAST TYPE 15m COSMIC ZSCNSD15

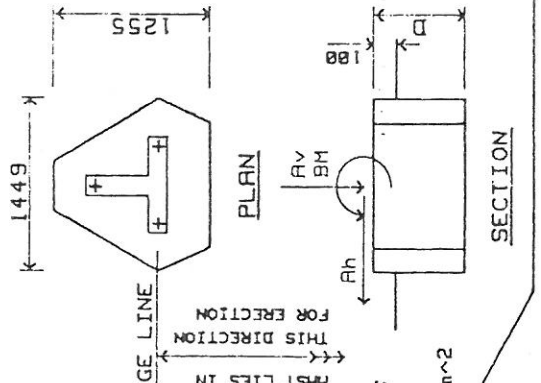
FOUNDATION LOADINGS

REACTIONS @ 'A'
 Rv = 8.63 kN
 Bending Moment .29 kNm
 Rh = .14 kN

REACTIONS @ 'D'
 Dv = 3.35 kN
 Dh = 4.14 kN

FOUNDATION TYPE 'A'

DEPTH .50 m
 CONCRETE VOLUME .26 m³
 CONCRETE MASS 6.25 kN
 BEARING PRESSURE = 34.29 kN/m²



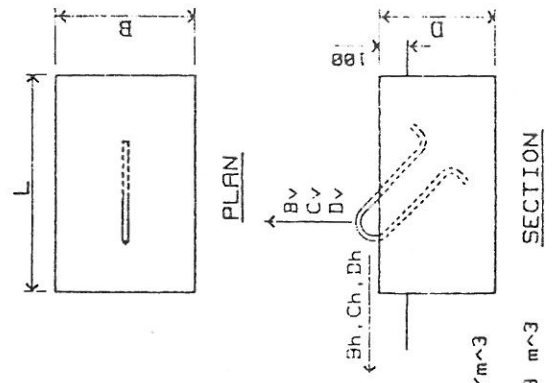
PLAN

SECTION

FOUNDATION TYPE 'D'

L = .95 m
 D = .50 m
 CONCRETE VOLUME .31 m³
 CONCRETE MASS 7.41 kN
 BEARING PRESSURE = 28.00 kN/m²

TOTAL VOLUME of CONCRETE = 1.19 m³



PLAN

SECTION

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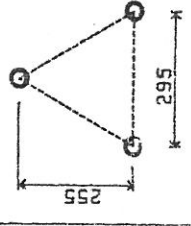
ZS TOWERS
(PTY) LTD
MAST TYPE 18m COSMIC ZSCNSD18

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SOUTH AFRICA

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MAST DESIGN CRITERIA

SABS 0160-1980
ALTITUDE 1000m
TERRAIN CATEGORY 2/3 CLASS B
BASIC WIND SPEED 49m/sec (162km/hr)
MEAN RETURN 25 YEARS



MAST DESIGN PERFORMANCE

AERIAL OR ANTENNA LOADING
MAXIMUM AREA of EACH .462 m²
MAXIMUM MASS of EACH 48 kg
WIND LOAD @ 18 m 50 kg
DEFLECTION @ 18 m 3.385 cm
WIND LOAD @ 15 m 47 kg
DEFLECTION @ 15 m 1.826 cm

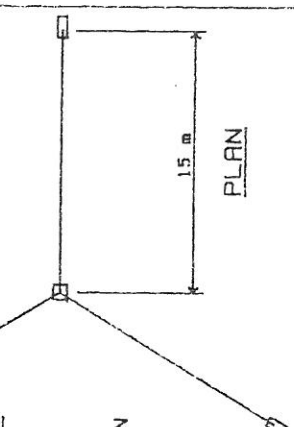
MAST DESIGN DATA

MAST PROPERTIES
LEG SIZE 38 o/d x 2 mm
ROD BRACING 10 mm
I_{xx}=I_{yy}= 995.257 cm⁴
Z_{xx}= 52.571 cm³
Z_{yy}= 59.775 cm³
r_{xx}=r_{yy}= 12.111 cm
NETT FACE AREA .092 m²/m
MASS/m of MAST 5.625 kg/m

FOUNDATION LOADINGS

REACTIONS @ 'A'
R_v = 9.393 kN
Bending Moment .562 kNm
REACTIONS @ 'D'
D_v = 3.720 kN Dh = 4.708 kN

ELEVATION



PLAN

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Consulting Engineers

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of

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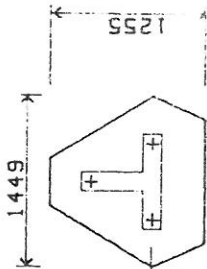
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FOUNDATION LOADINGS

REACTIONS @ 'A'
R_v = 9.39 kN R_h = .28 kN
Bending Moment .56 kNm

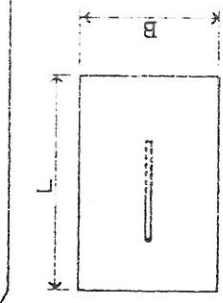


REACTIONS @ 'D'
D_v = 3.72 kN Dh = 4.71 kN

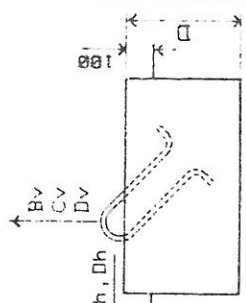
FOUNDATION TYPE 'A'

DEPTH = .50 m
CONCRETE VOLUME = .26 m³
CONCRETE MASS = 6.25 kN
BEARING PRESSURE = 38.99 kN/m²

SECTION



PLAN



FOUNDATION TYPE 'D'

L = .95 m B = .65 m
D = .50 m
CONCRETE VOLUME = .31 m³
CONCRETE MASS = 7.41 kN
BEARING PRESSURE = 33.22 kN/m²

TOTAL VOLUME of CONCRETE = 1.19 m³

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