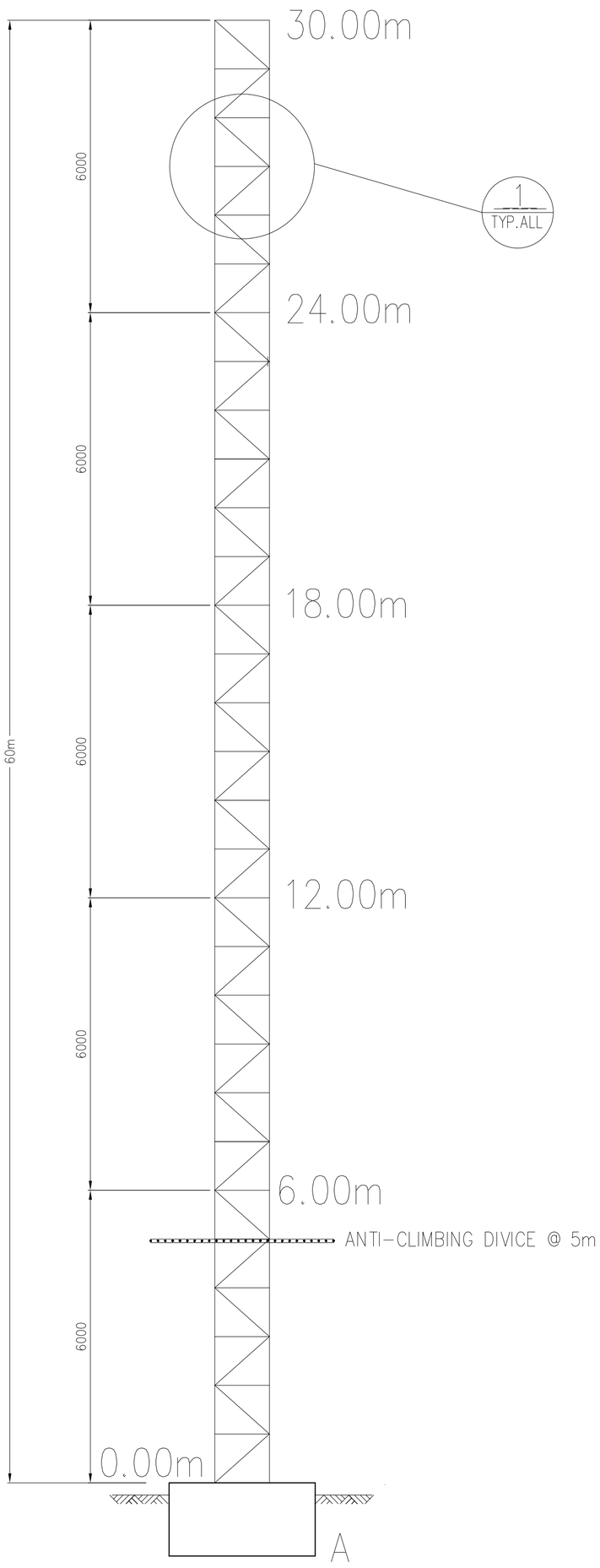
30m TELECOMMUNICATIONS MAST



DESIGN PARAMETERS

WIND LOADING DESIGN CODE	: SANS 10160 – PART 3
STRUCTURAL STEEL DESIGN CODE	: SANS 10162 – PART 1
STRUCTURAL CONCRETE CODE	: SANS 10100 – PART 1
MAXIMUM WIND SPEED	: 36m/s
ALTITUDE	: 1000m
TERRAIN CATEGORY	: A
MEAN RETURN PERIOD	: 50 YEARS
CONCRETE DENSITY	: 24kN/m3
SOIL DENSITY	: 17.5kN/m3
CONCRETE STRENGTH AT 28 DAYS	: 25MPa
ALLOWABLE SOIL BEARING CAPACITY	: 150kN/m2
CONNECTION BOLTS GRADE	: GR.8.8
STEEL GRADE	: S355JR

MAST GLOBAL POSITION LOCATION
AREA: XXXXX
PROVINCE: XXXXXX
GPS: 00,00'00.00"S & 00,00'00.00"E

MAST DATA TYPE 1: 0m–9m

MAST PROPERTIES
MAIN LEGS SIZE : 101.0 O/D X 4.0 THK.
HORIZONTAL BRACINGS : 25.0 O/D X 2.0 THK.
VERTICAL BRACINGS : 32.0 O/D X 2.0 THK.
MASS/m OF MAST : 43.3kg/m

MAST DATA TYPE 1: 9m–18m

MAST PROPERTIES
MAIN LEGS SIZE : 76.0 O/D X 3.5 THK.
HORIZONTAL BRACINGS : 19.0 O/D X 2.0 THK.
VERTICAL BRACINGS : 25.0 O/D X 2.0 THK.
MASS/m OF MAST : 30.7kg/m

MAST DATA TYPE 1: 18m–24m

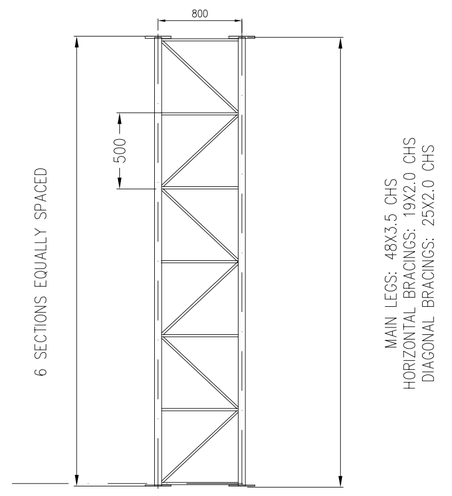
MAST PROPERTIES
MAIN LEGS SIZE : 63.0 O/D X 3.5 THK.
HORIZONTAL BRACINGS : 19.0 O/D X 2.0 THK.
VERTICAL BRACINGS : 25.0 O/D X 2.0 THK.
MASS/m OF MAST : 25.9kg/m

MAST DATA TYPE 1: 24m–30m

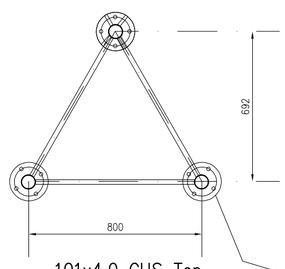
MAST PROPERTIES
MAIN LEGS SIZE : 48.0 O/D X 3.5 THK.
HORIZONTAL BRACINGS : 19.0 O/D X 2.0 THK.
VERTICAL BRACINGS : 25.0 O/D X 2.0 THK.
MASS/m OF MAST : 22.1kg/m

MAST DESIGN PERFORMANCE

ANTENNA WIND LOAD: 2m2
(DISTRIBUTED AT THE TOP 3m)

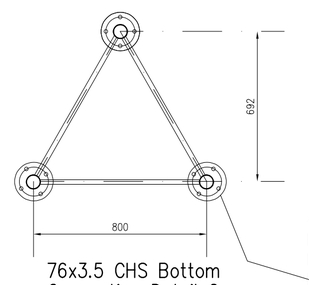


TYPICAL DETAIL 1



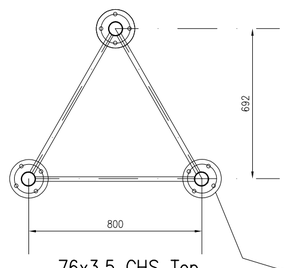
101x4.0 CHS Top Connection Detail 1

4M16 Bolts on 12mm THK Plate
Plate Dia. 210mm
Bolts Centers Dia.160mm
All Bolts GR.8.8 BOLTS



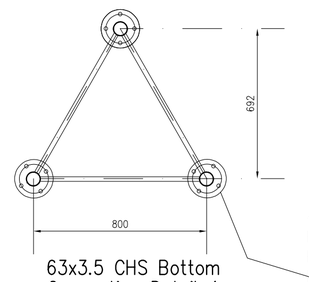
76x3.5 CHS Bottom Connection Detail 2

4M16 Bolts on 12mm THK Plate
Plate Dia. 210mm
Bolts Centers Dia.160mm
All Bolts GR.8.8 BOLTS



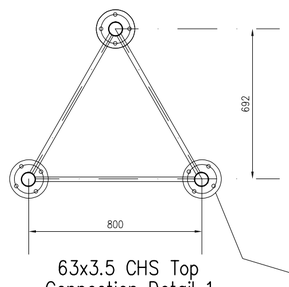
76x3.5 CHS Top Connection Detail 3

4M16 Bolts on 8mm THK Plate
Plate Dia. 190mm
Bolts Centers Dia.140mm
All Bolts GR.8.8 BOLTS



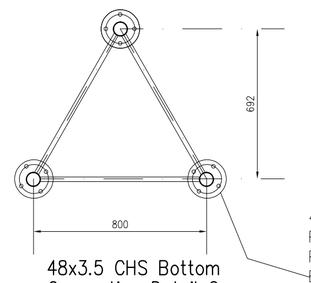
63x3.5 CHS Bottom Connection Detail 2

4M16 Bolts on 8mm THK Plate
Plate Dia. 190mm
Bolts Centers Dia.140mm
All Bolts GR.8.8 BOLTS



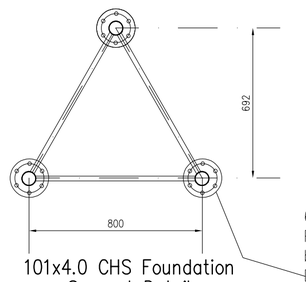
63x3.5 CHS Top Connection Detail 1

4M12 Bolts on 6mm THK Plate
Plate Dia. 150mm
Bolts Centers Dia.110mm
All Bolts GR.8.8 BOLTS



48x3.5 CHS Bottom Connection Detail 2

4M12 Bolts on 6mm THK Plate
Plate Dia. 150mm
Bolts Centers Dia.110mm
All Bolts GR.8.8 BOLTS



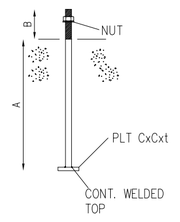
101x4.0 CHS Foundation Support Detail

6M20 on 12mm THK PLATE
Plate with 6mm stiffeners between Bolts holes
Dia. 240mm
Bolts Centers Dia.180mm
HD GR.4.8 BOLTS

H.D. BOLT SCHEDULE

ALL H.D. BOLTS TO BE PROVIDED WITH (X) DIA. x(Y) DEEP GROUT POCKETS UNLESS OTHERWISE STATED

MARK	No. OFF	DIA. (D)	A	B	PLATE C	PLATE t	POCKETS (X)	POCKETS (Y)
A	18	M20	500	150	70	10		

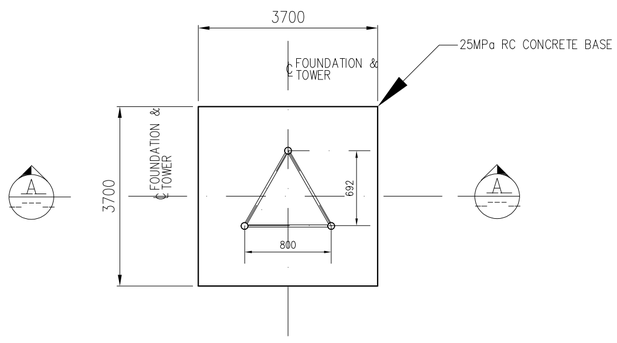


ALL H.D BOLTS ARE TO BE CLASS 4.8 IN ACCORDANCE WITH SANS 1700
ALL NUTS ARE TO BE CLASS 4 IN ACCORDANCE WITH SANS 1700

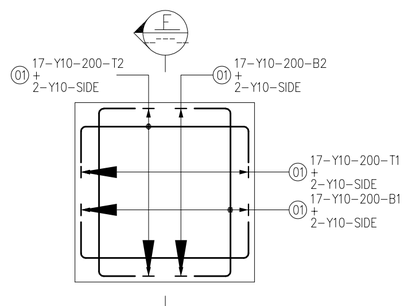
NOTE: HOLDING DOWN BOLTS SHOULD BE WITHIN ±3mm OF THEIR REQUIRED POSITION IN PLAN, AND TOP OF CONCRETE AND TOP OF BOLTS WITHIN ±5mm OF THE REQUIRED LEVEL

BOLT SHANKS TO BE DEGREASED BEFORE EMBEDDING IN CONCRETE

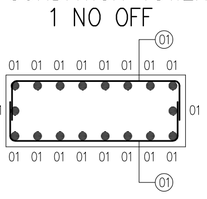
BOLTS : HOT DIPPED GALVANISED TO SANS 121



PLAN
FOUNDATION TOWER
1 NO OFF



PLAN SHOWING REINFORCEMENT
FOUNDATION TOWER
1 NO OFF



MEMBER	BAR MARK	TYPE AND SIZE	No. OF MEMBERS	No. PER MEMBER	TOTAL No.	LENGTH mm	SHAPE CODE	A mm	B mm	C mm	D mm	E/R mm
TOWER BASE	01	Y12	1	76	48	4450	38	450	3550			

NOTE:
FOR ANY OVER EXCAVATION, MAKE UP FILL WITH 30 MPA CONCRETE

STANDARD DRAWING NOTES

GENERAL

1. ALL DIMENSIONS IN MILIMETERS
2. IF DOUBT ASK.

GENERAL NOTES – SURFACE CIVIL STRUCTURES

1. CONCRETE
1.1 CONCRETE SHALL BE 'STRENGTH CONCRETE' AS SPECIFIED BELOW UNLESS OTHERWISE NOTED
BLINDING CONCRETE GRADE 10/19
ALL STRUCTURAL CONCRETE GRADE 25/19
CONCRETE COVER 75mm ALL ROUND
1.2 CONCRETE CEMENT CONTENT 340 KG/CUBE, MAX FREE W/C = 0.45 OTHERWISE NOTED

2. FORMED AND UNFORMED SURFACES
2.1 FORMWORK SHALL BE CLASSIFIED AS SPECIFIED BELOW (U.O.N.)
"ROUGH" WHERE FACE IS NOT EXPOSED
"SMOOTH" WHERE FACE IS EXPOSED
SMOOTH FORMWORK TO EXPOSED FACES TO BE CARRIED DOWN TO 150mm BELOW ADJOINING FINAL GROUND OR PAVING LEVEL
2.2 ARRISSES SHALL BE CHAMFERED 20x20mm
2.3 EXPOSED UNFORMED SURFACES AND SURFACES TO RECEIVE GROUT TO "WOOD FLOAT FINISH" (U.O.N.)
3. FOUNDING MATERIAL
3.1 THE MAXIMUM DESIGN BEARING PRESSURE FOR FOUNDATIONS SHALL BE 150KPa UNLESS OTHERWISED NOTED
4. CAST IN ITEMS AND GROUTING
4.1 CAST IN ITEMS TO BE SUPPLIED BY CIVIL CONTRACTOR UNLESS OTHERWISE NOTED
4.2 GROUTING UNDER BASE PLATES SHALL BE DONE BY CIVIL CONTRACTOR UNLESS OTHERWISE NOTED
5. ALL REBAR SHAPE CODES ACCORDING TO SANS 282 STEEL TO COMPLY WITH SANS 10144:2012
BARS PREFIX "Y" = HIGH YIELD DEFORMED STEEL BARS OF STRENGTH 450 MPa
BARS PREFIX "R" = PLAIN ROUND MILD STEEL BARS OF STRENGHT 250 MPa

30m TELECOMMUNICATIONSL MAST – DETAILS					24–5009–08
REFERENCE DRAWINGS	TITLE				DRG. No
ISSUED_FOR_APPROVAL	A1	09–02–25	AR	KK	
REVISIONS	DETAIL	MARK	DATE	INIT	APP'D

DESIGNATION	NAME	REG. No:	SIGNATURE	DATE
DRAWN	M CHIWANDA			17–09–25
CHECKED	A. ZVINOKONA			17–09–25
CLIENT				
STRUCTURAL ENG	A. ZVINOKONA	201751408		17–09–25
PR. ENGINEER	K. KALAMBAY	2020600475		17–09–25

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PTY(LTD)

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CLIENT M&T SOLUTIONS
PROJECT 30m TELECOMMUNICATIONS TOWER
DESCRIPTION 30m – TOWER
DRAWING TITLE 30m TOWER GENERAL ARRANGEMENT DRAWING

SCALE: 1:5 | SHEET: __ OF __ | DRAWING No: 24–5009 | 24–5009–DRW–008 | REV 0 | SIZE – A0