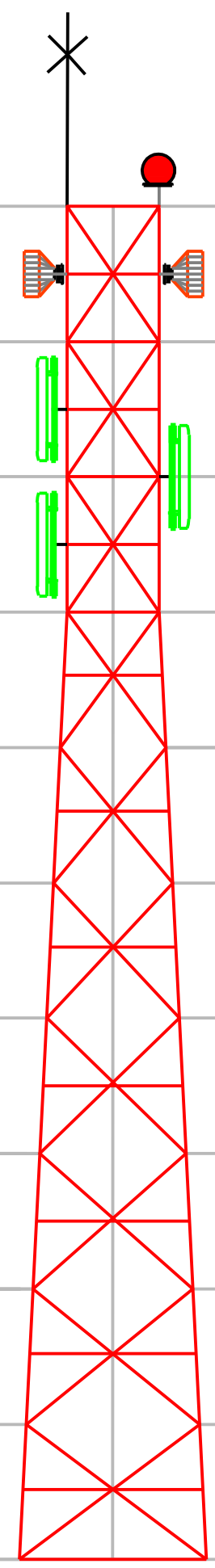
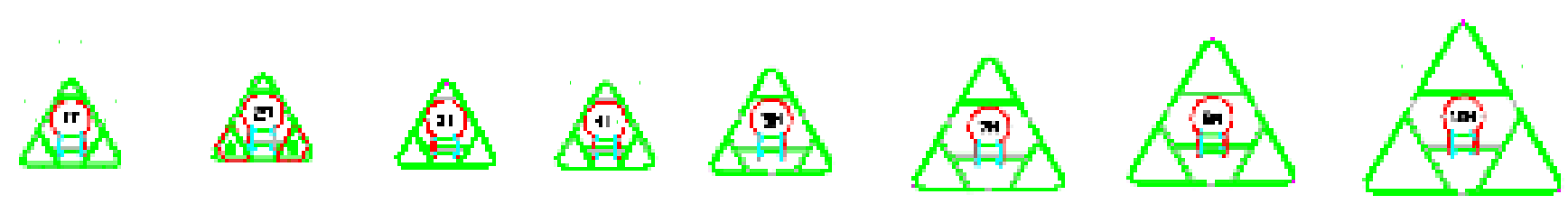
LEVEL	FACE WIDTH	PLATFORM	LADDER SUPPROT	LEG JOINT NAME	LEG LENGTH	LEGS SIZE	PANEL NO	LENGTH (METER)	DIAGONALS	PANEL TOP- HORIZONTALS	PANEL MID- HORIZONTALS	PLAN BRACING	SEC. BRACING
25000	1700				4488	65X65X5	1	2.5	45x45x5	50x50x4	45x45x04	50x50x4	
22500	1700	WP					2	2.5					
20000	1700				2500	75x75x5	3	2.5	45x45x5	50x50x4	45x45x04		
17500	1700				4898	90x90x6	4	2.5					
15000	1950						5	2.5	45x45x5		50x50x4	50x50x4	
12500	2200				5000	90x90x8	6	2.5	45x45x5				
10000	2450						7	2.5			50x50x4	50x50x4	
7500	2700	RP			5000	100x100x10	8	2.5	50x50x5				
5000	2950						9	2.5			50x50x4	50x50x4	
2500	3200				2500	110x10	10	2.5	60x5				
0000	3450												



PLAN VIEWS

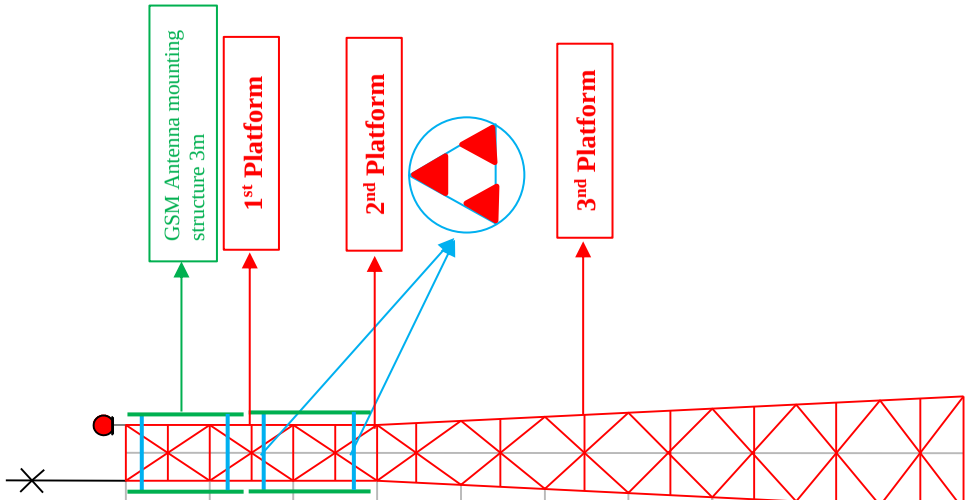


Tower Weight ≥ 3250 Kg

TITLE	25 METER TOWER	Wind Speed	180 KMPH	Design:	TIA/EIA-222 G
SUB. TITLE	TRIANGULAR ANGULAR TOWER	Deflection	< 0.5 Degree	F.O.S.	1.2 Dead Load & 1.6 Wind Load
Drawing No.	AGD-319	Loading	6 GSM Antenna (Weight 35kgs) 6 RRU Antenna (Weight 17kgs) 2x0.6m Parabolic MW Antenna	1	DATE : 31.12.2020

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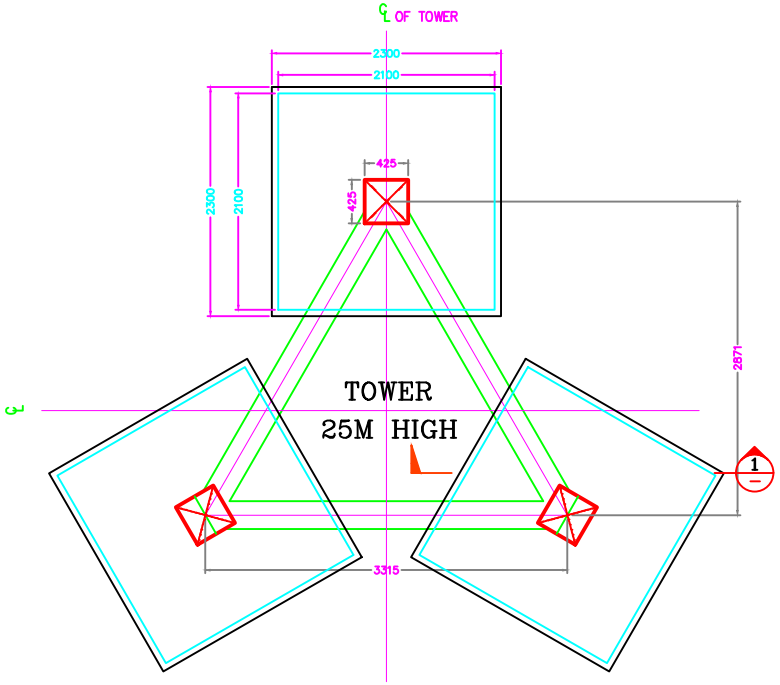
BHUTAN TELECOM LIMITED				
Technical Specification sheet of 25 mtr. 3 Legged Angular Tower AGD-319				
Sl. No			**DETAILS**	**Remarks**
1		**DESIGN SPECIFICATION REFERENCE**	ANSI/TIA-222G	
	1.1	Design Wind Velocity		
		Survival	180Km/h	
	1.2	Twist & Sway	less than 1.0 degree	
	1.3	Factor of safety	1.2 For Dead Load	
			1.6 for Wind Load	
	1.4	Antenna Loading		
		Remote Radio Head	6 nos. RRU	17 Kgs each
		Sectoral Antennas	6 nos. GSM Antenna	35 Kgs each
		Microwave Antennas	2 nos of 0.9m MW	25 Kgs each
	1.5	Antenna Pole Mount stand	9 nos of 3m	
2		**Obstruction Light System**		
	2.1	No. of Obstruction Light Lamp & Watts	1 No. LED Type	
	2.2	Power Cable Type & Length	2.5 Sqmm & 35 mtr. Length	2 core armored
3		**Lightning Protection & Earthing System (Grounding System)**		
	3.1	Lightning Arrestor	1.2mtr long	1 nos
4		**Structure of Tower**	Self-Supporting 3 Legged Angular Construction with vertical ladder in the center integrated with Cable tray & Horizontal cable tray from tower to Building.	
	4.1	Main Leg	90 Degree Angle	
	4.2	Bracing	90 Degree Angle	
	4.3	Climbing Ladder	400mm Rung Width, 300mm Rung space & 700mm Hoop	
	4.4	Cable Tray Vertical	400mm Width	along tower height
	4.5	Cable Tray Horizontal	450mm Width (6 mtr)	
	4.6	Platforms		
		Working (Round)	2 Nos	1 no at 21.25m, 1 no at 17.5m
		Rest	1 Nos	1 no at 11.25m
5		**Foundation bolt & Template**	As per tower design	Included
	5.1	Bolts & Nut with Spring	Hot Dipped Galvanized Property Class 5.6	
	5.2	Plane Washer	As per standard ASTM A 153	Extra 5%
	5.3	Hot Dipped Galvanized	As per Standard ISO 1461	85 Microns
6		**Others to specified**		
	6.1	Weight Per Tower	3250 Kgs	(+/-) 5 %
	6.2	Paint	as per International Standard	As per requirement



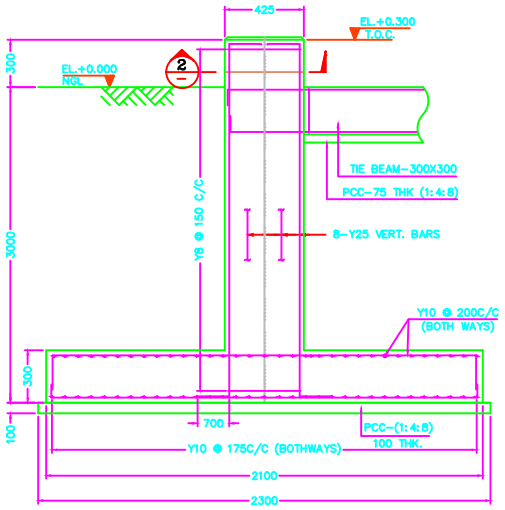
LEG JOINT NAME										
LEG LENGTH	4488		2500	4898		5000		5000		2500
LEGS SIZE	65X65X5		75X75X5	90x90x6		90x90x8		100x100x10		110x10
PANEL NO	1	2	3	4	5	6	7	8	9	10
LENGTH (METER)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
DIAGONALS	45x45x5		45x45x5	45x45x5		45x45x5		50x50x5		60x5
PANEL TOP– HORIZONTALS	50x50x4		50x50x4							
PANEL MID– HORIZONTALS	45x45x04		45x45x04		50x50x4		50x50x4		50x50x4	
PLAN BRACING	50x50x4				50x50x4		50x50x4		50x50x4	
SEC. BRACING										



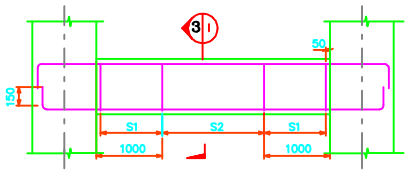
Platform Preview



FOUNDATION KEY PLAN

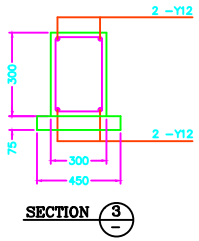


SECTION 1

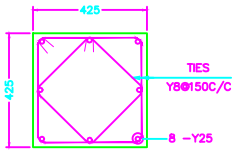


TIE BEAM (TYP DETAILS)

STIRRUP DETAILS
S1:-2 LEGGED Y8 @ 100 C/C
S2:-2 LEGGED Y8 @ 200 C/C

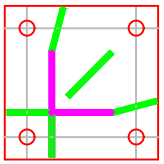


SECTION 3

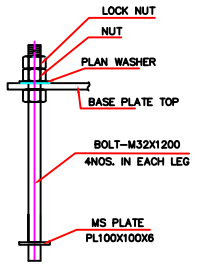


SECTION 2

COLUMN 450X450



BASE PLATE



ANCHOR BOLT

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2. USE M20 GRADE CONCRETE AND Fe 415 GRADE FOR STEEL.
3. CLEAR COVER TO MAIN REINFORCEMENT:-
   (a) 50MM FOR FOUNDATION (b) 25MM FOR BEAMS
   (c) 40MM FOR COLUMNS (d) 50MM AT ENDS
4. PRIOR TO AND DURING CONCRETING ALL BOLTS SHALL BE SECURELY HELD IN POSITION BY USE OF TEMPLATE.
5. BEFORE COMMENCEMENT OF CONSTRUCTION USING THIS DESIGN, CLIENT/CONTRACTOR SHALL CARRY OUT DETAILED SOIL INVESTIGATION OF EVERY SITE.
6. THIS FOUNDATION DESIGN SHALL NOT BE USED IN CASE HIGHLY SOIL ARE FOUND AT ANY DEPTH DURING SOIL INVESTIGATION.
7. CONCRETE SHALL BE MECHANICALLY MIXED & VIBRATED.
8. SPLICING OF BARS SHALL NOT BE MORE THAN 50% AT ANY LOCATION.
9. PROPER CURING OF CONCRETE SHALL BE DONE.
10. BENDING OF BARS SHALL BE AS PER IS:2502.
11. ANY DISCREPANCY SHOULD BE BROUGHT TO THE CONSULTANT'S ATTENTION.

GENERAL DETAILS

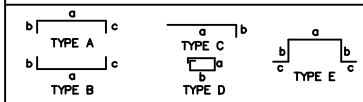
S.No	DESCRIPTION	DETAILS
1	SOIL BEARING CAPACITY	10.00 T/SQM
2	DRY DENSITY OF SOIL	1.75 T/SQM
3	ANGLE OF REPOSE	25.00 DEGREE

BILL OF MATERIALS

ITEM	UNIT	TOTAL
EXCAVATION	CUM	50.7
PCC-(1:4:8)	CUM	1.9
RCC-M20	CUM	6.56
STEEL-Fe415	KG	800

CHAIRS SHALL BE PROVIDED WHEREEVER REQUIRED

BAR BENDING SCHEDULE



BHUTAN TELECOM LTD. THIMPHU

TITLE : FOUNDATION DETAILS FOR 25M HIGH TRIANGULAR TOWER
SBC : 10 T/SQM

DRAWING No.	SH. NO.	REV.
AGD-319		