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
15000	1700													
12500	1700	WP			4488	65X65X5		1	2.5	45x45x5	50x50x4	45x45x04	50x50x4	
10000	1700							2	2.5					
7500	1700				2500	75X75X5		3	2.5	45x45x5	50x50x4	45x45x04		
5000	1950				4898	90x90x6		4	2.5					
2500	2200							5	2.5	45x45x5		50x50x4	50x50x4	
0000	2450				2500	90x90x8		6	2.5					

PLAN VIEWS

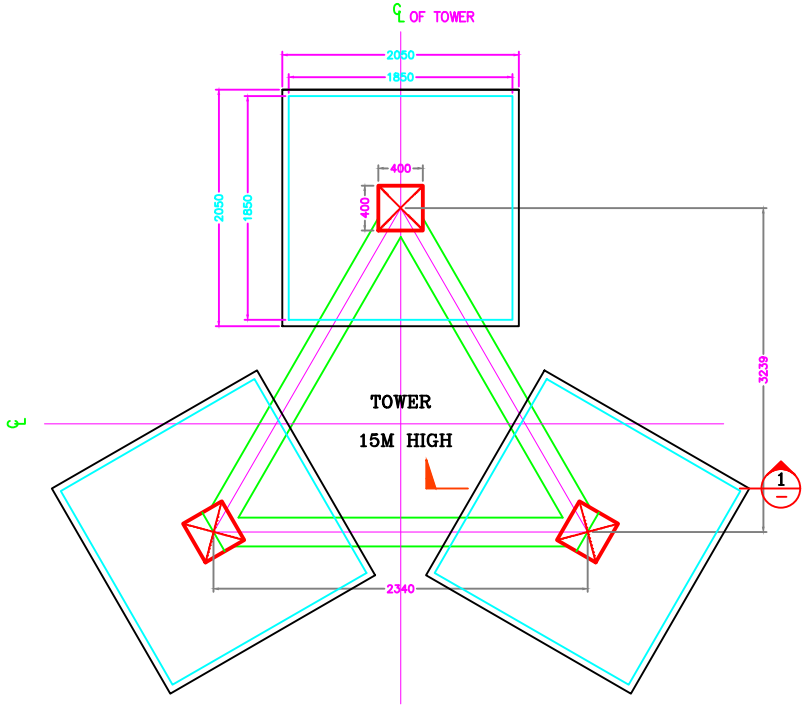
Platform Preview

Tower Weight ≥ 2000 Kg

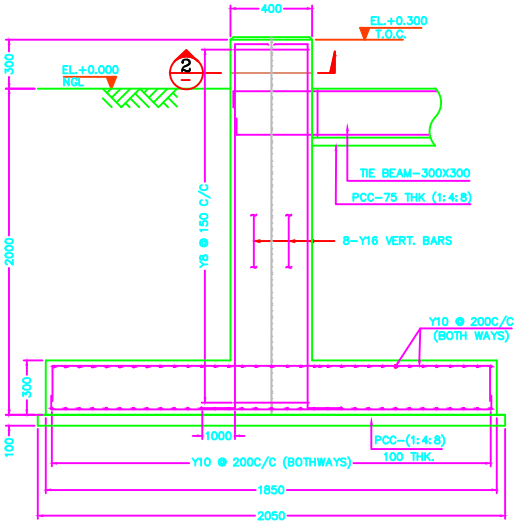
TITLE	15 METER TOWER	Wind Speed	180 KMPH
SUB. TITLE	TRIANGULAR ANGULAR TOWER	Deflection	< 0.5 Degree
Drawing No.	AGD-319B	Loading	6 GSM Antenna (Weight 35kgs) 6 RRU Antenna (Weight 17kgs) 2x0.6m Parabolic MW Antenna
BHUTAN TELECOM LTD. THIMPHU BHUTAN			

Design:	TIA/EIA-222 G
F.O.S.	1.2 Dead Load & 1.6 Wind Load
1	Date : 31.12.2020

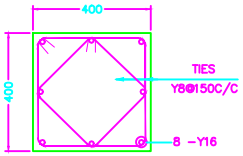
BHUTAN TELECOM LIMITED				
Technical Specification sheet of 15 mtr. 3 Legged Angular Tower AGD-319				
Sl.No			**DETAILS**	**Remarks**
1		**DESIGN SPECIFICATION REFERENCE**	ANSI/TIA-222G	
	1.1	Design Wind Velocity		
		Survival	180Km/h	
	1.2	Twist & Sway	less than 1.0 degree	
	1.3	Factor of safety	1.2 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 0.6m MW	20 Kgs each
	1.5	Antenna Pole Mount stand	8 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 Sq. mm & 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)	1 No	1 no at 11.25m
		Rest		
5		**Foundation bolt & Template**	As per tower design	Included
	5.1	Bolts & Nut with Spring	Hot Dipped Galvanized Property Class 5.6	Extra 5%
	5.2	Plane Washer	As per standard ASTM A 153	
	5.3	Sizes	As per given Design	
	5.4	Hot Dipped Galvanized	As per Standard ISO 1461	85 Microns
6		**Others to specified**		
	6.1	Weight Per Tower	2000 Kgs	(+/-) 5 %
	6.2	Paint	as per International Standard	As per requirement



FOUNDATION KEY PLAN

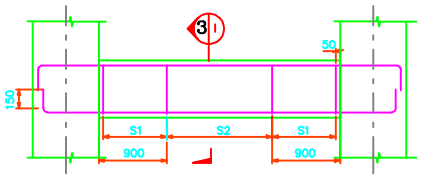


SECTION 1

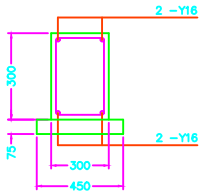


SECTION 2

COLUMN 400X400

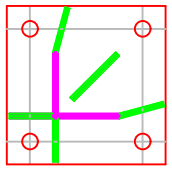


TIE BEAM (TYP DETAILS)

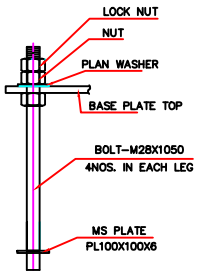


SECTION 3

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



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.

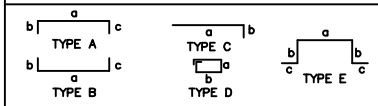
GENERAL DETAILS

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	27.5
PCC-(1:4:8)	CUM	1.5
RCC-M20	CUM	4.71
STEEL-Fe415	KG	420
CHAIRS SHALL BE PROVIDED WHEREEVER REQUIRED		

BAR BENDING SCHEDULE



BHUTAN TELECOM LTD. THIMPHU

TITLE : FOUNDATION DETAILS FOR 15M HIGH TRIANGULAR TOWER
SBC : 10 T/SQM

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