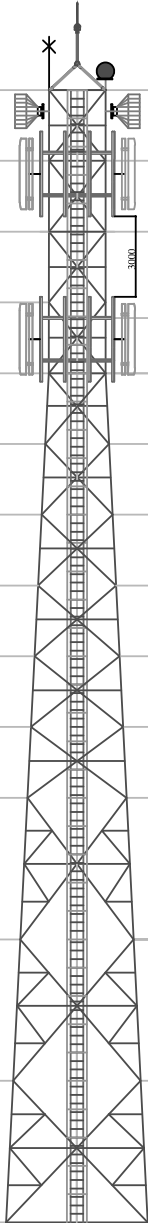
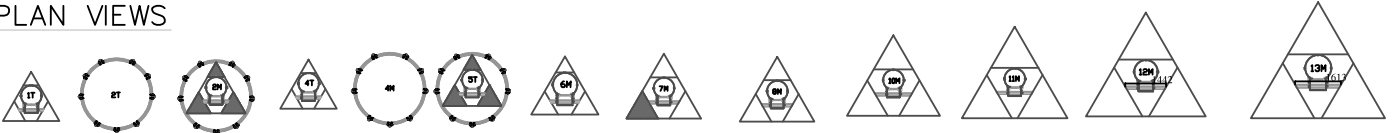


LEVEL	FACE WIDTH	PLATFORM
40000	2000	
37500	2000	Working Platform
35000	2000	
32500	2000	
30000	2000	Working Platform
27500	2250	
25000	2500	
22500	2750	
20000	3000	
17500	3250	
15000	3500	Rest Platform
10000	4000	
5000	4500	
0000	5000	

LEG JOINT NAME	LEG LENGTH	LEGS SIZE	PANEL NO	LENGTH (METER)	DIAGONALS	PANEL TOP - HORIZONTALS	PANEL MID - HORIZONTALS	PLAN BRACING	SEC. BRACING
A	2500	65x65x6	1	2.5	50x50x4	50x50x4	50x50x4	50x50x4	
B	2500	70x70x6	2	2.5	50x50x4	45x45x04	50x50x4	50x50x4	
C	2500	70x70x6	3	2.5	50x5 60x5	45x45x04	50x50x4	50x50x4	
D	2503	100x100x8	4	2.5	50x50x5		50x50x4	50x50x4	
E	2503	110x110x10	5	2.5	50x50x5		50x50x4	50x50x4	
F	2503	130x130x10	6	2.5	55x55x5		50x50x4	50x50x4	
G	5006	130x130x12	7	5	65x65x5		50x50x4	50x50x4	45x45x4
H	5006	150x150x12	8	5	70x70x5		50x50x4	50x50x4	45x45x4
I	5006	150x150x16	9	5	75x75x5		55x55x4	50x50x4	45x45x4



PLAN VIEWS



- 1) Remote Radio Head - 9nos (Total Weight 153kgs.)
- 2) Sectoral Antennas - 9nos (Total Weight 315kgs.)
- 3) Microwave Antennas (0.6m) - 2nos (Total Weight 40kgs.)
- 4) Microwave Antennas (1.2m) - 2nos (Total Weight 60kgs.)

TITLE	40 METER TOWER	Wind Speed	180 KMPH	Design	TIA/EIA-222 G
SUB. TITLE	TRIANGULAR ANGULAR TOWER	Deflection	< 1.0 Degree	Rev.	1
Drawing No.	BT-2023-06	Loading	568 kgs.	Drawn Date	19-11-2022
BHUTAN TELECOM LTD BHUTAN			Tower Weight 7550 kgs.		

Bhutan Telecom 2023 Project				
Technical Specification sheet of 40 mtr. 3 Legged Angular Tower BT-2023-06				
S.N o.			DETAILS	REMARK
1		DESIGN SPECIFICATION	(ANSI/TIA-222G)	
	1.1	Design Wind Velocity		
		Survival	180 KMPH	
	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	568 Kg	
		Remote Radio Head	9 Nos (17 Kg)	153 Kg
		Sectorial Antenna	9 Nos (35 Kg)	315 Kg
		MW Antenna	2 Nos 0.6 m Dia (20 Kg)	40 Kg
			2 Nos 1.2 m Dia (30 Kg)	60 Kg
	1.5	Antenna Mounting Structure	GSM mount - 9 Nos MW Mount - 4 Nos	
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 x 50 mtr. Length	2 core armoured
3		Lighting Protection		
	3.1	Lightning Arrestor	Provision for Mounting ESE	
4	4.1	Structure Of Tower	Self Supprrting 3 legged Angular construction with vertical ladder in the center intergrated with cable tray & horizontal cable tray from tower to Building	
	4.2	Main Leg	90 Degree Angle	
	4.3	Bracing	90 Degree Angle	
	4.4	Climbing Ladder	450 mm Rung Width, 300mm Rung space & 700mm Hoop	
	4.5	Cable Tray Verticle	450 mm Width	along the tower Height
	4.6	Cable Tray Horizontal	450 mm Width	6 MTR.
	4.7	Platforms		
		Working	2 Nos	
		Rest	1 No	
5		Foundation bolt & Template	As Per Tower Design	Included
	5.1	Bolts & Nut with spring &	Hot Dipped Galvanized Property Class 5.6	Extra 5% will be provided
	5.2	Plane washer	As per Standard ASTM A 153	
	5.3	Hot Dipped Galvanization	As per Standard ISO 1461	85 Microns
6	6.1	Weight Per Tower	7550 Kgs	(+/-) 5%
	6.2	Drawing No	BT-2023-06	

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2. USE M20 GRADE CONCRETE AND F8 500 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. SPACING 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
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	90.5
PCC-(1:4:8)	CUM	2.9
RCC-M20	CUM	14.4
STEEL-F8500	KG	1280

CHAIRS SHALL BE PROVIDED WHEREEVER REQUIRED

Design

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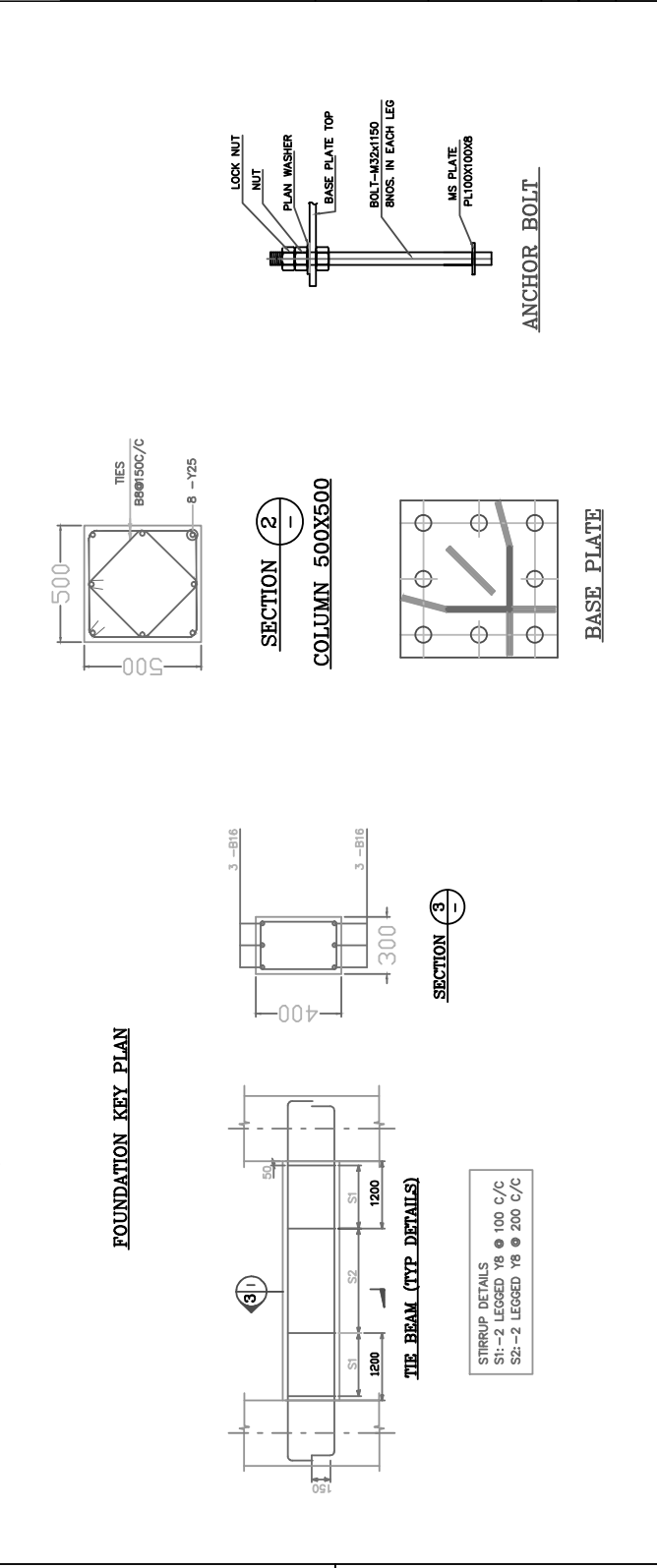
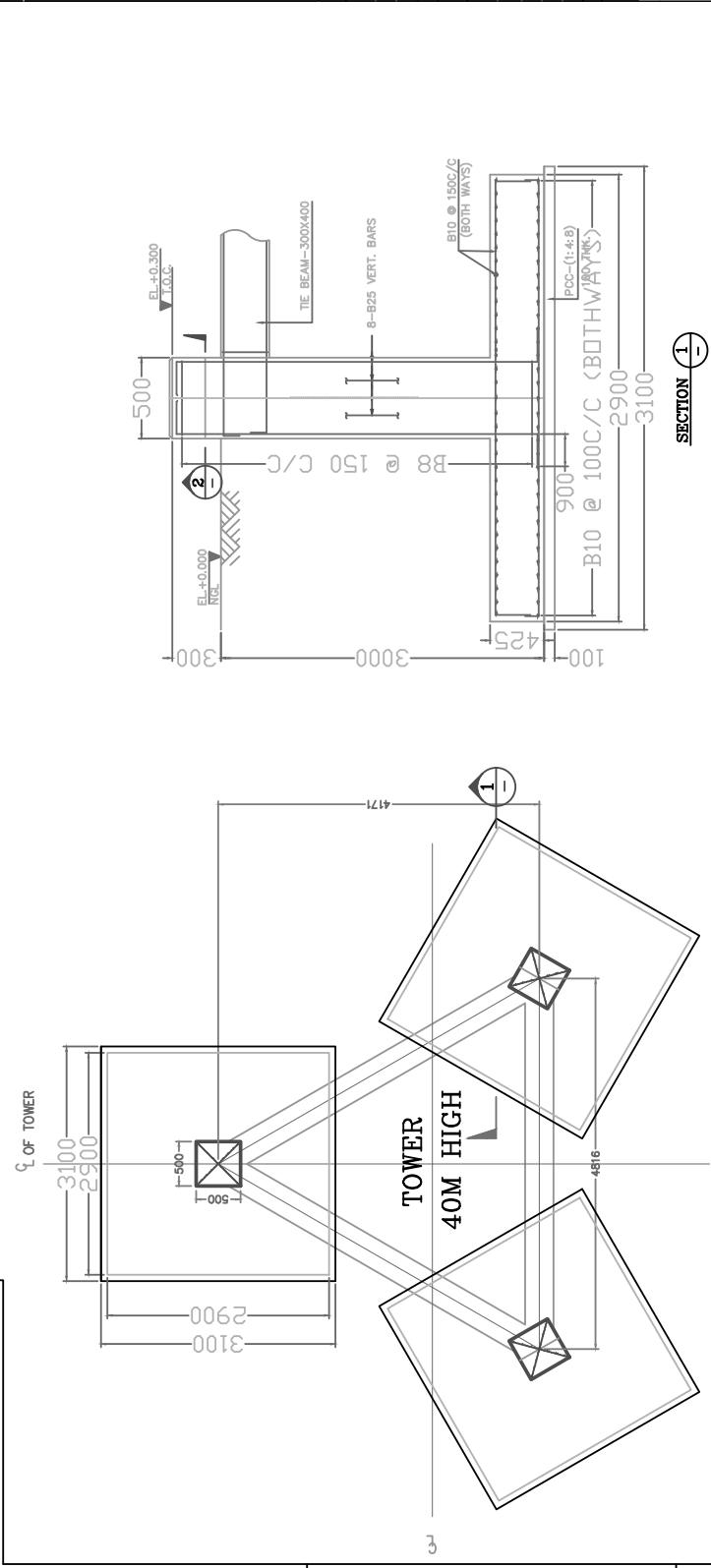
Client

BHUTAN TELECOM LTD.
BHUTAN

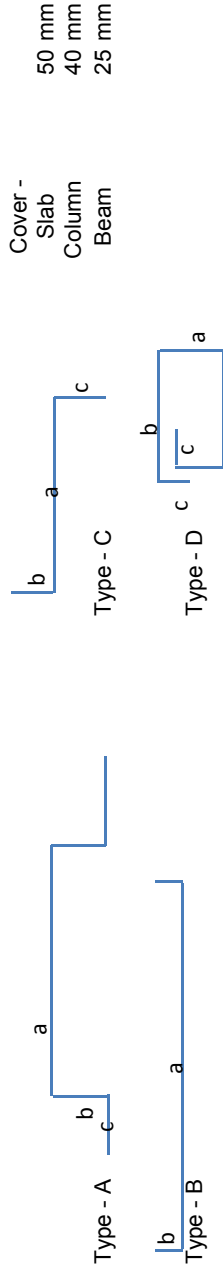
PROJECT GENERIC ISOLATED FOUNDATION DESIGN
BHUTAN

TITLE FOUNDATION DETAILS FOR 40M HIGH TRIANGULAR TOWER
SEC : 10 T/SQM

DRAWING No.	SH. NO.	REV.
BT-2023-06		



Bar Bending Schedule of 40m high 3legged tower



Item	Position	Type	Dia. Of Rebar (mm)	Size	Size	Size	Length (mm)	Qty in Nos both ways or total	Unit wt (kg/m)	Total Weight of (kg)	
				a (mm)	b (mm)	c (mm)					
Raft Slab	Top	B	B10	2800	150	-	3100	120	0.62	230	
	Bottom	B	B10	2800	150	-	3100	174	0.62	333	
Tie Beams	Top	B	B16	5216	300	-	5816	9	1.58	83	
	Bottom	B	B16	5216	300	-	5816	9	1.58	83	
	Strips	D	B8	250	350	80	1360	96	0.40	52	
	Main	C	B25	3200	375	900	4475	24	3.86	414	
Column	Ties	D	B8	392	392	80	1728	69	0.40	47	
		D	B8	277	277	80	1269	69	0.40	35	
								Total			1280

* Chairs Shall be Provided whenever required

Notes :

1. Dimensions of Bars are along the Center Lines.
3. Splicing of Bars should not be more than 50%. Length of splice as per Standards.