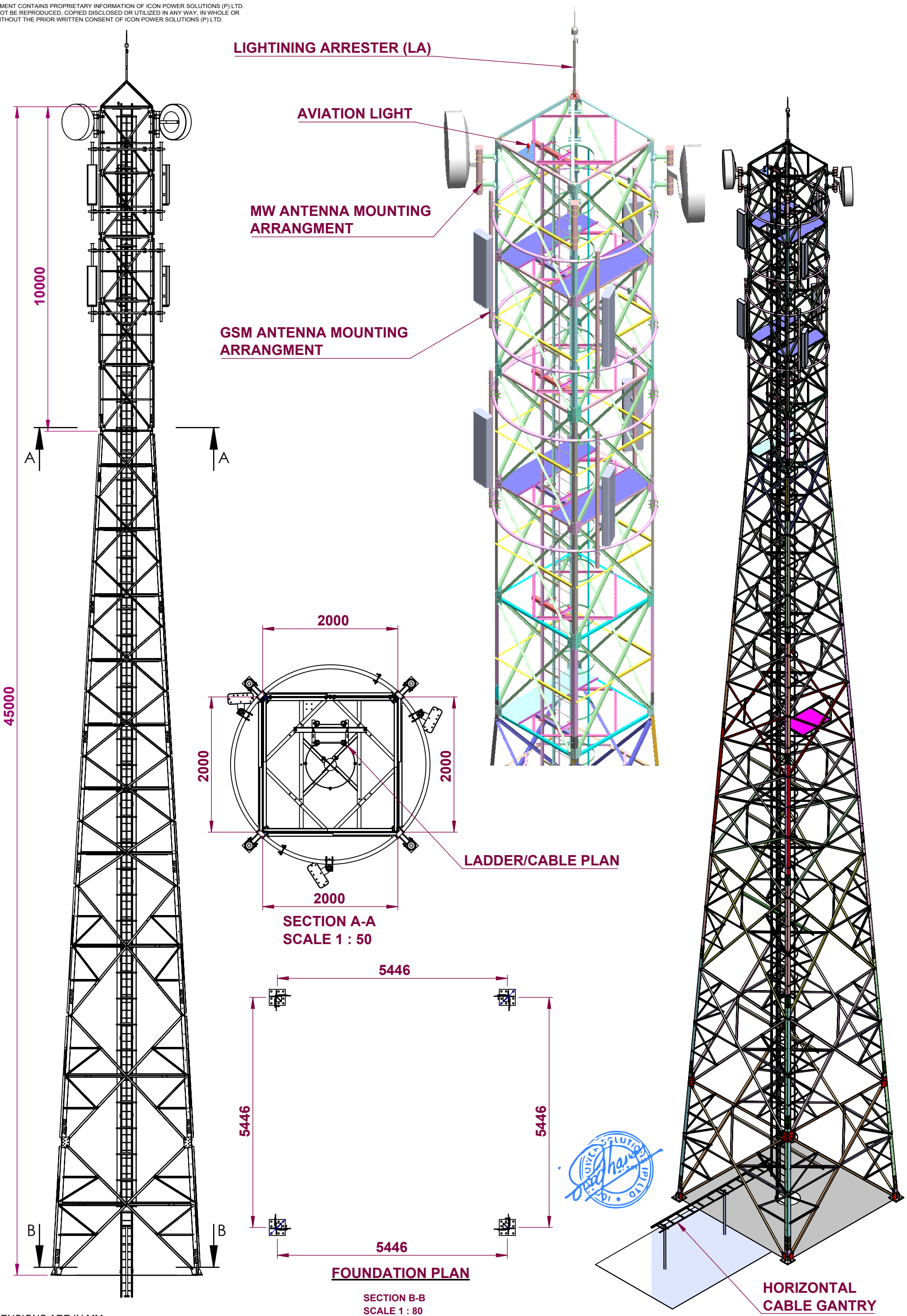




NOTE:-
ALL DIMENSIONS ARE IN MM

	NAME	SIGNATURE	DATE	TOLERANCE:	SCALE: 1:500	DRW. NO:	DRW. NAME:
DRAWN BY:	PRAM	PRAM	28-11-2025	ISO 2768-m		IPS-45M-4L-BT-6G2M	45 METER 4 LEG TOWER
DESIGNED BY:	SUJITH	SUJITH	28-11-2025			REV 0	PROJECT NAME:
CHECKED BY:	SUJITH	SUJITH	28-11-2025			1 OF 1	BHUTAN TELECOM
						SIZE: A3	



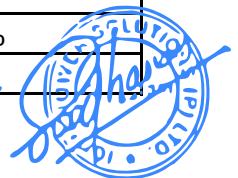
ICON POWER SOLUTIONS(P) LTD.
112-113, Sector-5, IMT Manesar,
Gurugram, Haryana, INDIA-122050
TEL : +91 124 4120600/01/02

ICON POWER SOLUTIONS PVT LTD

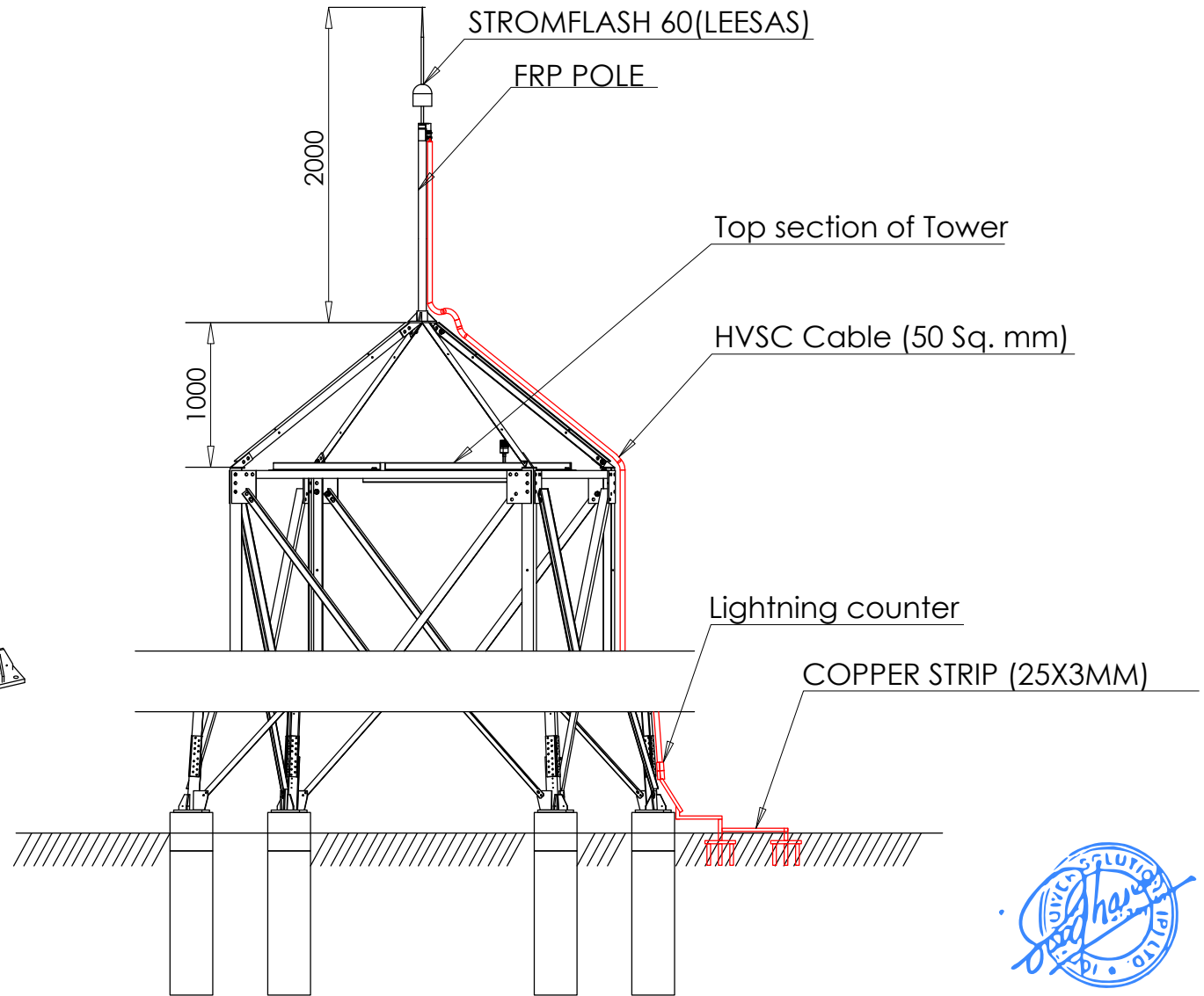
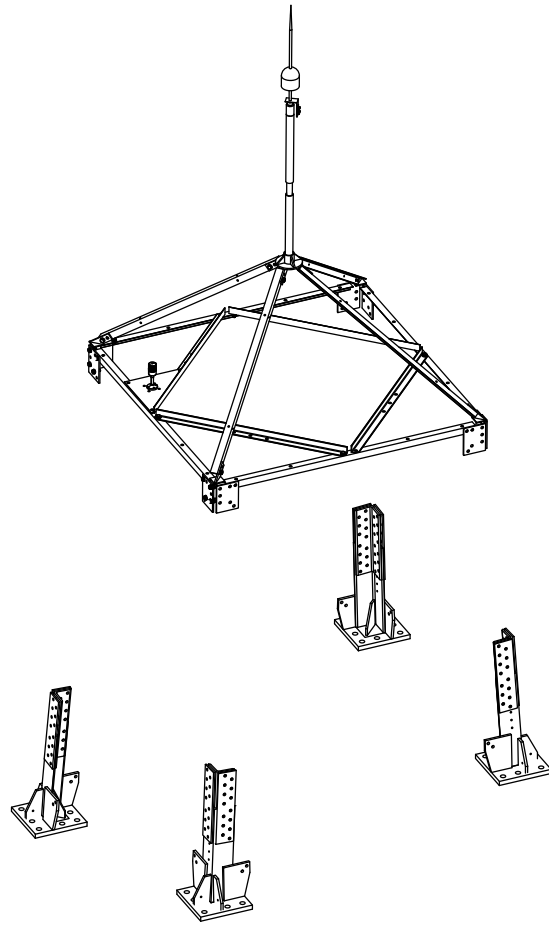
112 113, Sector 5, IMT Manesar, Gurgaon - 122050, Haryana

Technical Specification sheet of 45MTR 4 Legged Angular Tower

S.No.		DESCRIPTION	DETAILS	REMARK
1		DESIGN SPECIFICATION	(ANSI/TIA-222G)	
	1.1	Design Wind Velocity		
		Survival	150 KMPH	
		Operational	105 KMPH	
	1.2	Twist & Sway	Less than <.5 degree	
	1.3	Factor of Safety	1.2 For Dead Load	
			1.6 For Wind Load	
	1.4	Antenna Loading		
		GSM Antenna	6 nos.	200 Kg
		RRU	6 nos.	90 Kg
		1.2 Dia MW Antenna	2nos.	100 Kg
	1.5	Antenna Pole Mount stand	As per requirement	
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 55 mtr. Length	2 core armoured
3		Lighting Protection & Earthing System(Grounding system)		
	3.1	Lightning Arrestor	Lightning Arrestor (ESE) STORMFLASH 60 (LEESAS)	1 nos with FRP mast and HVSC cable & Counter
4	4.1	Structure Of Tower	Self Suppprtng 4 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	Steel Type	Mild Steel - E 250	
	4.8	Platforms		
		Working	2 Nos	38 & 42.5 Mtr
		Rest	2 Nos.	15 Mtr & 30.5 Mtr
5	5.1	Foundation bolt & Template	As Per Tower Design	Included
	5.2	Bolts & Nut with spring &	Hot Dipped Galvanized Property Class 5.6	Extra 2%
		Plane washer	As per Standard ASTM A 153	
	5.3	Size	As per Design Specs.	
6	6.0	Hot Dipped Galvanization	As per Standard ISO 1461	85 Microns
7		<u>Others to be specified</u>		
	7.1	Weight Per Tower	10400 Kg	(+/-) 5%
	7.2	Drawing No.	IPS-45M-4L-BT-6G2M	



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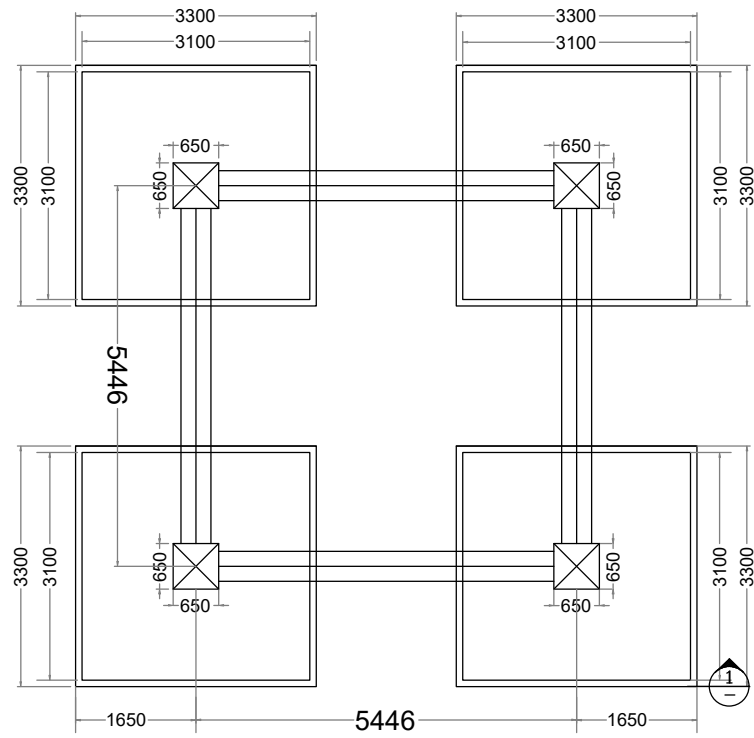
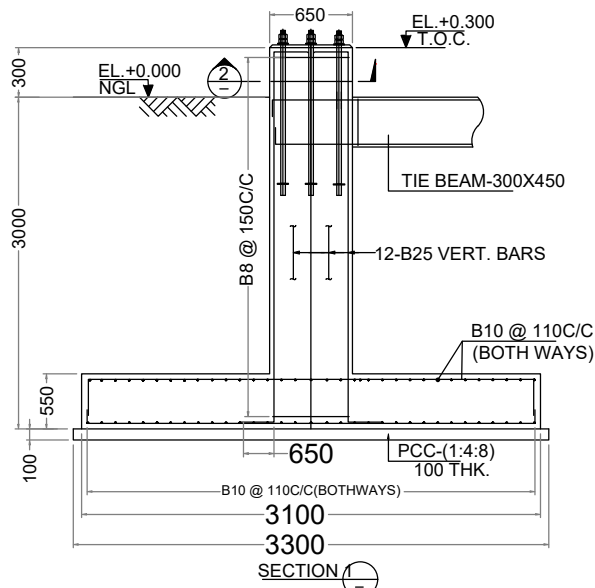


	NAME	SIGNATURE	DATE	CHANGES	NAME	SIGNATURE	DATE	NO:	TOLERANCE:	SCALE: 1:50	DRW. NO:	DRW. NAME:
DRAWN BY:	PANKAJ	PANKAJ	03-12-2025						X ±		LA-ASSY-4LEG TOWER	LIGHTING ARRESTOR MOUNTING ARRANGEMENT-4LEG
DESIGNED BY:	SUJITH	SUJITH	03-12-2025						X.X ±		REV 0	PROJECT NAME:
CHECKED BY:	SUJITH	SUJITH	03-12-2025						X.XX ±		SIZE: A4	BHUTAN TELECOM LTD 2026
									X.XXX ±			
									ANGLES ±			

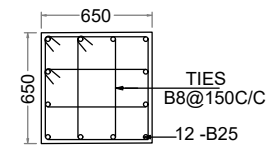


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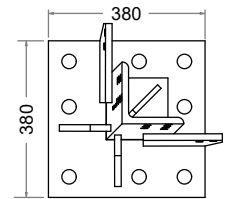
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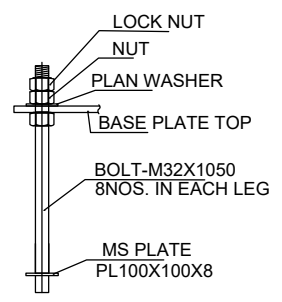
FOUNDATION KEY PLAN



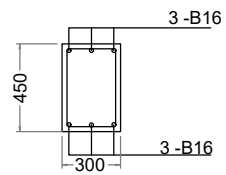
SECTION 2
COLUMN 650X650



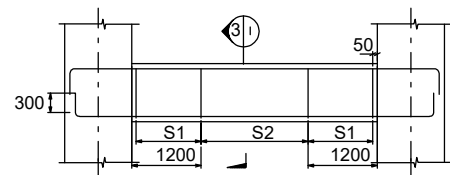
BASE PLATE



ANCHOR BOLT



SECTION 3



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

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
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	1.8 T/SQM
3	ANGLE OF REPOSE	30.00 DEGREE

BILL OF MATERIALS

ITEM	UNIT	TOTAL
EXCAVATION	CUM	130.98
PCC-(1:4:8)	CUM	4.356
RCC-M20	CUM	28.49
STEEL-Fe415	KG	2312.00

CHAIRS SHALL BE PROVIDED WHEREEVER REQUIRED



REVISION NOTES

REV. NO.	DESCRIPTION	DATE	SIGN.
DRAWN	CHECKED	APPROVED	DATE
HEMANT	SUIJITH	SUIJITH	09-11-2025

CLIENT: BHUTAN TELECOM

DESIGN BY: ICON POWER SOLUTIONS PVT. LTD.

GURGAON

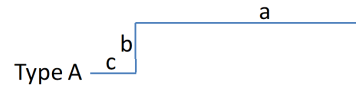
PROJECT: NETWORK EXPANSION 2025

TITLE: FOUNDATION DETAILS FOR 45M-4LEG TOWER

SBC : 10 T/SQM

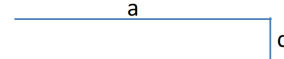
DRAWING No.	SH. NO.	REV.
IPS-45M-4L-BT-6G2M	1 OF 2	01

IPS-45M-4L-BT-6G2M Tower Bar Bending Schedule



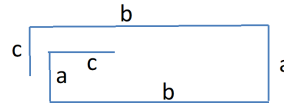
Type A

Type C



Type B

Type D



Cover Slab 50 mm

Column 40 mm

Beam 25 mm

Item	Position	Type	Dia. Of Rebar	Size	Size	Size	Length	Qty in Nos both ways or total	Unit wt	Total Weight of
				a	b	c				
			(mm)	(mm)	(mm)	(mm)	(mm)		(kg/m)	(kg)
Raft Slab	Top	B	B10	3000	300	300	3600	218	0.62	486.58
	Bottom	B	B10	3000	300	300	3600	218	0.62	486.58
Tie Beams	Top	B	B16	5446	300	300	6046	12	1.58	114.63
	Bottom	B	B16	5446	300	300	6046	12	1.58	114.63
	Strips	D	B8	250	400	80	1460	144	0.40	84.10
Column	Main	C	B25	3200	0	650	3850	48	3.86	713.33
	Ties	D	B8	570	570	80	2440	88	0.40	85.89
		D	B8	570	200	80	1700	176	0.40	119.68
		Total								2312.00

* 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.



REVISION NOTES

REV. NO.	DESCRIPTION	DATE	SIGN.
DRAWN	CHECKED	APPROVED	DATE
HEMANT	SUJITH	SUJITH	09-11-2025
			NTS

CLIENT:

BHUTAN TELECOM

DESIGN BY: ICON POWER SOLUTIONS PVT. LTD.
GURGAON

PROJECT: NETWORK EXPANSION 2025

TITLE: FOUNDATION DETAILS FOR 45M-4LEG TOWER
SBC : 10 T/SQM

DRAWING No.	SH. NO.	REV.
IPS-45M-4L-BT-6G2M	2 OF 2	01