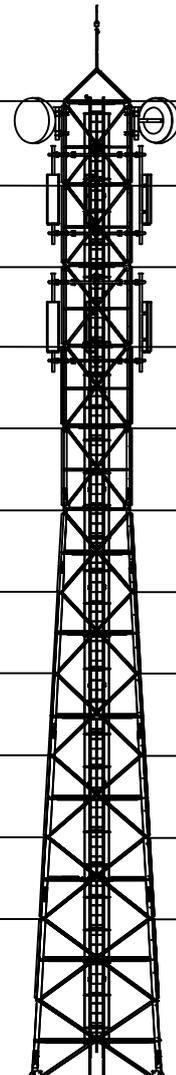


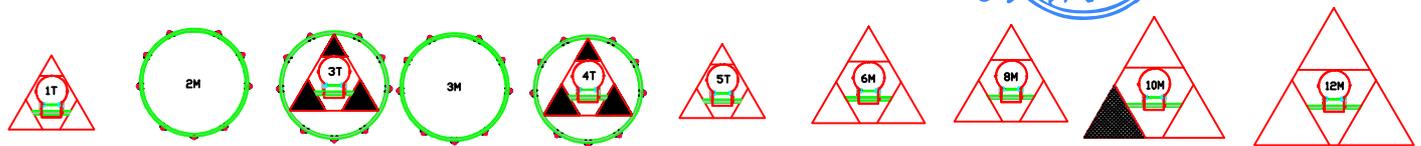
LEVEL	FACE WIDTH	PLATFORM	LEG JOINT NAME	LEG LENGTH	LEGS SIZE	PANEL NO.	LENGTH (METER)	DIAGONALS	PANEL TOP- HORIZONTALS	PANEL MID- HORIZONTALS	PLAN BRACING	SEC. BRACING
30000	1700		A	5000	75x75x6	1	2	50x50x4	50x50x4	45x45x4	45x45x4	
27500	1700	WORKING PLATFORM	B	5000	75x75x6	2	2.5	55x55x4	50x50x4	45x45x4	45x45x4	
25000	1700		C	5000	75x75x6	3	2.5	55x55x4	50x50x4	45x45x4	45x45x4	
22500	1700	WORKING PLATFORM	D	2500	100x100x8	4	2.5	55x55x5			50x50x4	
20000	1950		E	2503	110x110x12	5	2.5	65x65x5			50x50x4	
17500	2200		F	5000	120x120x12	6	2.5	60x60x5			50x50x4	
15000	2450		G	5000	130x130x12	7	2.5	60x60x5			50x50x4	
12500	2700		H	5000		8	2.5				50x50x4	
10000	2950	REST PLATFORM	I	5000		9	2.5				50x50x4	
5000	3450		J	5000		10	2.5				50x50x4	
0000	3909		K	5000		11	5	70x70x5			50x50x4	45x45x4



30 Mtr

- Loading**
- GSM Antenna - 6 nos
  - RRU- 6 nos
  - MW Antenna- 2 nos

**PLAN VIEWS**

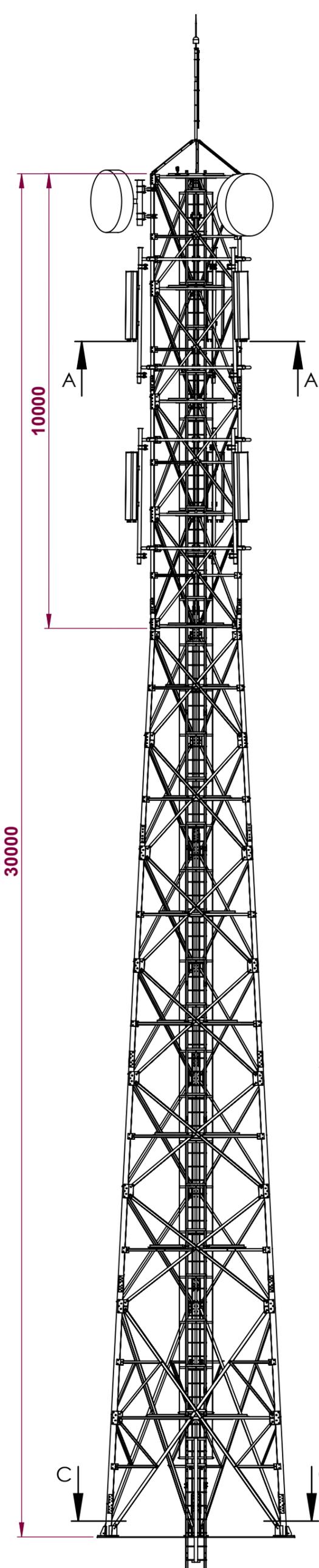


NOTE:- ALL DIMENSIONS ARE IN MM

Weight per Tower 5250 kgs.

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DRAWN BY: PRAM	SIGNATURE: PRAM	DATE: 28-11-2025	TOLERANCE: ISO 2768-m	SCALE: 1:1	DRW. NO: IPS-30M-3L-BT-6G2M	DRW. NAME: 30 METER 3 LEG TOWER	 <b>ICON POWER SOLUTIONS(P) LTD.</b> 112-113, Sector-5, IMT Manesar, Gurugram, Haryana, INDIA-122050 TEL : +91 124 4120600/01/02
DESIGNED BY: SUJITH	SIGNATURE: SUJITH	DATE: 28-11-2025			REV 0	SHEET NO: 1 OF 1	
CHECKED BY: SUJITH	SIGNATURE: SUJITH	DATE: 28-11-2025			SIZE: A3	PROJECT NAME: BHUTAN TELECOM	

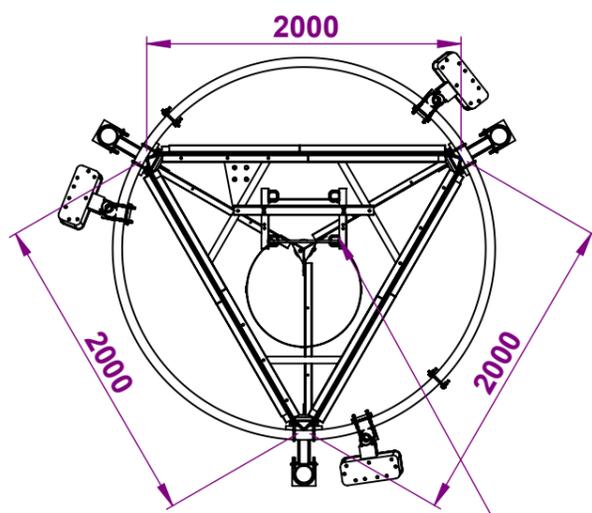
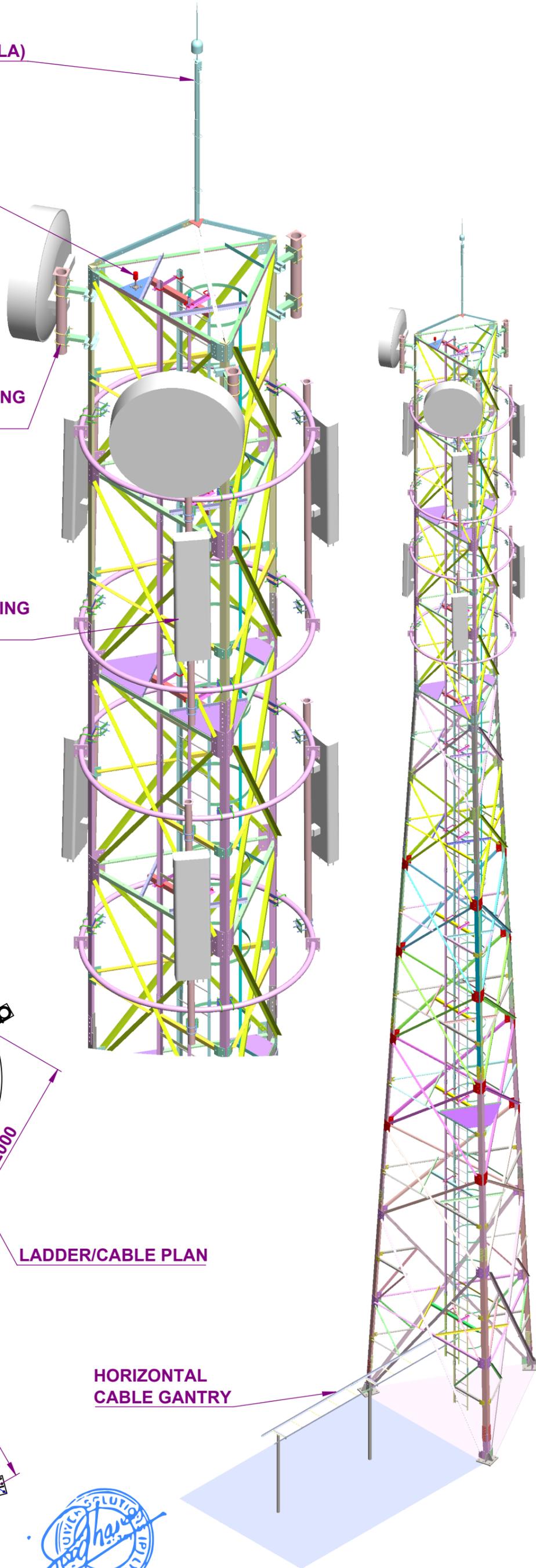


LIGHTNING ARRESTER (LA)

AVIATION LIGHT

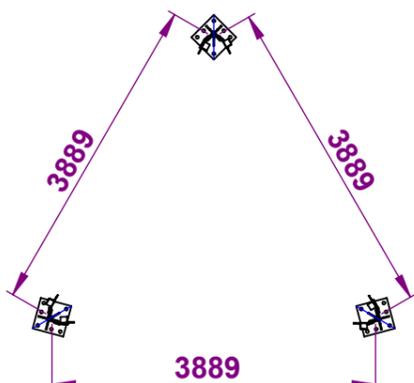
MW ANTENNA MOUNTING ARRANGEMENT

GSM ANTENNA MOUNTING ARRANGEMENT



SECTION A-A  
SCALE 1 : 45

LADDER/CABLE PLAN



FOUNDATION PLAN

SECTION C-C  
SCALE 1 : 85

HORIZONTAL CABLE GANTRY

NOTE:- ALL DIMENSIONS ARE IN MM

DRAWN BY:	PRAM	SIGNATURE	PRAM	DATE	29-11-2025	TOLERANCE:	ISO 2768-m	SCALE: 1:110	DRW. NO:	IPS-30M-3L-BT-6G2M	DRW. NAME:	30 METER TOWER
DESIGNED BY:	SUJITH	SIGNATURE	SUJITH	DATE	29-11-2025				REV	0	SHEET NO:	1 OF 1
CHECKED BY:	SUJITH	SIGNATURE	SUJITH	DATE	29-11-2025				SIZE:	A3	PROJECT NAME:	BHUTAN TELECOM

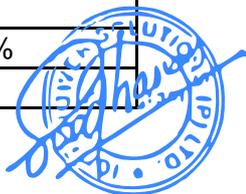
ICON POWER SOLUTIONS(P) LTD.  
112-113, Sector-5, IMT Manesar,  
Gurugram, Haryana, INDIA-122050  
TEL : +91 124 4120600/01/02

# ICON POWER SOLUTIONS PVT LTD

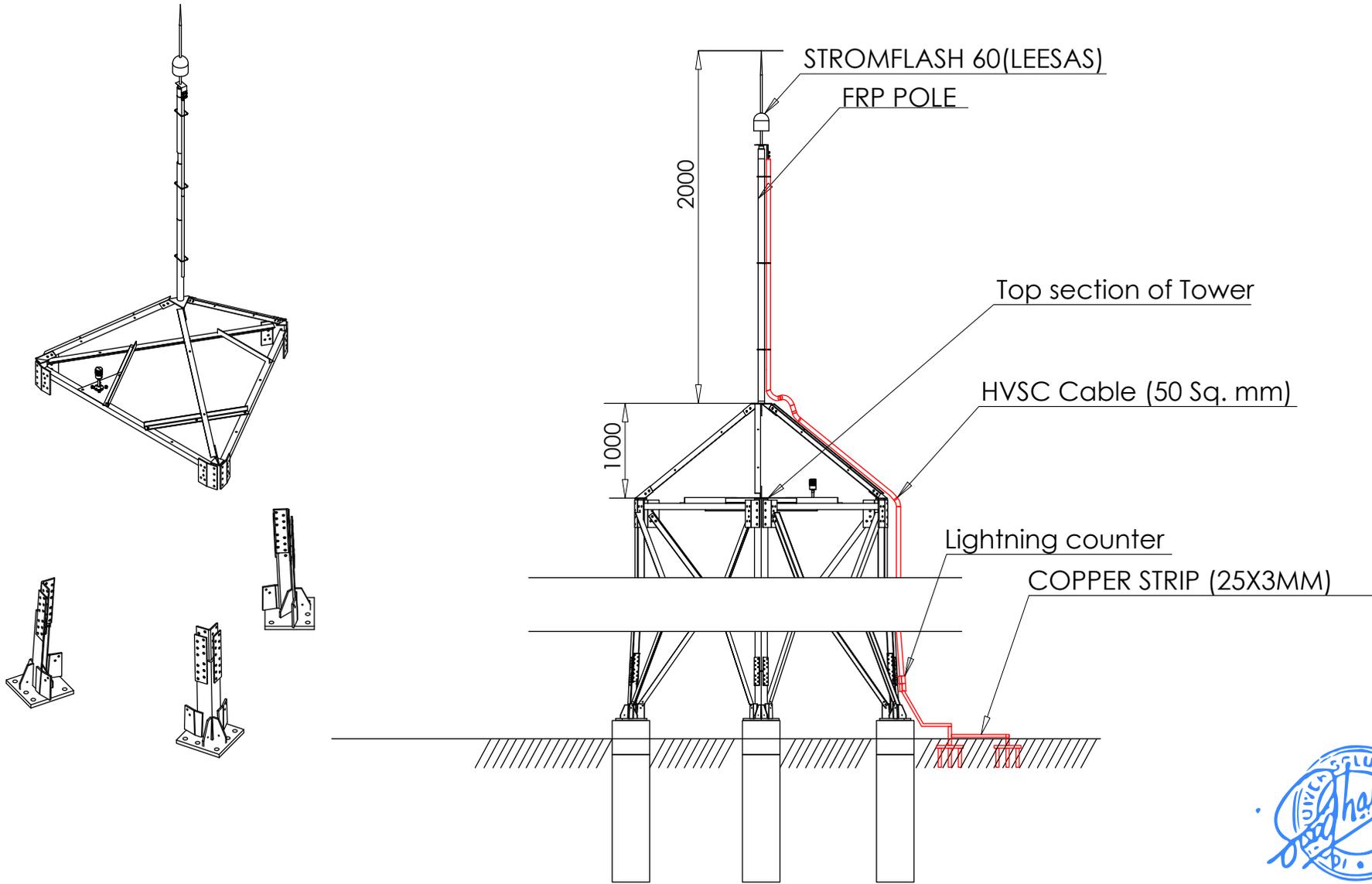
112 113, Sector 5, IMT Manesar, Gurgaon - 122050, Haryana

## Technical Specification sheet of 30MTR 3 Legged Triangular Tower

S.No.	DESCRIPTION	DETAILS	REMARK
1	<b>DESIGN SPECIFICATION</b>	(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	<b>Obstruction Light System</b>		
2.1	No .Of Obstruction Light Lamp&Watts	1 No. LED Type	
2.2	Power Cable Type&Length	2.5 Sqmm x 40 mtr. Length	2 core armoured
3	<b>Lighting Protection &amp; Earthing System(Grounding system)</b>		
3.1	Lightning Arrestor	Lightning Arrestor (ESE) STORMFLASH 60 (LEESAS)	1 nos with FRP mast and HVSC cable & Counter
4	4.1 <b>Structure Of Tower</b>	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 Steel Type	Mild Steel - E 250	
	4.8 Platforms		
	Working	2 Nos	22.5 & 27.5 Mtr
	Rest	1 Nos.	10 mtr
5	5.1 Foundation bolt & Template	As Per Tower Design	Included
	5.2 Bolts & Nut with spring & Plane washer	Hot Dipped Galvanized Property Class 5.6	Extra 2%
	5.3 Size	As per Standard <b>ASTM A 153</b>	
	5.3 Size	As per Design Specs.	
6	6.0 Hot Dipped Galvanization	As per Standard <b>ISO 1461</b>	85 Microns
7	<u>Others to be specified</u>		
	7.1 Weight Per Tower	5250 Kg	(+/-) 5%
	7.2 Drawing No.	IPS-30M-3L-BT-6G2M	

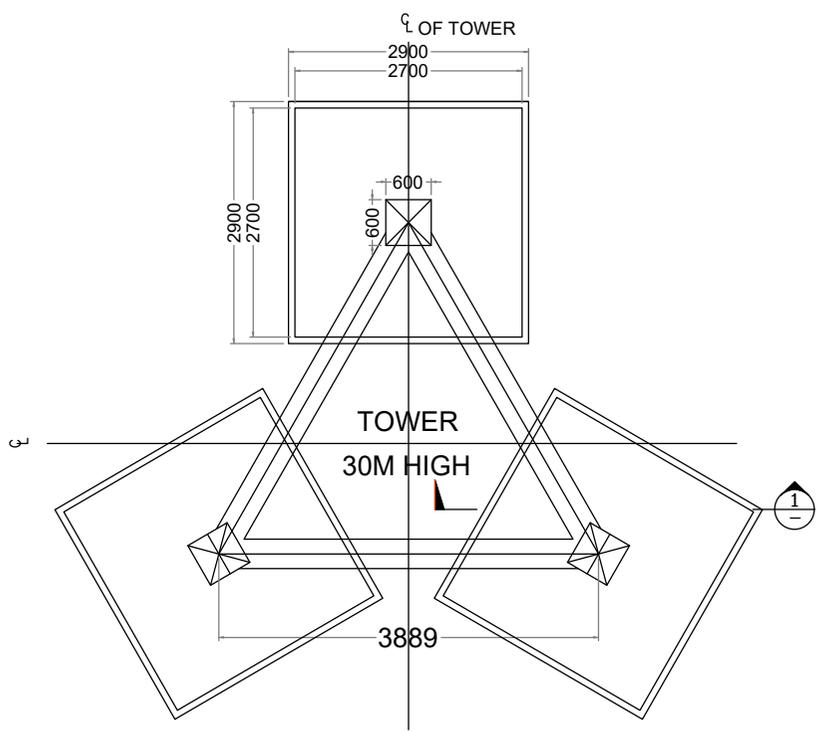
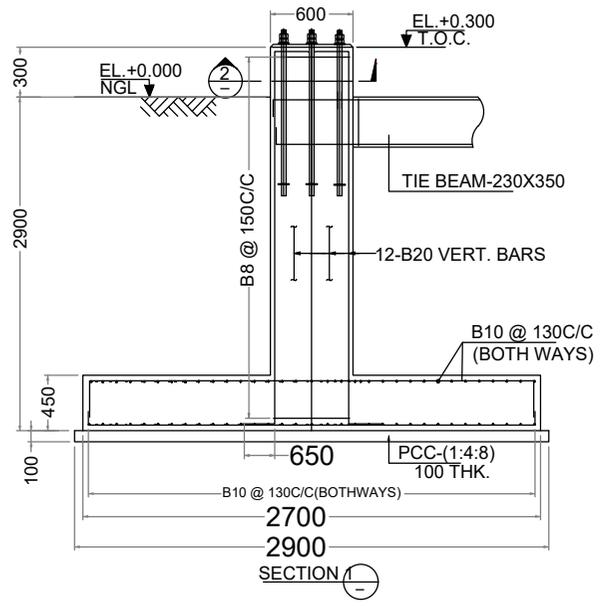


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	NAME	SIGNATURE	DATE	CHANGES	NAME	SIGNATURE	DATE	NO:	TOLERANCE:	SCALE: 1:50	DRW. NO:	DRW. NAME:
DRAWN BY:	PANKAJ	PANKAJ	03-12-2025						X ±		LA-ASSY-3LEG TOWER	LIGHTING ARRESTOR MOUNTING ARRANGEMENT-3LEG
DESIGNED BY:	SUJITH	SUJITH	03-12-2025						X.X ±		REV 0	PROJECT NAME:
CHECKED BY:	SUJITH	SUJITH	03-12-2025						X.XX ±			BHUTAN TELECOM LTD 2026
									X.XXX ±			
									ANGLES ±			


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



FOUNDATION KEY PLAN

- NOTES**
- ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
  - USE M20 GRADE CONCRETE AND Fe 415 GRADE FOR STEEL.
  - CLEAR COVER TO MAIN REINFORCEMENT:-  
(a) 50MM FOR FOUNDATION (b) 25MM FOR BEAMS  
(c) 40MM FOR COLUMNS
  - PRIOR TO AND DURING CONCRETING ALL BOLTS SHALL BE SECURELY HELD IN POSITION BY USE OF TEMPLATE.
  - BEFORE COMMENCEMENT OF CONSTRUCTION USING THIS DESIGN, CLIENT/CONTRACTOR SHALL CARRY OUT DETAILED SOIL INVESTIGATION OF EVERY SITE.
  - THIS FOUNDATION DESIGN SHALL NOT BE USED IN CASE HIGHLY SOIL ARE FOUND AT ANY DEPTH DURING SOIL INVESTIGATION.
  - CONCRETE SHALL BE MECHANICALLY MIXED & VIBRATED.
  - SPlicing OF BARS SHALL NOT BE MORE THAN 50% AT ANY LOCATION.
  - PROPER CURING OF CONCRETE SHALL BE DONE.
  - BENDING OF BARS SHALL BE AS PER IS:2502.
  - 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	78.32
PCC-(1:4:8)	CUM	2.52
RCC-M20	CUM	12.84
STEEL-Fe415	KG	1101.34

CHAIRS SHALL BE PROVIDED WHEREEVER REQUIRED



**REVISION NOTES**

REV. NO.	DESCRIPTION	DATE	SIGN.
DRAWN	CHECKED	APPROVED	DATE
HEMANT	SUJITH	SUJITH	01-12-2025
			NTS

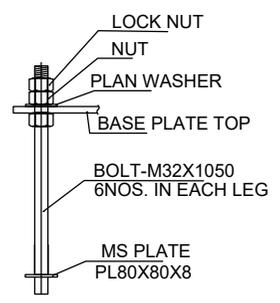
CLIENT: **BHUTAN TELECOM**

DESIGN BY: **ICON POWER SOLUTIONS PVT. LTD. GURGAON**

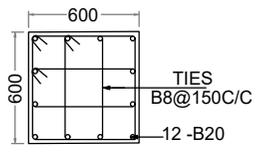
PROJECT: **NETWORK EXPANSION 2025**

TITLE : **FOUNDATION DETAILS FOR 30M HIGH TRIANGULAR TOWER**  
SBC : 10 T/SQM

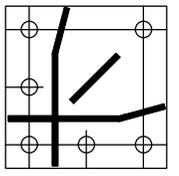
DRAWING No.	SH. NO.	REV.
IPS-30M-3L-BT-6G2M	1 OF 2	01



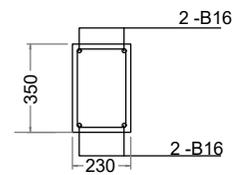
ANCHOR BOLT



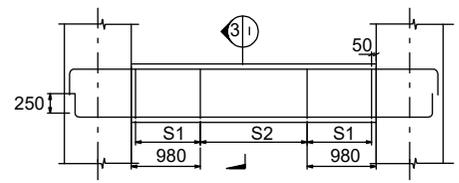
SECTION 2  
COLUMN 600X600



BASE PLATE



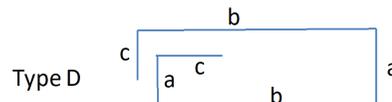
SECTION 3



TIE BEAM (TYP DETAILS)

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

## IPS-30M-3L-BT-6G2M Tower Bar Bending Schedule



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)
Raft Slab	Top	B	B10	2600	250	250	3100	120	0.62	230.64
	Bottom	B	B10	2600	250	250	3100	120	0.62	230.64
Tie Beams	Top	B	B16	3889	250	250	4389	6	1.58	41.61
	Bottom	B	B16	3889	250	250	4389	6	1.58	41.61
	Strips	D	B8	180	300	80	1120	87	0.40	38.98
Column	Main	C	B20	3100	0	650	3750	36	2.47	333.45
	Ties	D	B8	512	512	80	2208	63	0.40	55.64
		D	B8	512	200	80	1584	126	0.40	79.83
<b>Total</b>										<b>1101.34</b>

\* Chairs Shall be Provided whenever required

Notes :

- Dimensions of Bars are along the Center Lines.
- 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	SCALE
HEMANT	SUJITH	SUJITH	01-12-2025	NTS

CLIENT:

BHUTAN TELECOM

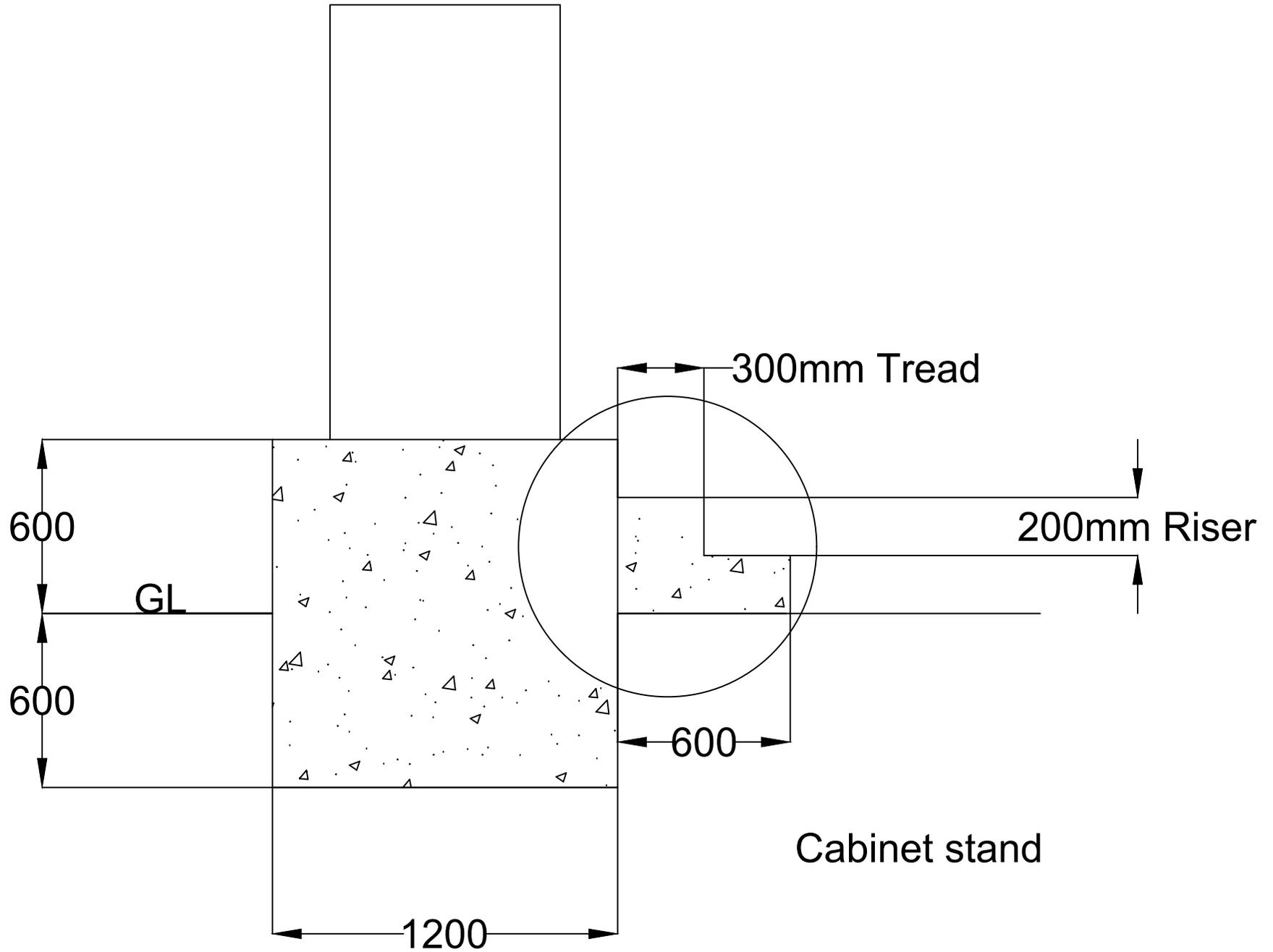
DESIGN BY: ICON POWER SOLUTIONS PVT. LTD.  
GURGAON

PROJECT:

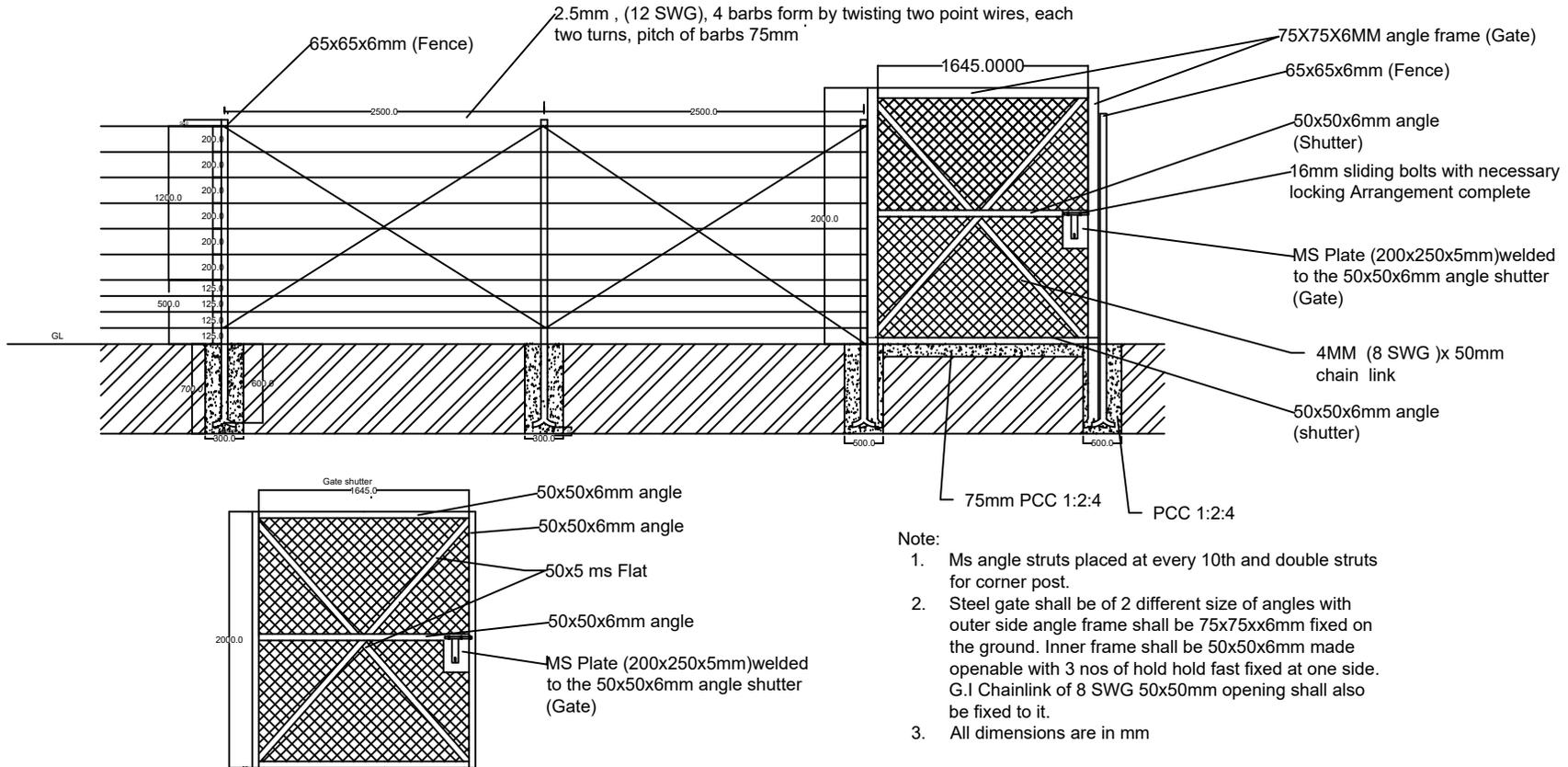
NETWORK EXPANSION 2025

TITLE : FOUNDATION DETAILS FOR 30M HIGH TRIANGULAR TOWER  
SBC : 10 T/SQM

DRAWING No.	SH. NO.	REV.
IPS-30M-3L-BT-6G2M	2 OF 2	01



## BARBED WIRE FENCING AND GATE DRAWING



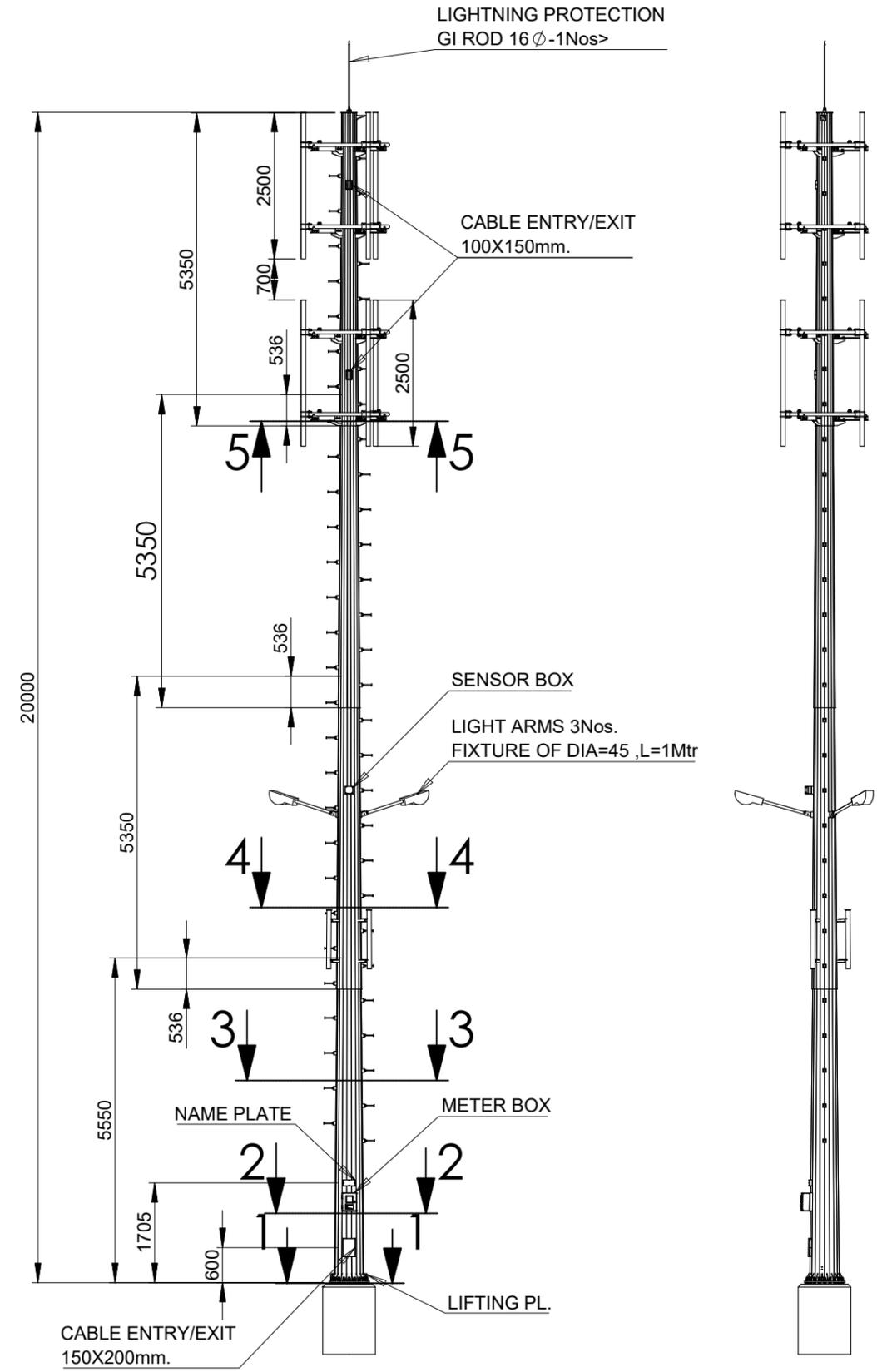
Title : Barbed wire fencing

BHUTAN TELECOM LIMITED

Checked by:

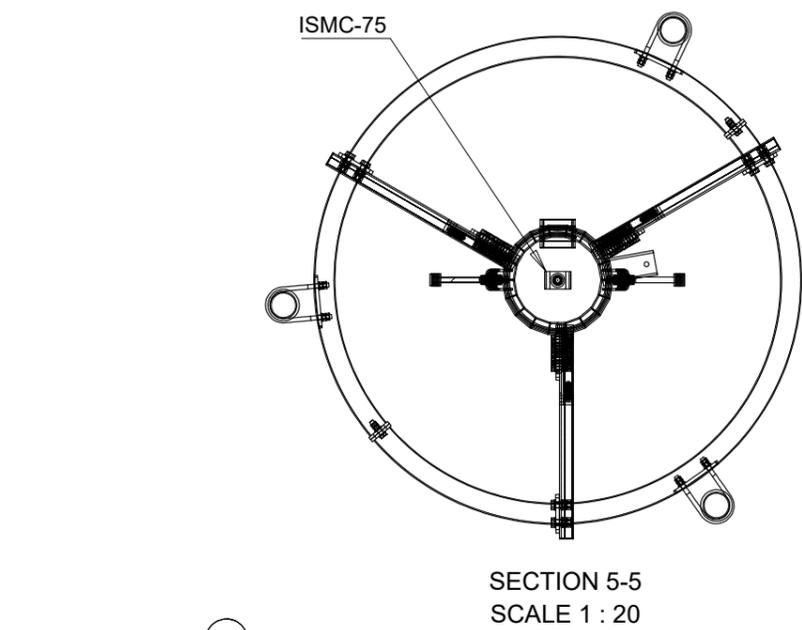
Approved by:

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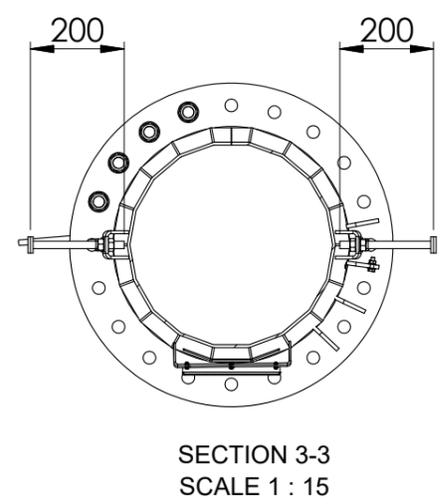


**ELEVATION**

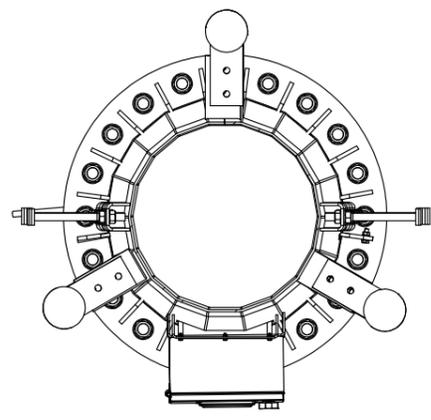
NOTE:-  
1.-ALL DIMENSIONS ARE IN MM, EXPECTED OTHERWISE SHOWN.  
2.-POLE SHAFT PROFILE WITH 18 SIDED.



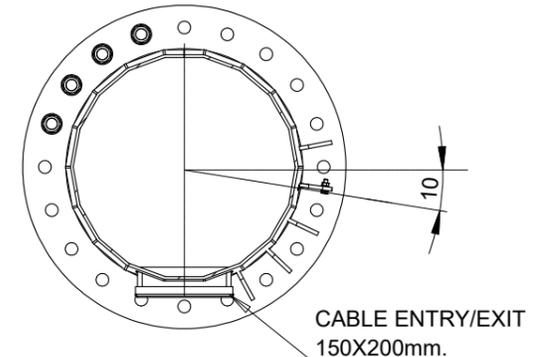
SECTION 5-5  
SCALE 1 : 20



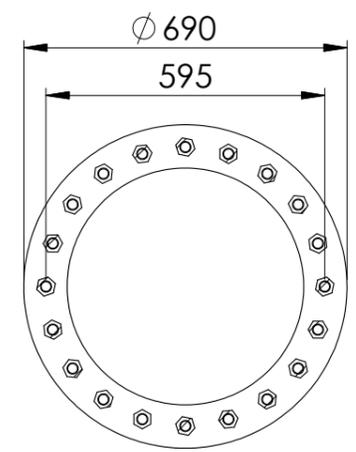
SECTION 3-3  
SCALE 1 : 15



SECTION 4-4  
SCALE 1 : 15



SECTION 2-2  
SCALE 1 : 15



SECTION 1-1  
SCALE 1 : 15



Design Standard : IS 875 (Part 3)  
Wind Speed : 150 KMPH  
Operational Wind Speed : 105 KMPH  
Structure : Octagonal  
Twist & Sway limit : < 1.0 degree at 105 KMPH  
Loading : 6 GSM Antenna  
6 RRU  
Street Light : 3 x 100W LED with LDR  
All part will Hot Dip Galvanized as per Standard ISO 1461  
Fail Arrest safety system will be included along with all monopoles.

NAME	SIGNATURE	DATE	CHANGES
DRAWN BY: PANKAJ	PANKAJ	02.12.2025	
DESIGNED BY: SUJITH	SUJITH	02.12.2025	
CHECKED BY: SUJITH	SUJITH	02.12.2025	

NAME	SIGNATURE	DATE	NO.	TOLERANCE:
				ISO 2768-m

SCALE:1:100	DRW. NO:	DRW. NAME:
	ICGA10634-20M	20MTR SLIP JOINT MONOPOLE
REV: 0	SHEET NO: 1 OF 1	PROJECT NAME: BHUTAN TELECOM LTD. 2026

SIZE:
A3



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

# 20 M CIVIL FOUNDATION DRAWING

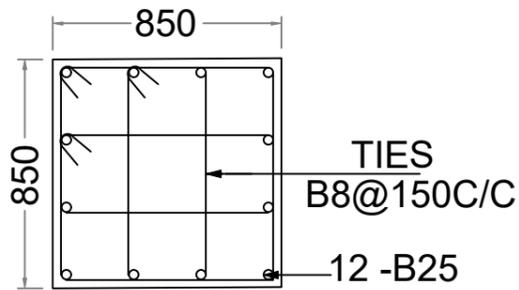
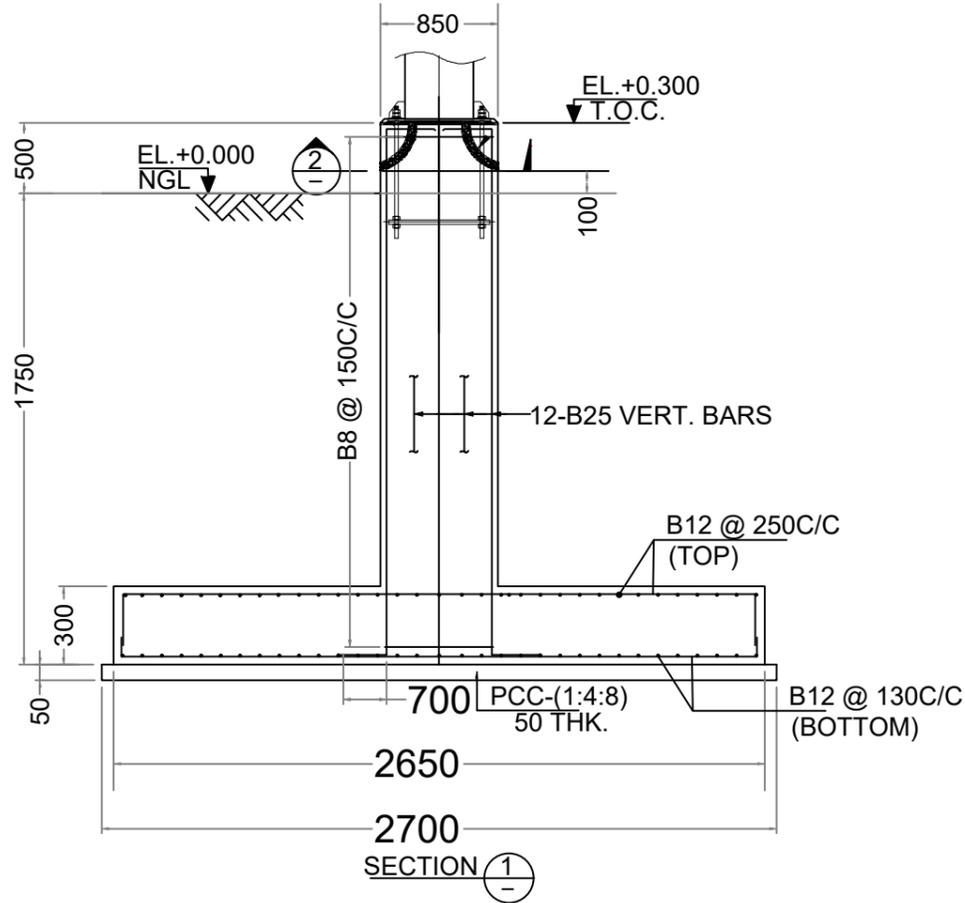
## Assumed parameters considered in in foundation design:

Allowable net safe bearing capacity (NSBC) > 10 T/m  
 Ground level water : Nil  
 Depth of foundation : 1.75 M  
 Material > 1600kg / m

Frustum angle > 10 deg  
 Density of back filling

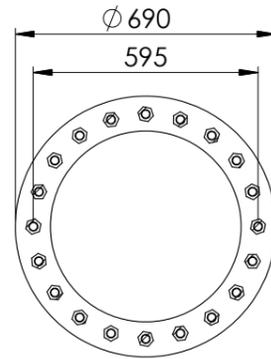
### Notes of foundation drawing:

- This is a generic foundation drawing.
- Before commencement of construction work using these designs, the owner/client/civil contractor shall carry out detailed soil investigation of every site. further, the soil investigation report shall be reviewed by a consultant and certification shall be obtained to ensure conformity between assumed parameters and soils report values before start construction.
- The foundation design is applicable only when the assumed SBC is available at (or) within the 1.75m depth from E.G.L.
- In the case of required SBC is not available at/ beyond 1.75m depth, this foundation design does not stand applicable.
- This foundation design shall not be used in case of organic silt, organic clay or peat layers are found upto depth "2b" from founding level during soil investigation (where b=pad/raft width).
- This foundation design shall not be adopted at sites where soil is subjected to ground improvement / liquefaction. in this case special foundation shall be done.
- In case ground water table is not found within the foundation depth. This foundation design not stand applicable.



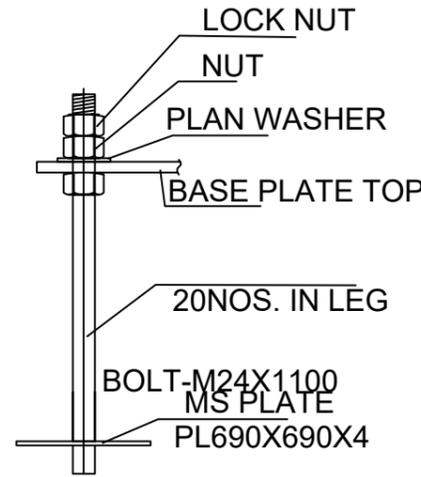
SECTION 2

COLUMN 850X850

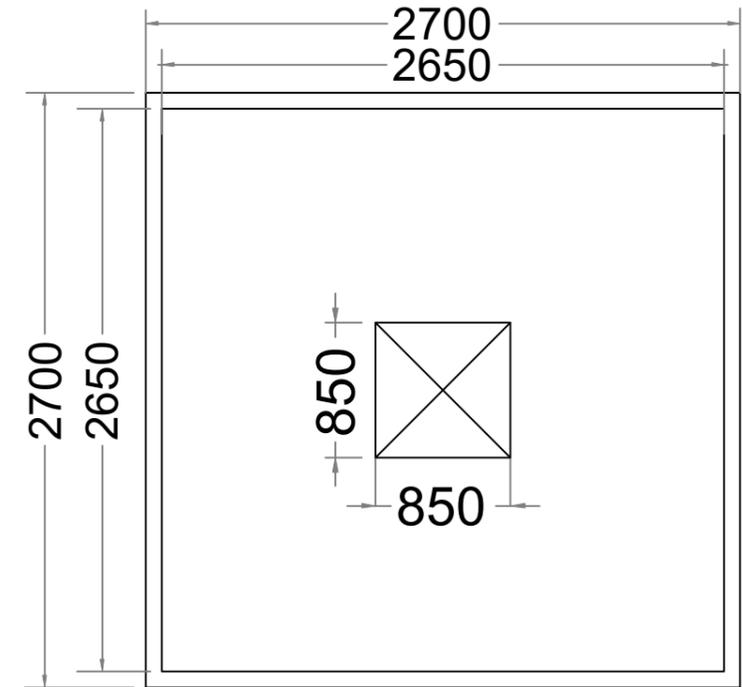


SECTION 1-1  
SCALE 1 : 15

BASE PLATE 690X690



ANCHOR BOLT



FOUNDATION

NOTE:- ALL DIMENSIONS ARE IN MM

NAME	SIGNATURE	DATE	CHANGES	NAME	SIGNATURE	DATE	NO.
DRAWN BY: PANKAJ	PANKAJ	02.12.2025					
DESIGNED BY: SUJITH	SUJITH	02.12.2025					
CHECKED BY: SUJITH	SUJITH	02.12.2025					

TOLERANCE:  
 X ±  
 X.X ±  
 X.XX ±  
 X.XXX ±  
 ANGLES ±

SCALE :

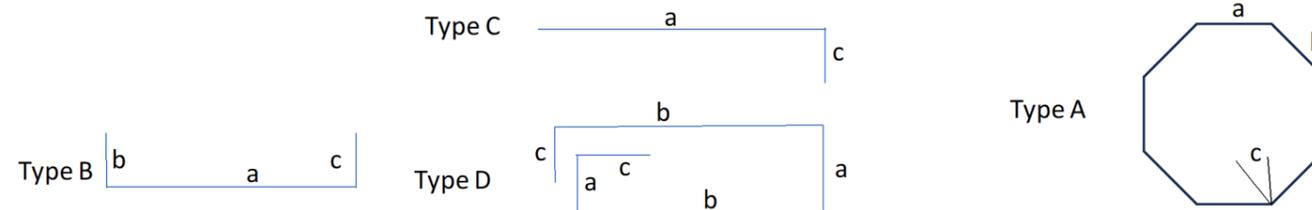
DRW. NO: ICGA10634-20M  
 REV: 00 SHEET NO: 1 OF 2 SIZE: A3

DRW. NAME: 20M SLIP JOINT MONOPOLE  
 PROJECT NAME: BHUTAN TELECOM LTD. 2026

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

## 20 M CIVIL FOUNDATION DRAWING

### ICGA10798 MONOPOLE-20M Bar Bending Schedule



FOUNDATION QUANTITY		
ITEM	POLE	UNITS
CONCRETE	3.52	CUM
PCC	0.36	CUM
STEEL	350.53	KG
EXCAVATION	13.61	CUM

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	B12	2550	150	150	2850	21	0.89	53.27
	Bottom	B	B12	2550	150	150	2850	40	0.89	101.46
Column	Main	C	B25	2150	0	700	2850	12	3.86	132.01
	Ties	D	B8	750	750	80	3160	15	0.40	18.96
		D	B8	750	275	80	2210	30	0.40	26.52
		A	B8	255	345	80	2560	5	0.40	5.12
<b>Total</b>										<b>350.53</b>

\* Chairs Shall be Provided whenever required

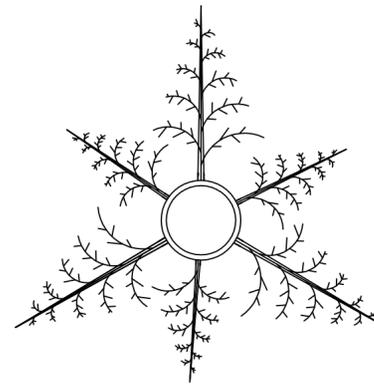
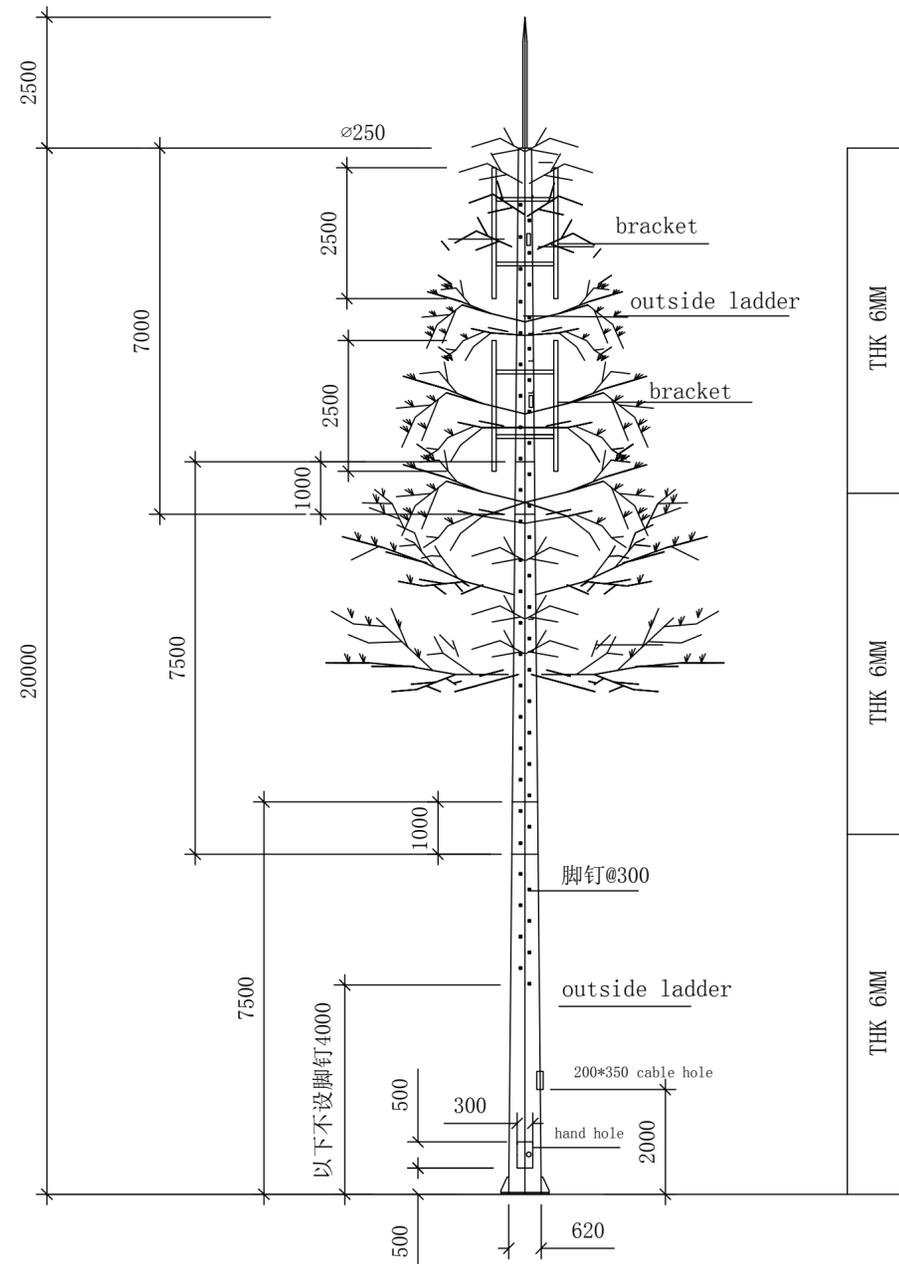
**Notes :**

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.

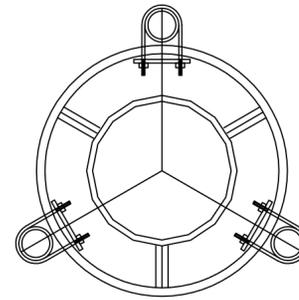
NOTE:-  
ALL DIMENSIONS ARE IN MM



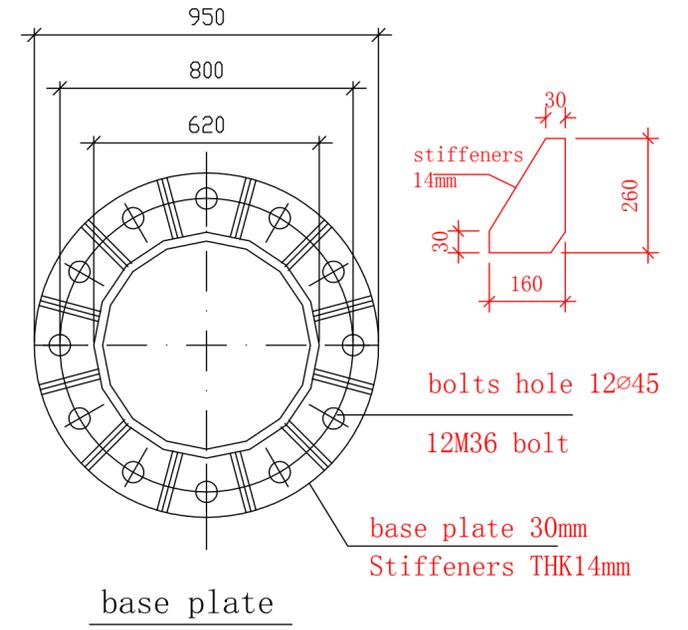
DRAWN BY:	PANKAJ	SIGNATURE	PANKAJ	DATE	02.12.2025	CHANGES	NAME	SIGNATURE	DATE	NO:	TOLERANCE: X ± X.X ± X.XX ± X.XXX ± ANGLES ±	SCALE : 	DRW. NO: <b>ICGA10634-20M</b>	DRW. NAME: 20M SLIP JOINT MONOPOLE	REV: 00	SHEET NO: 2 OF 2	SIZE: A3	PROJECT NAME: BHUTAN TELECOM LTD. 2026	<p>ICON POWER SOLUTIONS(P) LTD. 112-113, Sector-5, IMT Manesar, Gurugram, Haryana, INDIA-122050 TEL : +91 124 4120600/01/02</p>
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branch on top view  
10 layers: 3 nos per layer



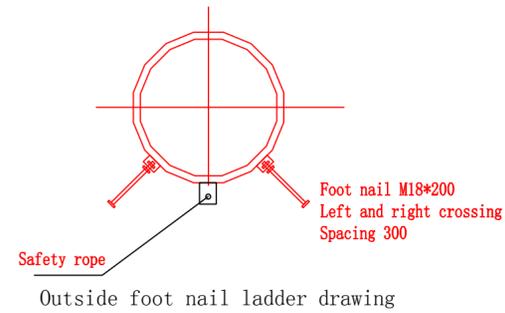
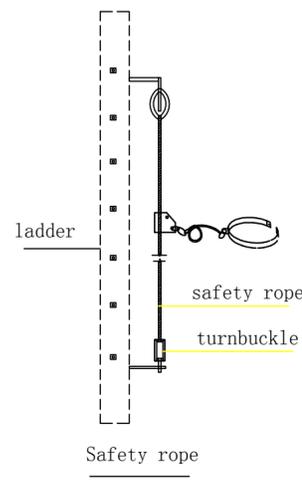
bracket on top view



base plate

Note:

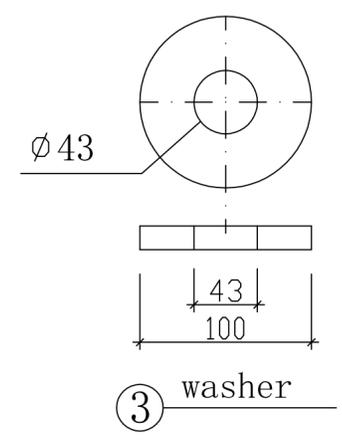
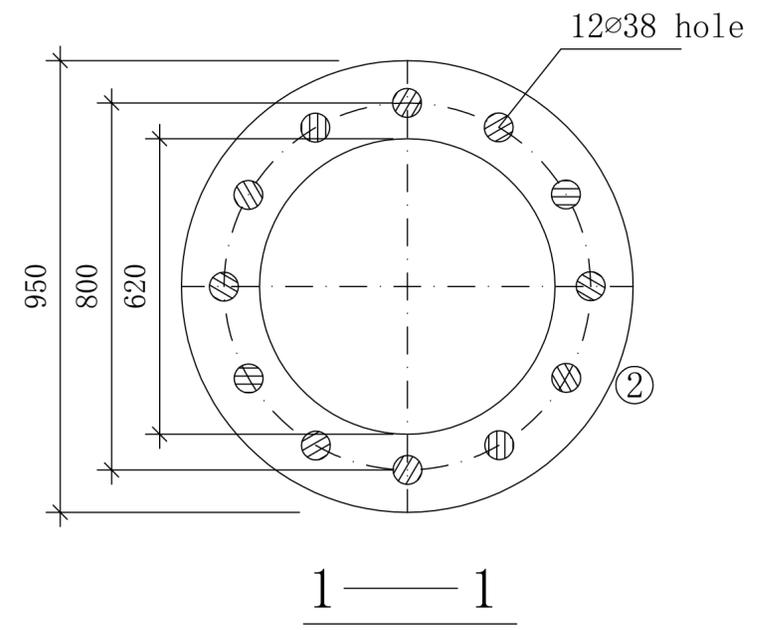
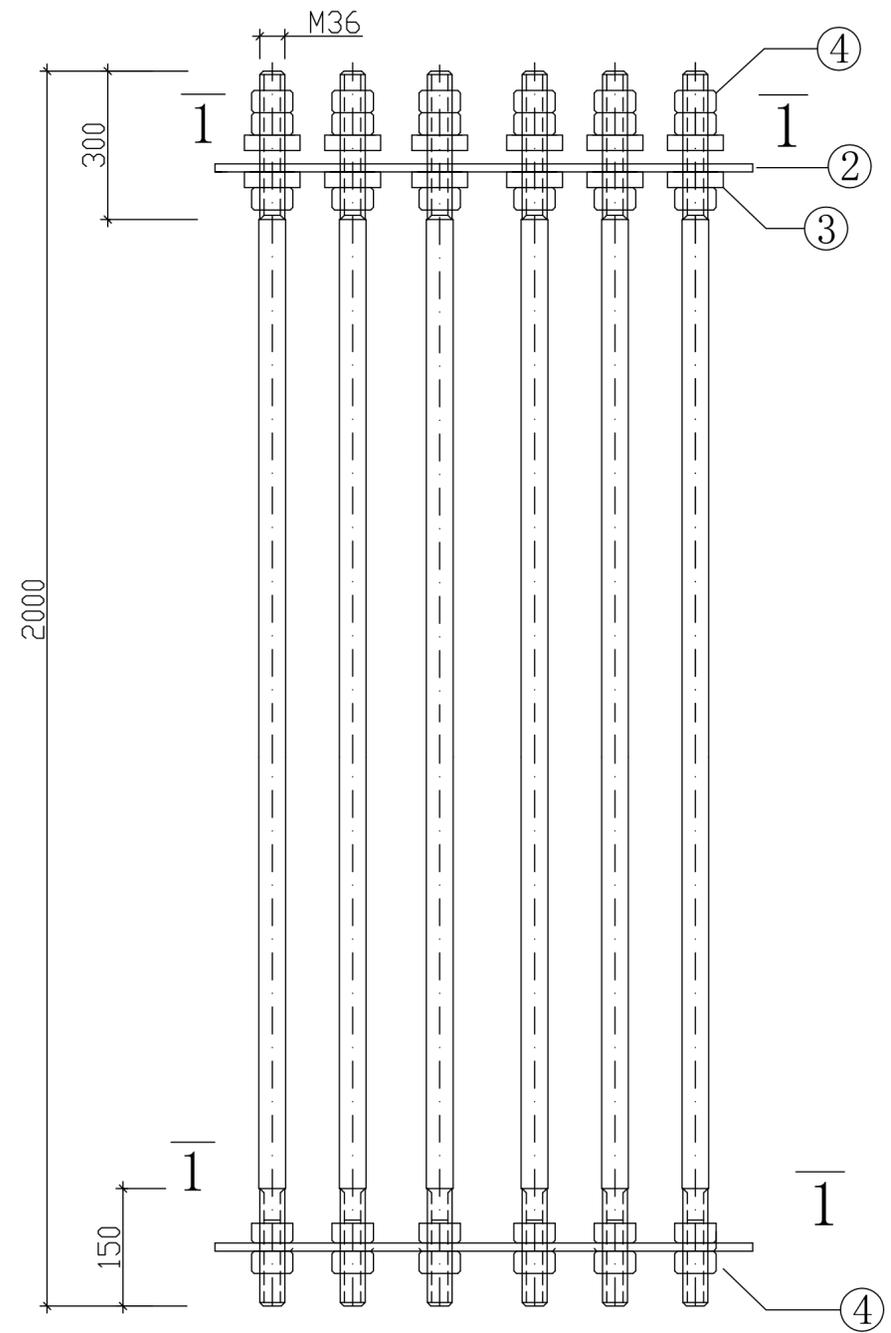
- 1 Dimensions are in millimetres, ,
- 2 The drawing is 20m camouflaged pine tree tower, main material:Q345B;Connection way: slip joint. A outside ladder.
- 3 Wind speed: 124km/h  
Seismic fortification intensity: 8°  
Vertical missing:  $\leq 1/1000$   
Antenna icing depth: 8MM  
Preference temperature:  $-35 \sim 50^{\circ}\text{C}$
- 4 Surface treatment: hot galvanized
- 5 Two layers antenna brackets, each layer has 3pcs. Cable is in tower from top to bottom. tower antenna load:no more than 500 kg.



			定核		20m Pine Tree Tower	
			校			
			日期	/	号	ZT-1

Material List

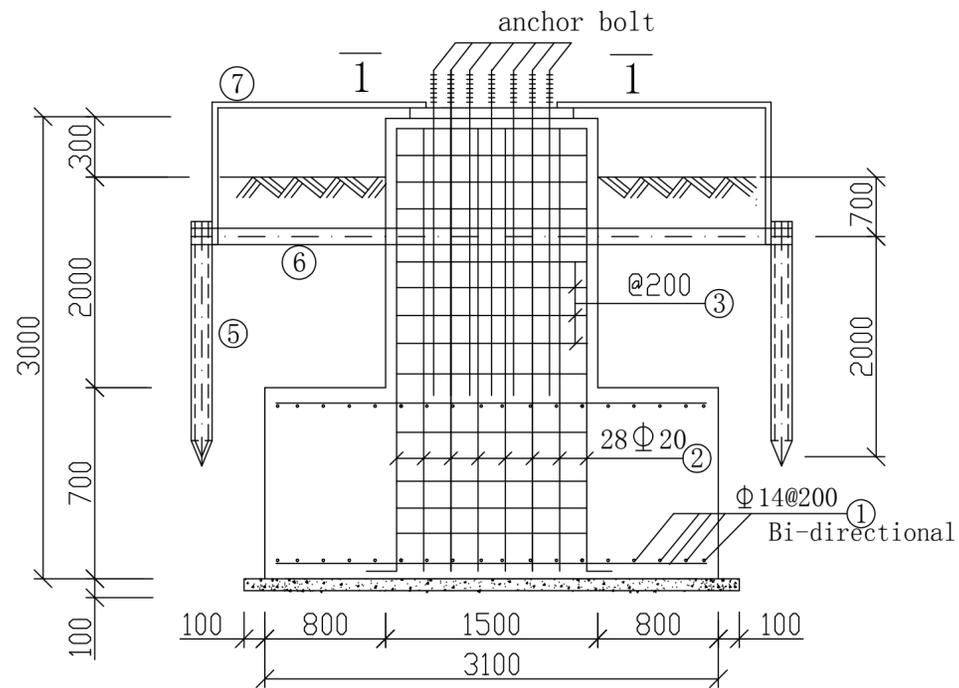
NO.	size	legend	length	bend	QTY	weight(Kg)		remark
						total	a total	
1	Φ 36	2000	2000		12	191.8	335	anchor bolt
2	-8x950		950		2	88.9		
3	-14x100		100		24	26.3		
4	M36母				60	28		



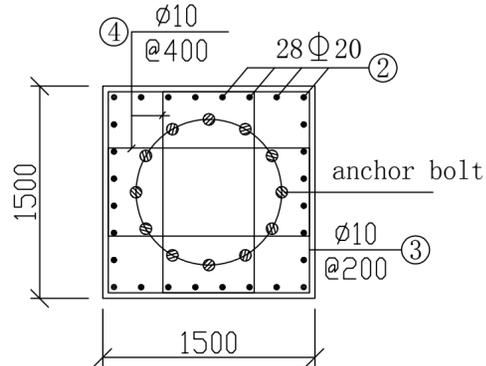
Note:  
 1 Material:Q235B  
 2 Deviation of location for anchor bolt:±3mm.  
 3 location of anchor bolt must be exact; Take measures to avoid deviation of location for anchor bolt effected by vibrating concrete.

Anchor bolt

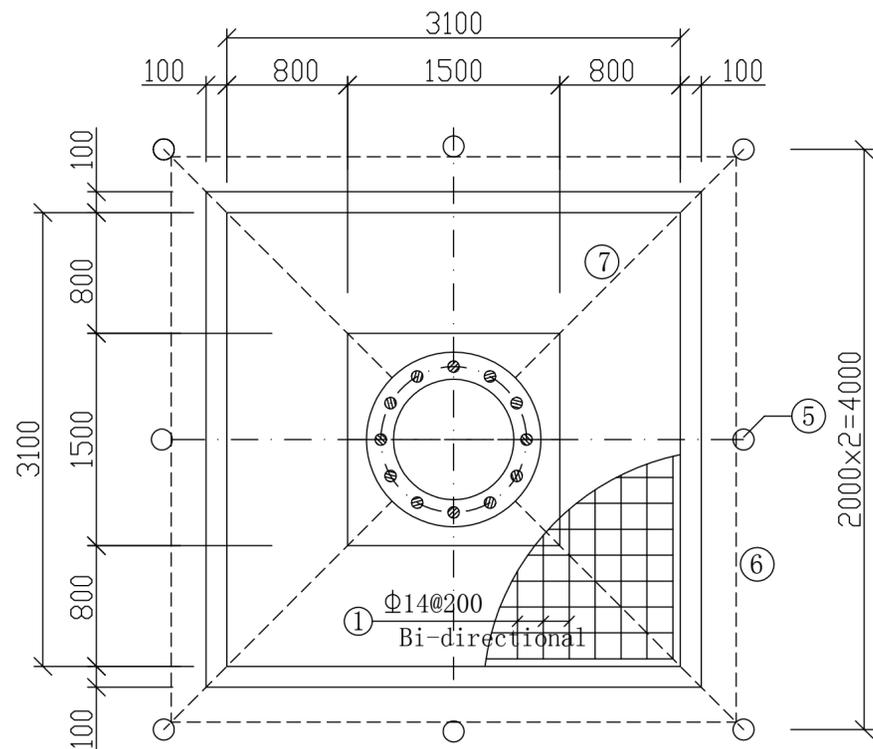
			定		
			核		
			校		
			U位 比例 /		
			日期		
			Anchor Bolt		
	号	GJ-1			



Foundation on front view



1—1



Foundation on top view

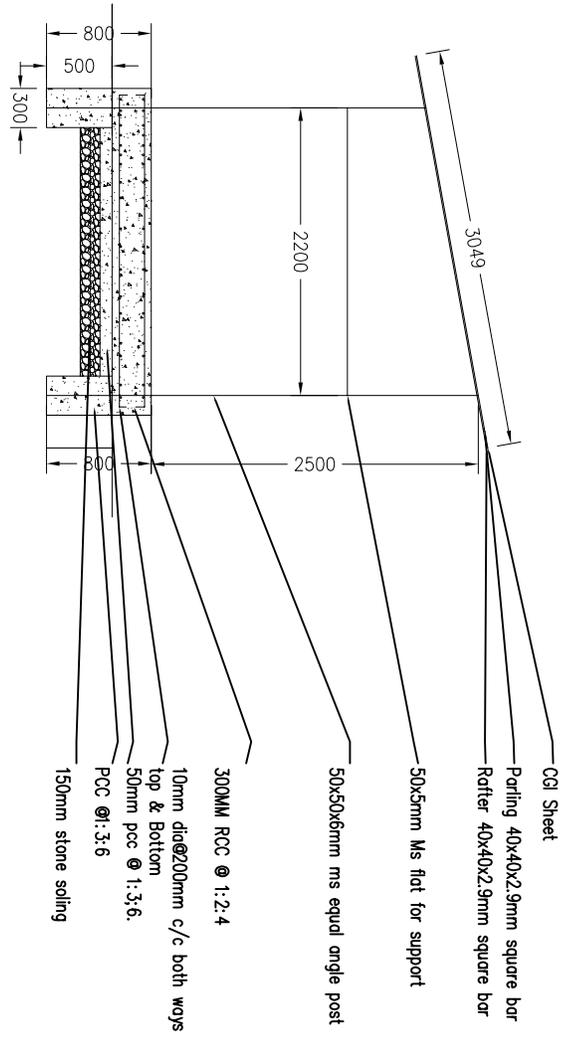
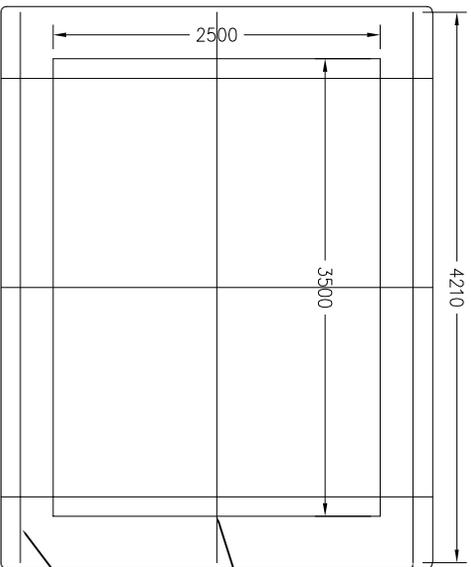
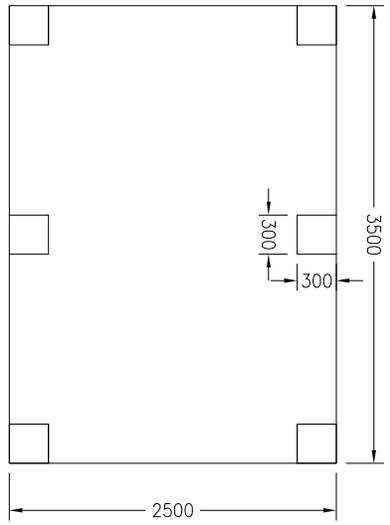
Material List								
NO.	size	legend	length	bend	QTY	weight(Kg)		remark
						total	a total	
1	Φ 14	3000	3000		64	241.9	599.4 foundation	
2	Φ 20	200 3100	3300	200	28	228.3		
3	Φ 10	1400 1400	5800	100	16	57.3		
4	Φ 10	320 1400	3640	100	32	71.9		
5	L50x5		2000		8	60.3	105.6 grounding	
6	-4x40		6000		4	30.2		
7	-4x40		3000		4	15.1		
In	steel material		705 kg					
total	concrete		C15;1.1M <sup>3</sup>		C30; 11.9 M <sup>3</sup>			

Note:

1. Base bearing capacity eigenvalue:  $f_k=130\text{KPa}$ ; if not match the fact, please design again.
2. Dig the foundation and check foundation ditch; if find unusual geology, please take measure or make author design.
3. Construction and inspection of foundation must be in accordance with the relevant provisions based on foundation drawing.
4. foundation construction dimensions deviation is  $\pm 5\text{mm}$ , template level deviation is 3mm
5. Foundation: C30 concrete; cushion: C10 concrete; rebar: steel I(Φ) or II(Φ); Reinforced protective layer: 50mm
6. After clear leveling of Foundation pit, and then poured cushion concrete; after harden, bind foundation rebar and place foundation frame, then pour concrete.
7. Foundation bolt to place accurate, binding and firm, prevent because of vibrating concrete makes it deviate from the design position.
8. Ground resistance:  $\leq 4\Omega$ . If not, please take measure.

			定			
			核			
			校			
			U位	比例	/	
			日期			
					号	JC-1
Foundation Drawing						

DG Shed and platform



Parling 40x40x2.9mm square bar

CGI Sheet

Parling 40x40x2.9mm square bar

Rafter 40x40x2.9mm square bar

50x5mm Ms flat for support

50x50x6mm mss equal angle post

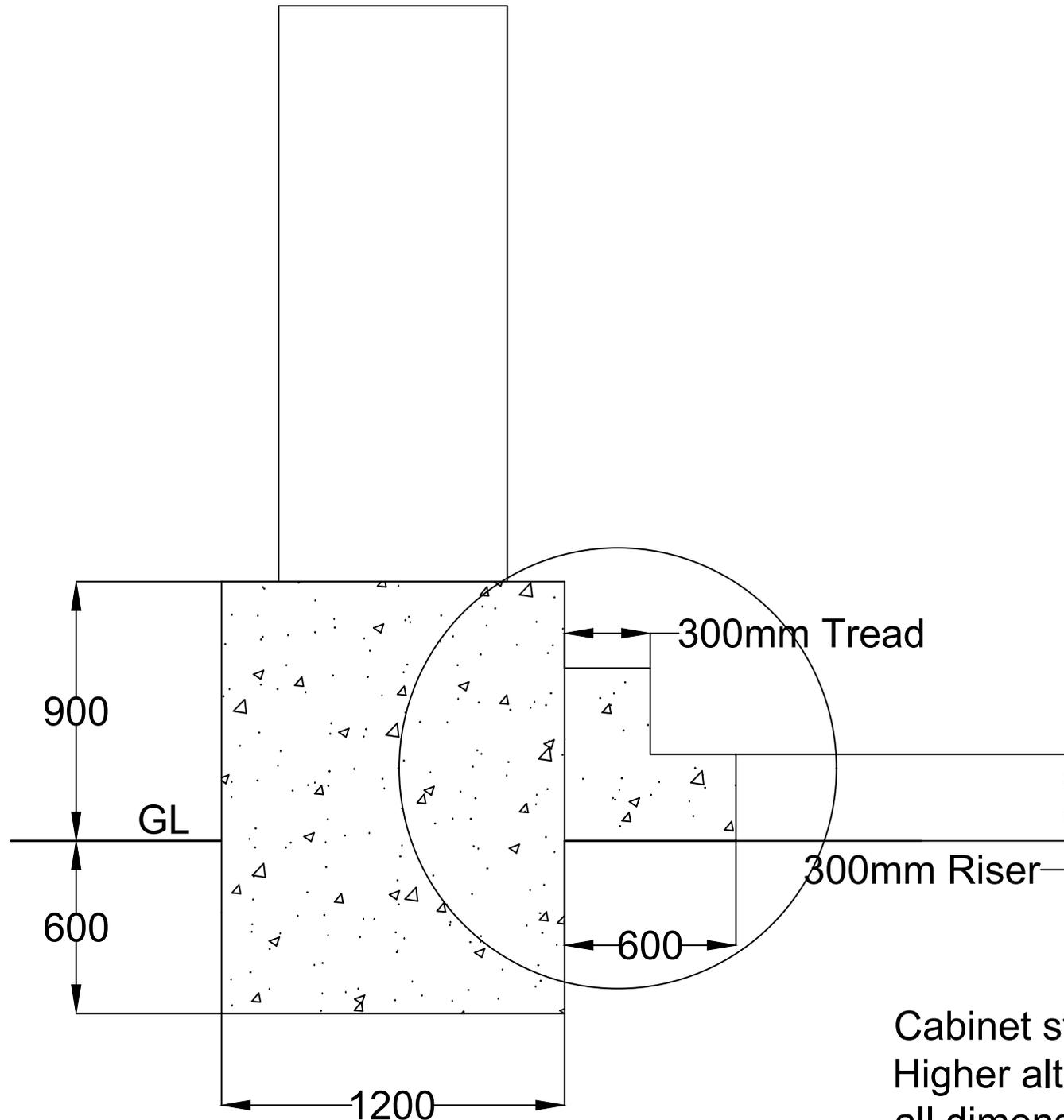
300MM RCC @ 1:2:4

10mm dia@200mm c/c both ways

50mm poc @ 1:3:6.

PCC @1:3:6

150mm stone soiling



Punakha sites

Cabinet stand for  
Higher altitude  
all dimension in mm