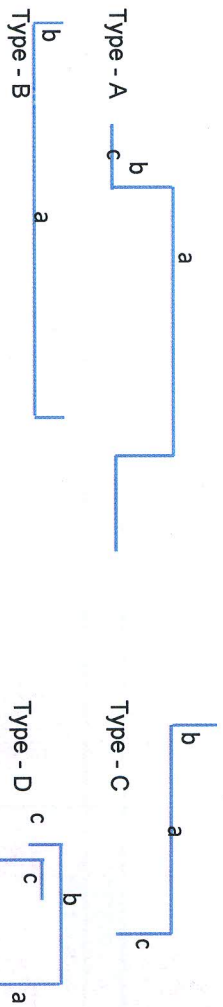


**Bar Bending Schedule of 30m high 3legged tower**



Cover -  
Slab 50 mm  
Column 40 mm  
Beam 25 mm

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	2250	150	-	2550	84	0.62	132
	Bottom	B	B10	2250	150	-	2550	108	0.62	170
Tie Beams	Top	B	B16	4150	300	-	4750	6	1.58	45
	Bottom	B	B16	4150	300	-	4750	6	1.58	45
	Strips	D	B8	250	250	80	1160	75	0.40	34
	Main	C	B20	3200	330	750	4280	24	2.47	254
Column	Ties	D	B8	342	342	80	1528	69	0.40	42
		D	B8	242	242	80	1128	69	0.40	31
Total (5% extra considered)										800

\* 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.

## Description & Values of Symbols

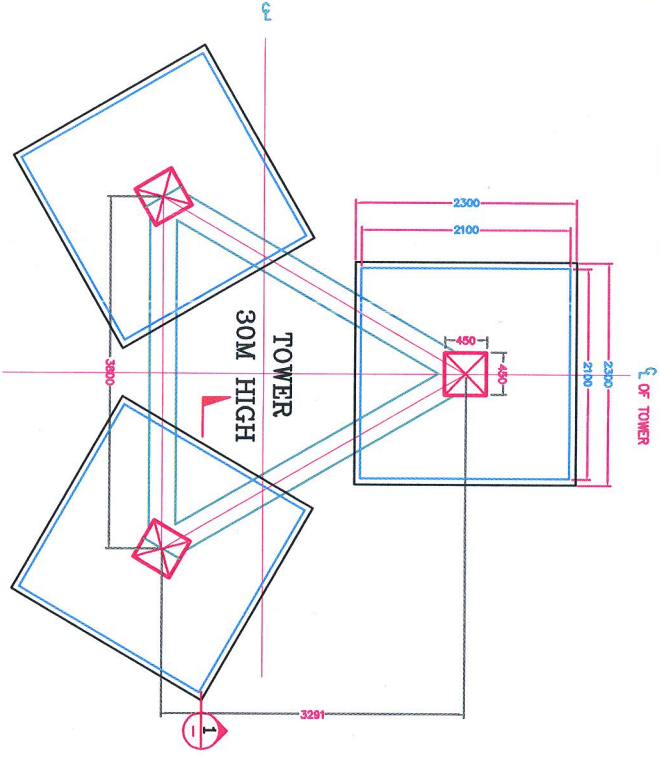
### Cement Concrete Sizes

Symbol	Description	Value	Units
th_pcc	Thickness of PCC	100	mm
s_pcc	Side of PCC below the slab	2550	mm
d_excavation	Depth of Excavation	3200	mm
d_foundation	Depth of Foundation below ground level	3100	mm
s_slab	Side/Dia of slab	2350	mm
th_slab	Thickness of Slab	350	mm
d_column_bg	Depth of Column below ground level(d_foundation_bg)	2650	mm
cc_columns	Center to Center distance of Tower Leg Columns	3800	mm
cc_tower	Tower Base Width, Centre to centre of tower legs	3800	mm
h_foundation	Height of Foundation above Ground Level	300	mm
w_p.beam	Width of Primary Beam	2	mm
d_p.beam	Depth of Primary Beam	16	mm
s_Column	Side of (square)Column, for tower, width or depth	450	mm
d_column_slab	Distance from end of Slab to center of Column	1175	mm

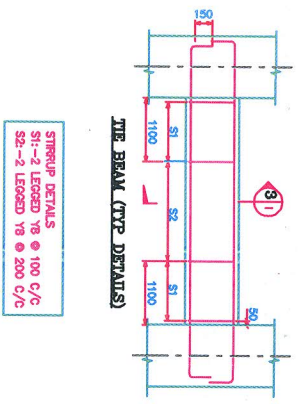
### Calculated Values

Toatl Volume of PCC	2.3	cu.m
Total Volume of RCC	8.5	cu.m
Total PCC + RCC	10.8	cu.m
Excavation, assuming vertical digging	61.1	cu.m

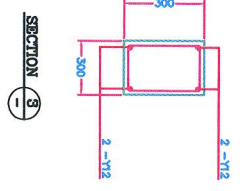




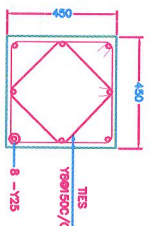
FOUNDATION KEY PLAN



STRIPUP DETAILS  
 S1 - 2 LAPPED 18 @ 100 C/C  
 S2 - 2 LAPPED 18 @ 200 C/C

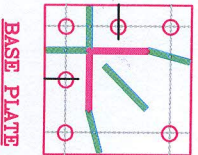


SECTION 3

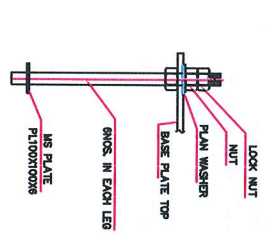


SECTION 2

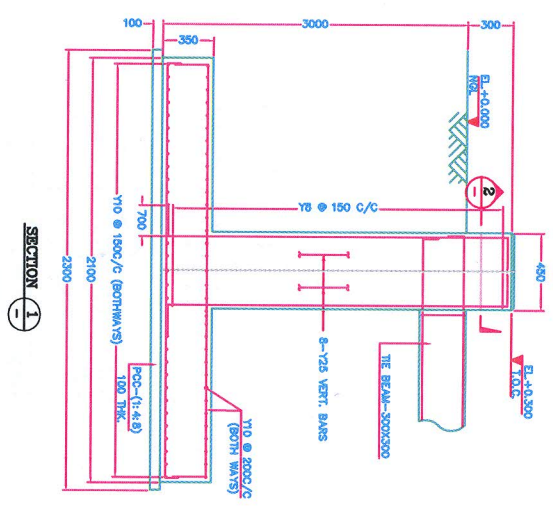
COLUMN 450X450



BASE PLATE



ANCHOR BOLT



SECTION 1

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2. USE M20 GRADE CONCRETE AND R445 GRADE FOR STEEL.
3. CLEAN COVERS TO MAIN REINFORCEMENT:-  
 (a) 25MM FOR BEAMS  
 (b) 30MM FOR COLUMNS  
 (c) 50MM AT ENDS
4. PRIOR TO AND DURING CONCRETE ALL BOLTS SHALL BE SECURELY AND PROPERLY POSITIONED BY TEMPORARILY USING THE DESIGNER'S/CONTRACTOR'S SHALL CARRY OUT DETAILLED SOIL INVESTIGATION OF EVERY SITE.
5. THIS FOUNDATION DESIGN SHALL NOT BE USED IN CASE HEAVY SOIL ARE FOUND AT ANY DEPTH DURING SOIL INVESTIGATION.
6. SPACING OF BARS SHALL NOT BE MORE THAN 50% AT ANY LOCATION.
7. CONCRETE SHALL BE MECHANICALLY MIXED & VIBRATED.
8. PROPER CURING OF CONCRETE SHALL BE DONE.
9. REMOVAL OF FORMS SHALL BE AS PER IS 2502.
10. ANY DISCREPANCY SHOULD BE BROUGHT TO THE CONSULTANT'S ATTENTION.

GENERAL DETAILS

SNo	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	55.6
POC-(1+4.8)	CUM	2.1
POC-420	CUM	7.5
STEEL-F415	KG	800

CHAIRS SHALL BE PROVIDED WHENEVER REQUIRED

BAR BENDING SCHEDULE



REVISION NOTES

REV. NO.	DESCRIPTION	DATE	SIGN.
DRAWN	CHECKED	APPROVED	SCALE
sketches	MOHT GUPA	MOHT GUPA	1:1-01-2021
DATE			IMS

BHUTAN TELECOM LTD.

ICON POWER SOLUTIONS PVT. LTD.

THIMPU, BHUTAN

GENERIC ISOLATED FOUNDATION DESIGN

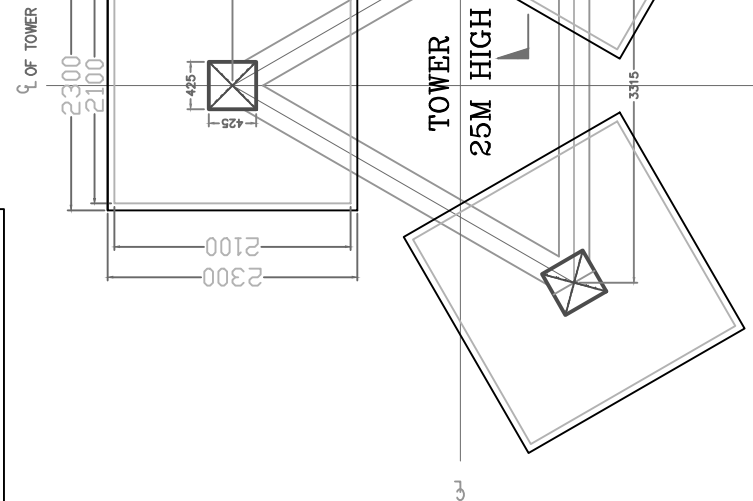
BHUTAN

TITLE : FOUNDATION DETAILS FOR 30M HIGH TRIANGULAR TOWER

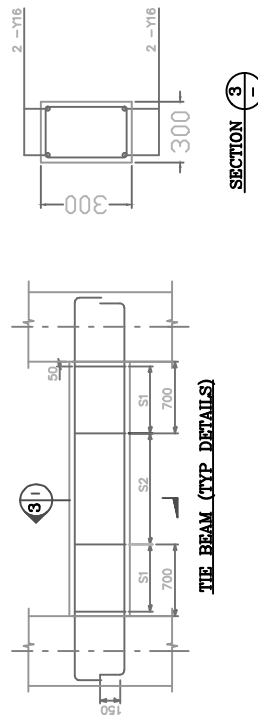
SNG : 10 T/SQM

DRAWING No. SH. NO. REV.

AGD-319

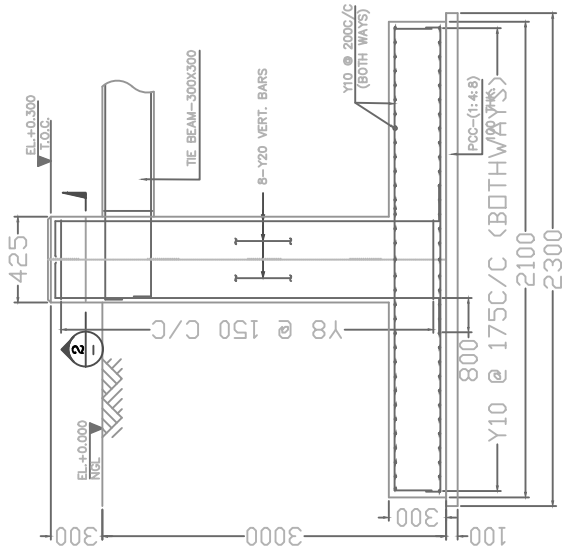


FOUNDATION KEY PLAN

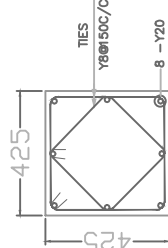


TIE BEAM (TYP DETAILS)

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

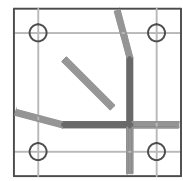


SECTION 1-1

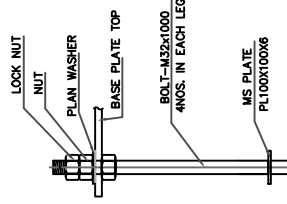


SECTION 2-2

COLUMN 425X425



BASE PLATE



ANCHOR BOLT

- NOTES**
1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
  2. USE M20 GRADE CONCRETE AND F<sub>y</sub> 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-F415	KG	700

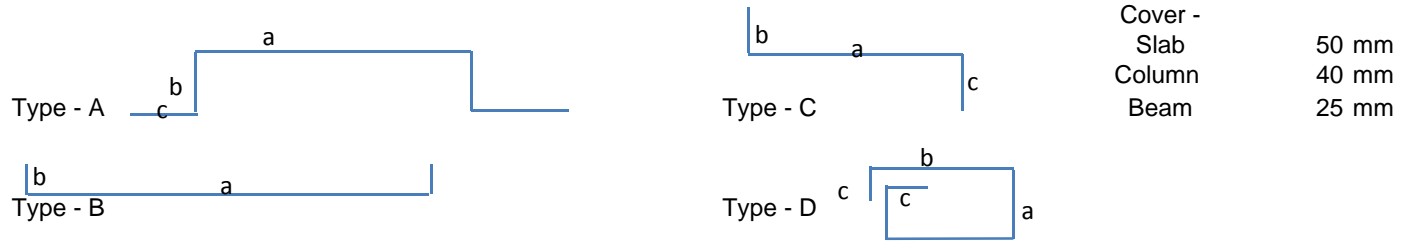
CHAIRS SHALL BE PROVIDED WHEREVER REQUIRED

**REVISION NOTES**

REV. NO.	DESCRIPTION	DATE	SIGN.
DRAWN	CHECKED	APPROVED	SCALE
Bhutan Telecom	Bhutan Telecom	Bhutan Telecom	20-11-2022
DATE	DATE	DATE	DATE
20-11-2022	20-11-2022	20-11-2022	20-11-2022

CLIENT: BHUTAN TELECOM LTD.  
 BHUTAN  
 BHUTAN TELECOM LTD.  
 BHUTAN  
 PROJECT: GENERIC ISOLATED FOUNDATION DESIGN  
 BHUTAN  
 TITLE: FOUNDATION DETAILS FOR 25M HIGH TRIANGULAR TOWER  
 SBC : 10 T/SQM  
 DRAWING No. SH. NO. REV.  
 BT-2023-03

### Bar Bending Schedule of 25m high 3legged tower



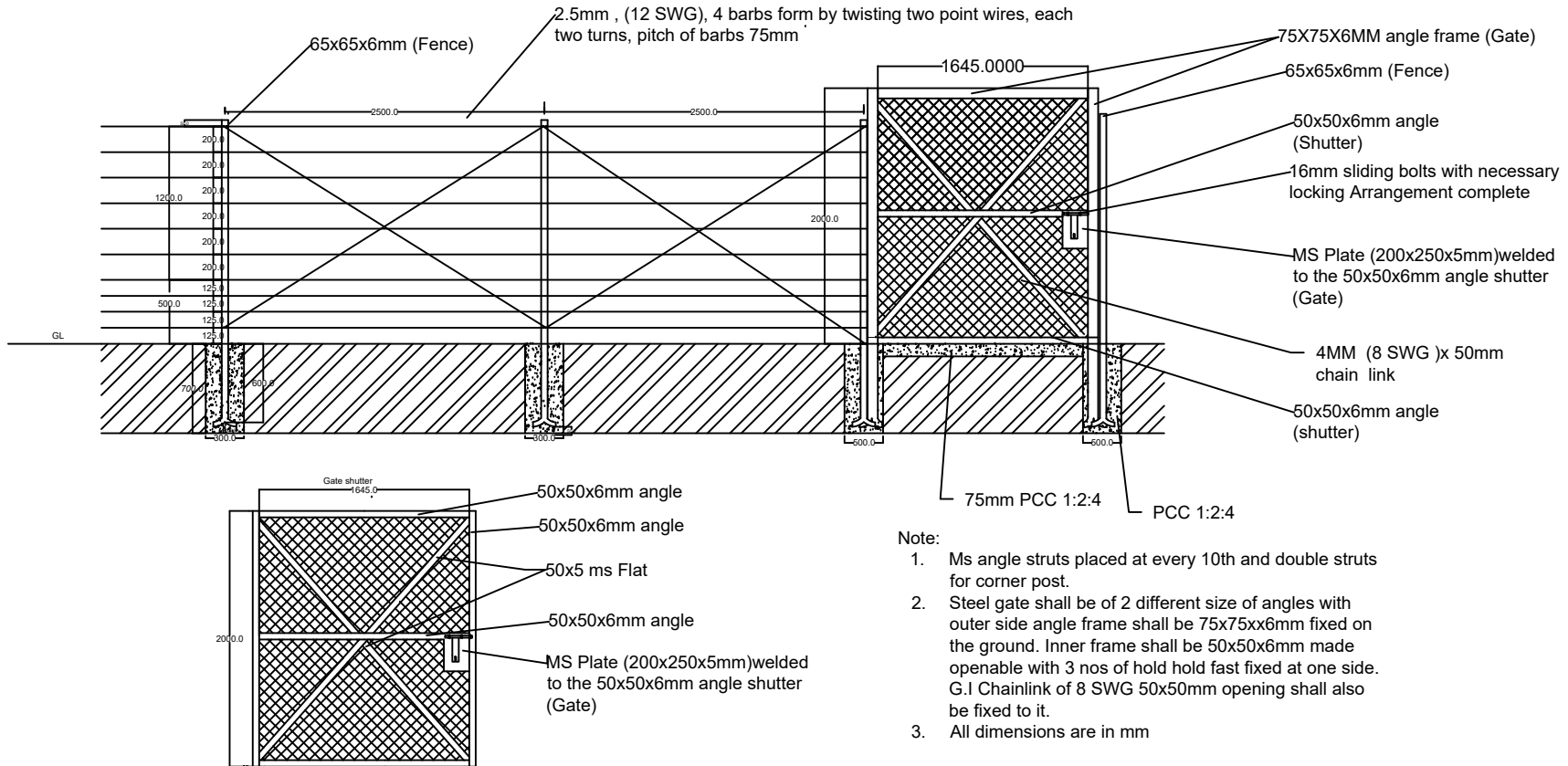
Item	Position	Type	Dia. Of Rebar (mm)	Size	Size	Size	Length (mm)	Qty in Nos both ways or total	Unit wt (kg/m)	Total Weight of (kg)
				a (mm)	b (mm)	c (mm)				
Raft Slab	Top	B	B10	2000	150	-	2300	66	0.62	94
	Bottom	B	B10	2000	150	-	2300	78	0.62	111
Tie Beams	Top	B	B16	3640	300	-	4240	6	1.58	40
	Bottom	B	B16	3640	300	-	4240	6	1.58	40
	Strips	D	B8	250	250	80	1160	63	0.40	29
Column	Main	C	B20	3200	305	800	4305	24	2.47	255
	Ties	D	B8	317	317	80	1428	69	0.40	39
		D	B8	224	224	80	1057	69	0.40	29
								Total (5% extra considered)		700

\* 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.

# BARBED WIRE FENCING AND GATE DRAWING

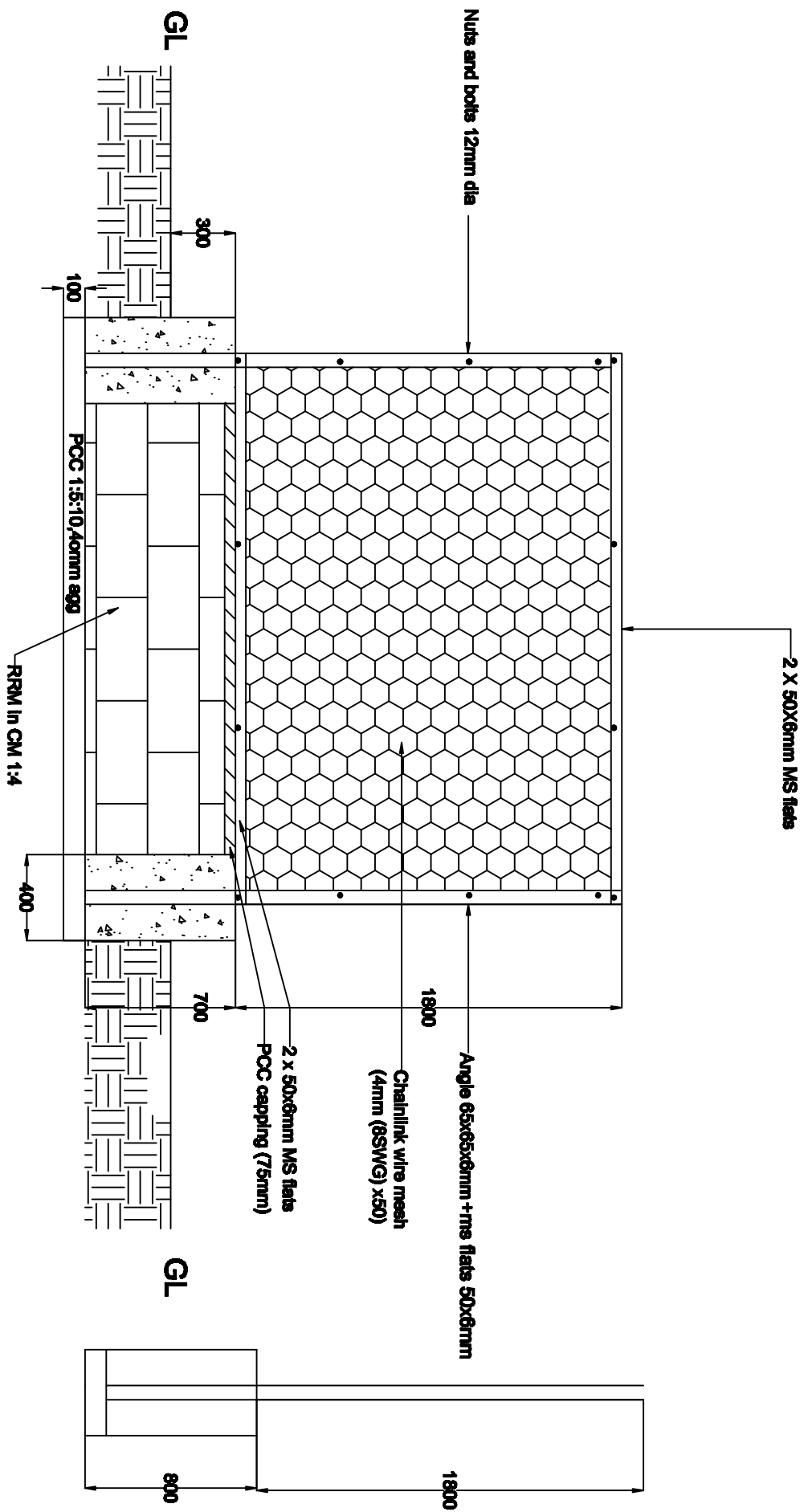


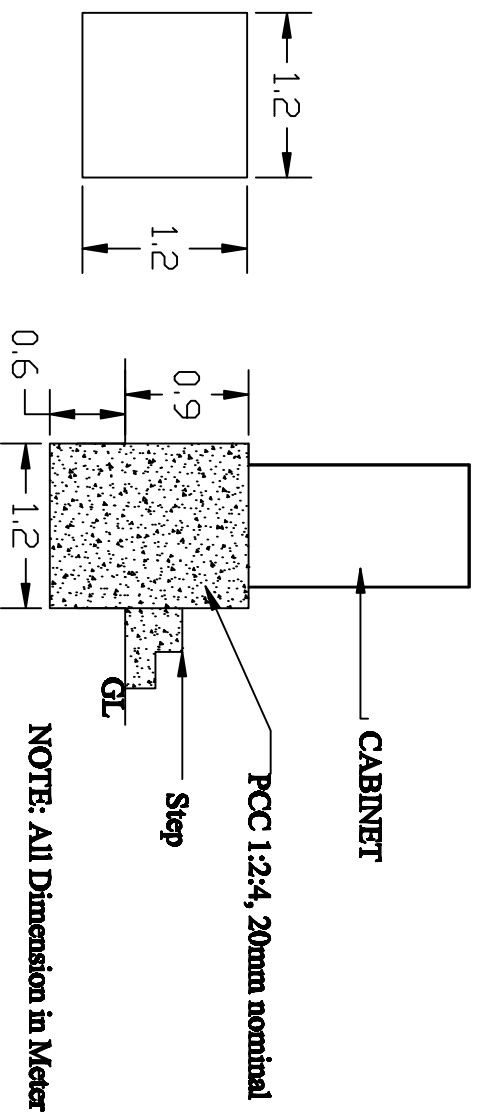
Title : Barbed wire fencing

BHUTAN TELECOM LIMITED

Checked by:

Approved by:





**CABINET STAND FOR HIGH ALTITUDE**