

STRUCTURE DESIGN INSTRUCTION

1. SUMMARIZE

1.1 Foundation disign according to following files:

(1) Extreme load for foundation design:

		MX	MY	MAX	MY	MX	MY	PX	PY	PXY	PX	PY	ratio
	Load case	kNm	kNm	kNm	kNm	kNm	kNm	kN	kN	kN	kN	kN	factor
Max	6.1g	18720	11940	22204	257.9	286.3	-373.3	470.4	-1042.1	1.35			
Min	-6.1g	-14901	2504.6	15110	-390.3	77.9	357.5	-1012.9	1.35				
Max	6.1g	15456	27724	31218	-80.0	659.1	-344.9	743.9	-1060.4	1.35			
Min	-6.1g	-3431.6	-4315.7	5513.7	-54.9	-81.5	83.2	116.5	-1017.2	1.35			
Max	6.1g	15456	27724	31218	-80.0	659.1	-344.9	743.9	-1060.4	1.35			
Min	-6.1g	-12.8	-6.8	14.5	-3.2	10.4	5.7	11.8	-1020.9	1.1			

(2) Geotechnical report of every site.

(3) 《Code for design of building foundation 》GB50007-2002

(4) 《Code for design of concrete structure 》GB50010-2002

(5) 《Code for design of high-rising structure 》GB 50135-2006

(6) Other drawing from GOLDWIND.

2. structure design summarize

structure design working life	safly classes of structure	Classifications of seismic fortification	fortification intensity
25 year	class II	category C	6

Design basic acceleration of ground motion	dynamic factor
0.05g	1.35

2. SUBGRADE AND FOUNDATION

2.1 Subgrade treat and foundation design was performed according to geotechnical investigation of the project.

2.2 Choosing natural subgrade,and subsoil bearing capacity is required over 300 KPa.

3. MATERIAL

3.1 Concrete strength grade : underlayer : C15 , principal part : C30 ;

Requirement of concrete material as following table:

Max. water-cement ratio	Min.cement consumption amount (kg/m³)	Max.chlorion content (%)	Max.alkali content (kg/m³)
0.65	275	0.2	3.0

3.2 Characteristic values of strength for ordinary steel bars(N/mm) shall be adapted from table below from code GB 1499. The guarantee rate for characteristic values of strength for steel bar shall not be less than 95%.

types	symbols	f _{yk}
Hot rolled steel bar	HRB335 HRB400	Φ Φ 400

4. REINFORCED CONCRETE STRUCTURE

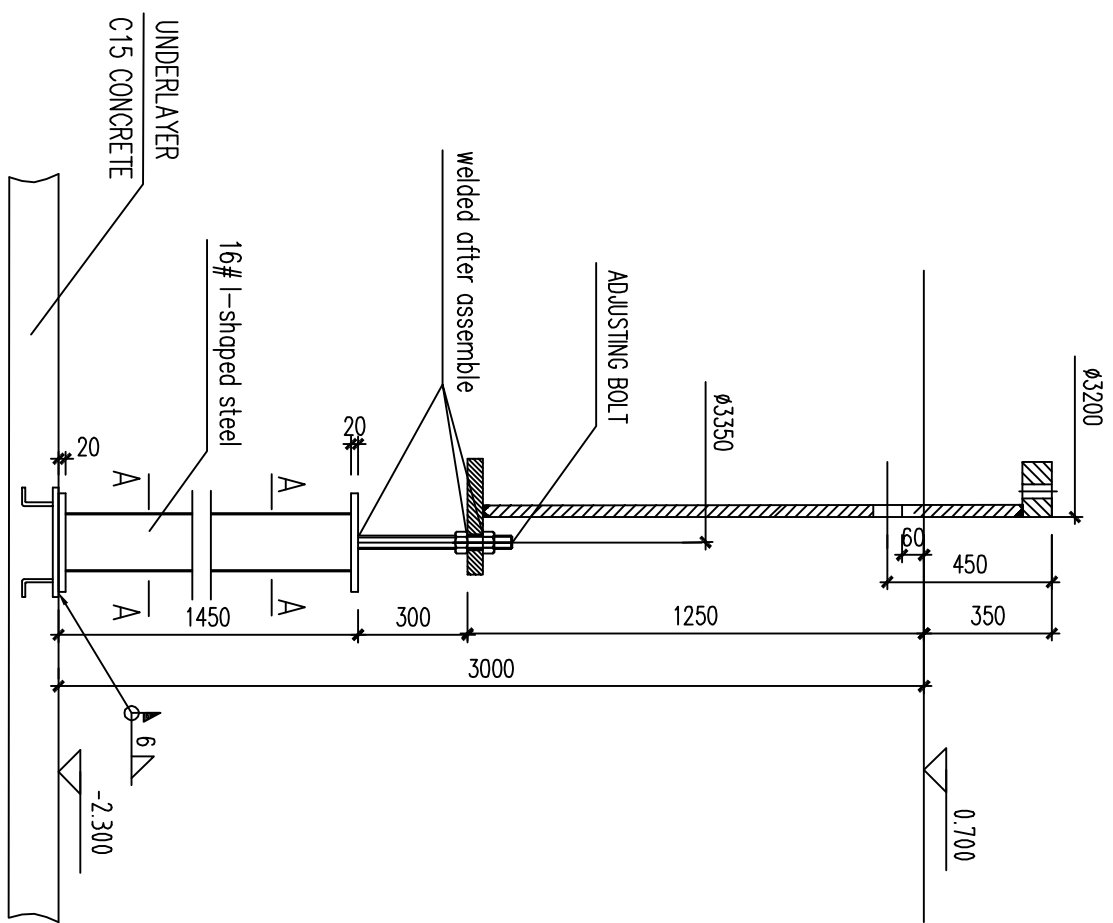
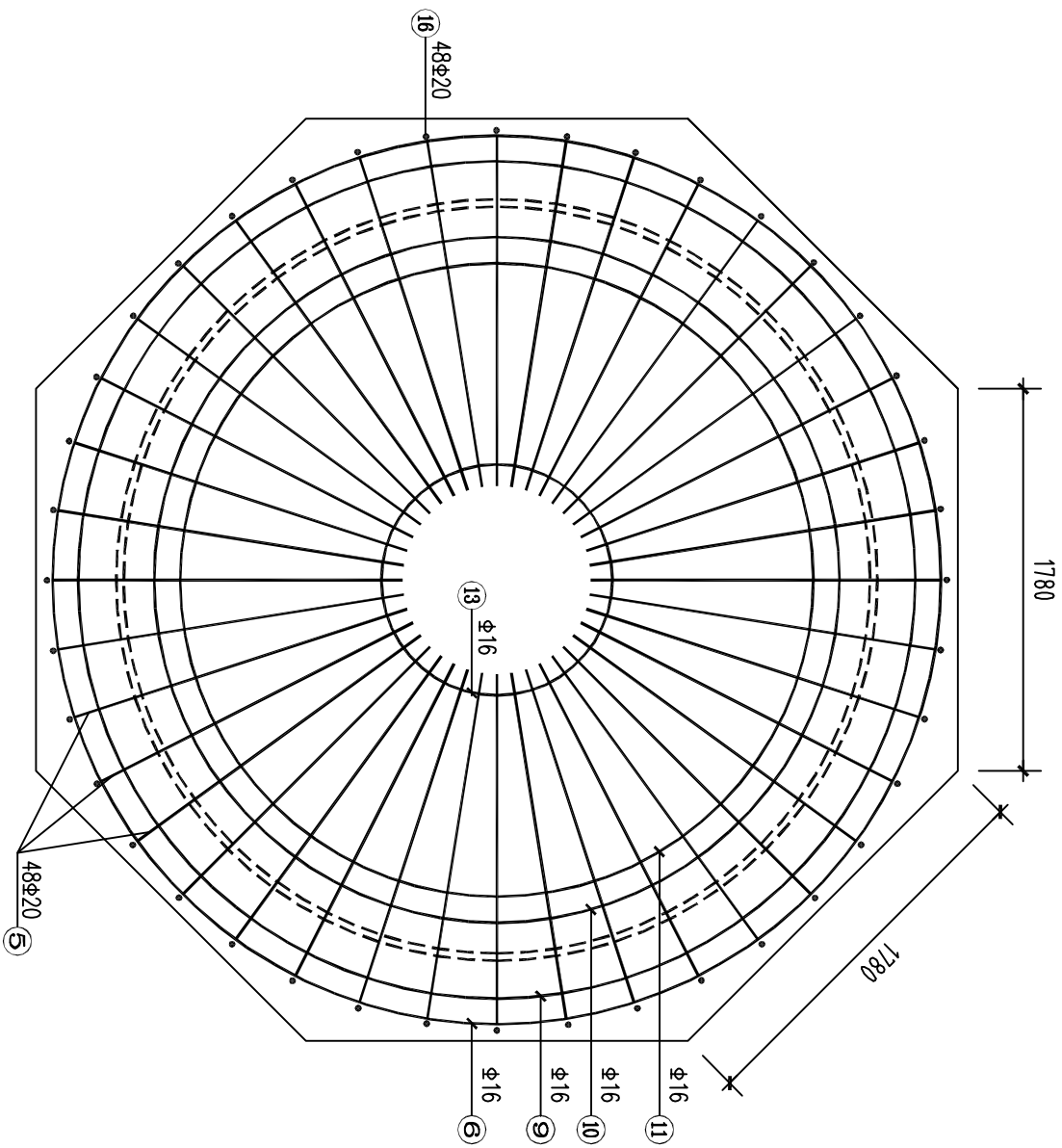
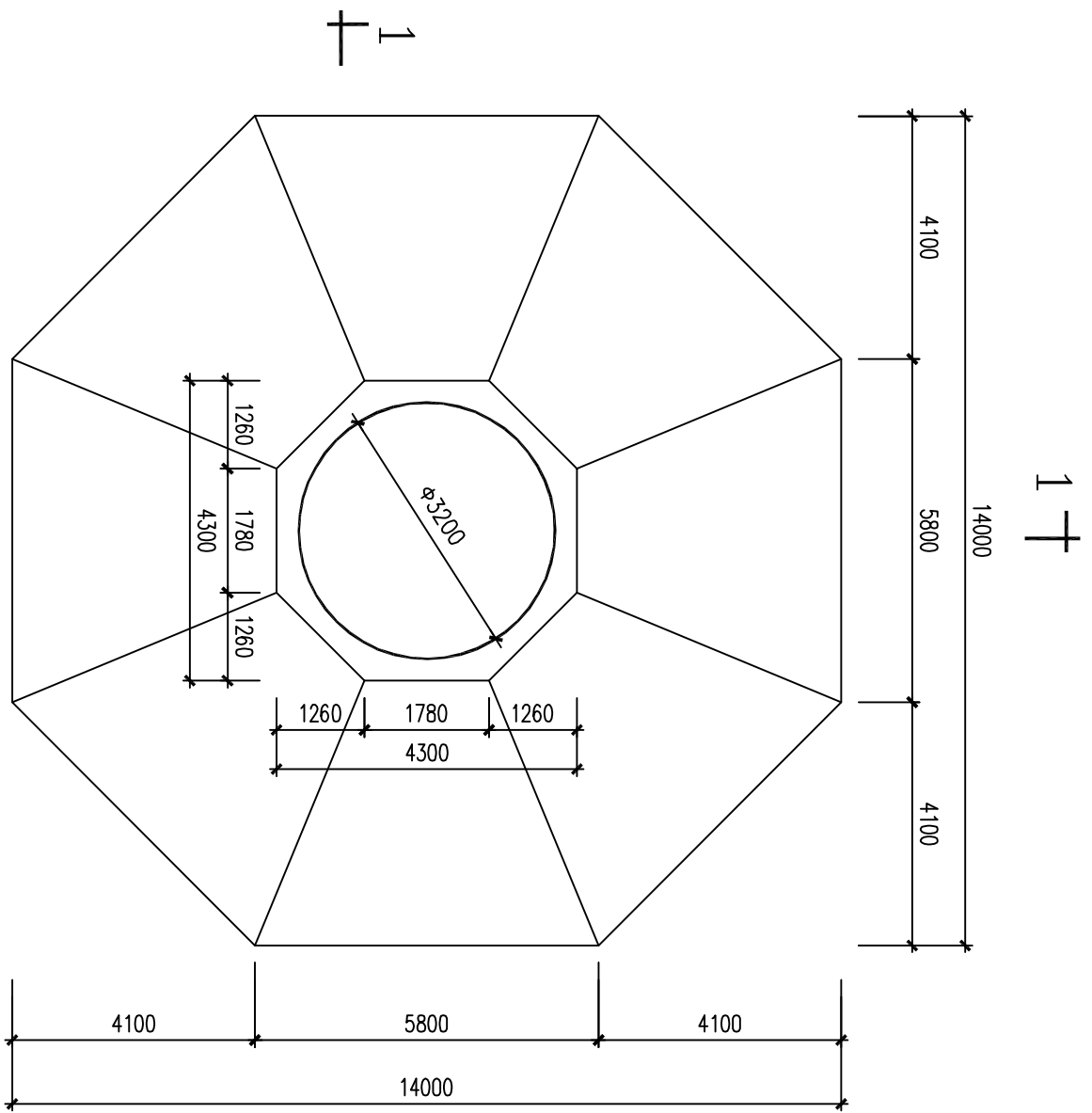
4.1 Reinforced concrete cover of foundation is 50mm.

4.2 Connection of steel reinforcement,when the diameter of steel reinforcement is d≥20mm ,mechanical connection should be adopted.

when binding lapped splice joint was used, the lenth of lapped splice and the percentage of area for lapped splice joint in steel reinforcement should obey corresponding requirement of 《Code for acceptance of constructinal quility of concrete structures 》GB 50204-2002.

4.3 The check and accept of steel reinforcement should be performed by code GB50204 after arrangement and binding.

NAME	GOLDWIND TYPE S50/750 TOWER 50m IEC 11A
STRUCTURE DESIGN INSTRUCTION	
EDITION	1
CATEGORY	CONCRETE STRUCTURE
NO.	01

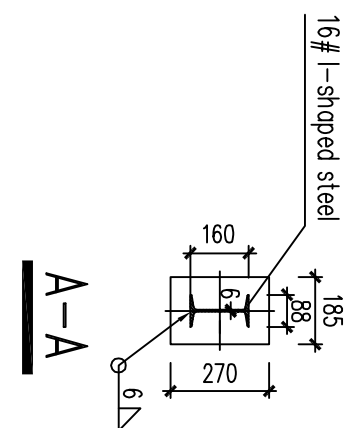
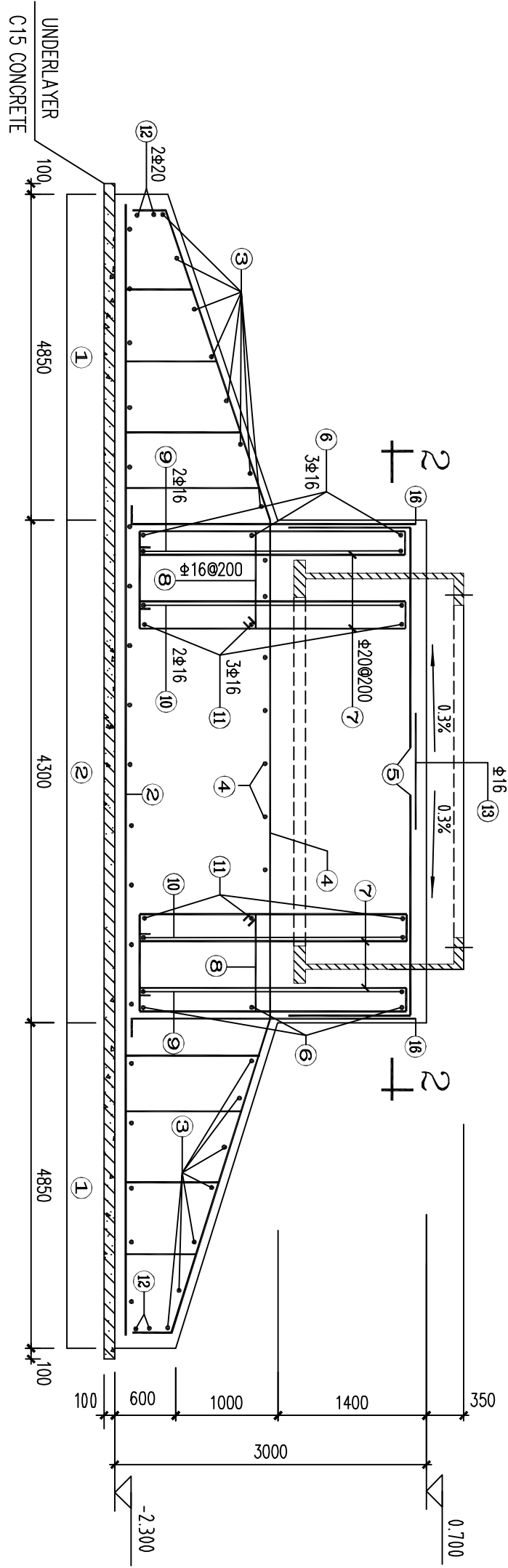


TOP VIEW OF FOUNDATION

2-2 PROFILE

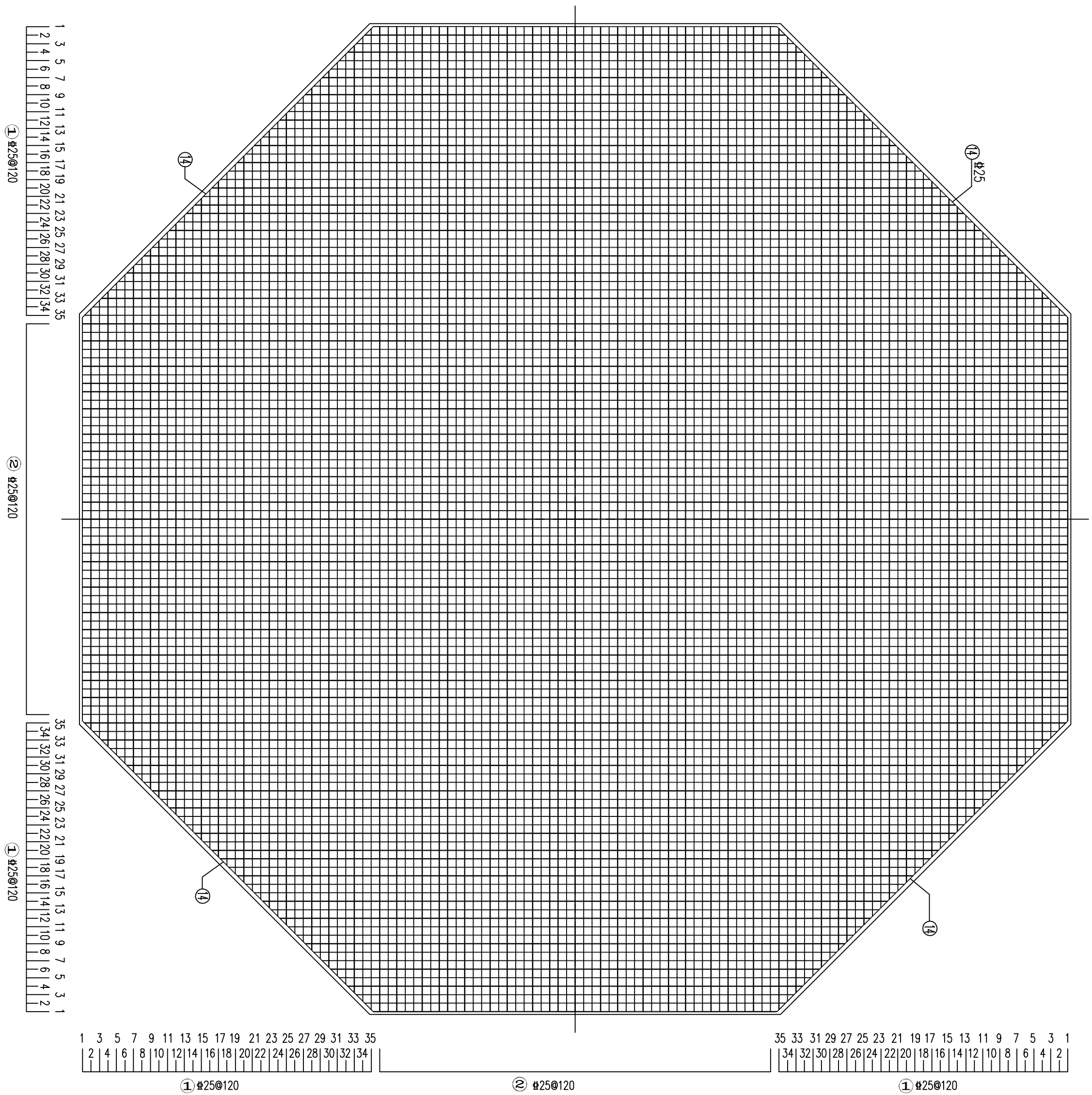
THE VIEW OF SUPPORTER

NOTE :
1. There are 3 supporter under the foundation ring,connect each other if it is not steady enough.



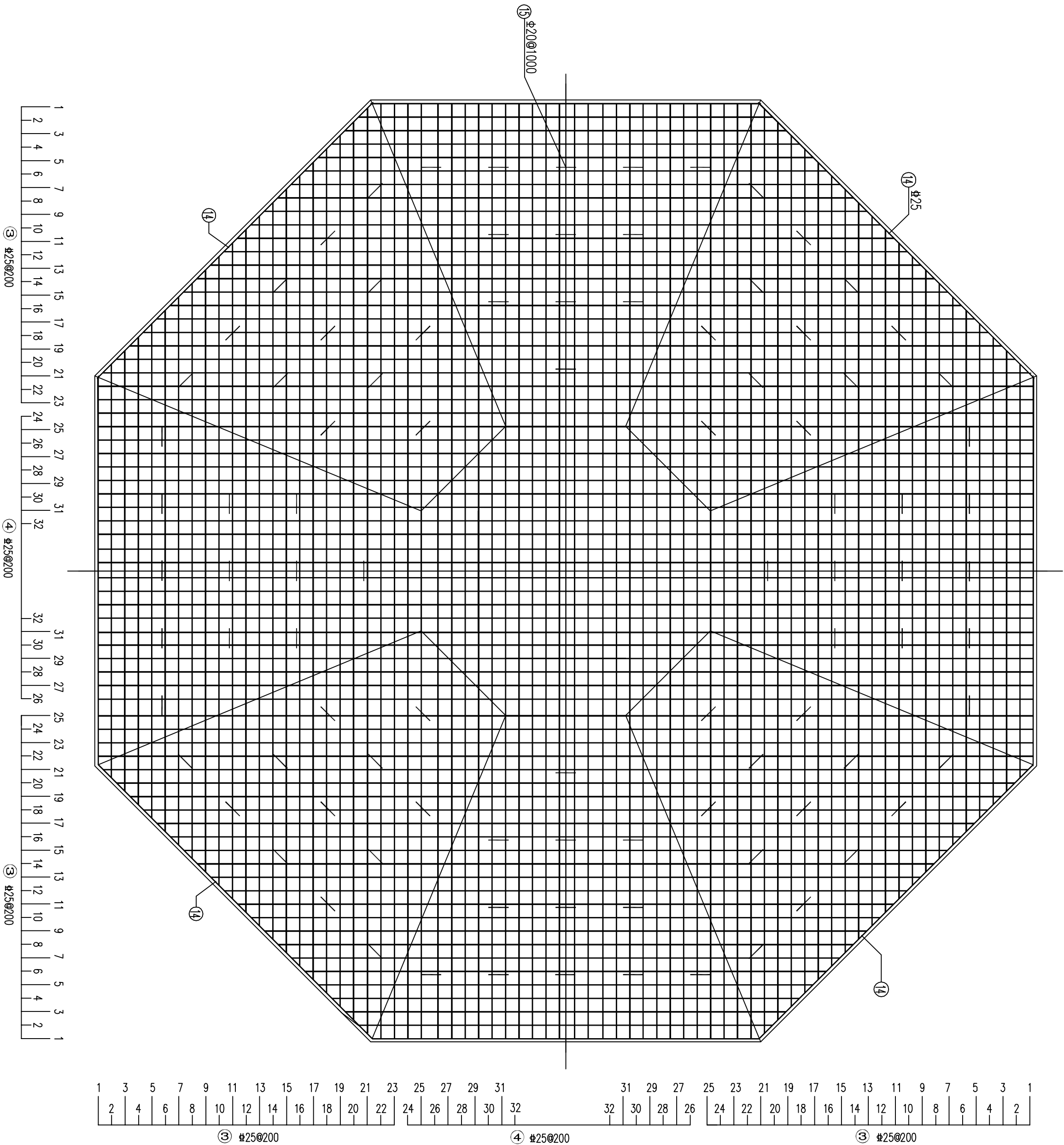
1-1 PROFILE

NAME	GOLDWIND TYPE S50/750 TOWER 50m IEC 11A		
STRUCTURE DESIGN INSTRUCTION			
EDITION	1		
CATEGORY REINFORCEMENT ARRANGEMENT			
NO.	02		



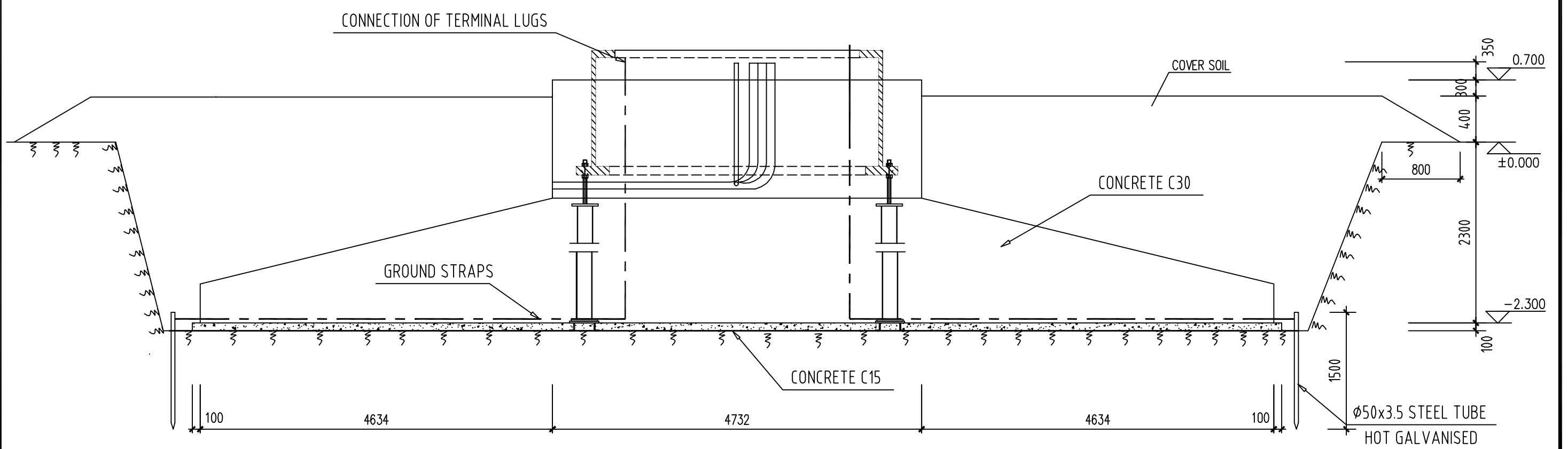
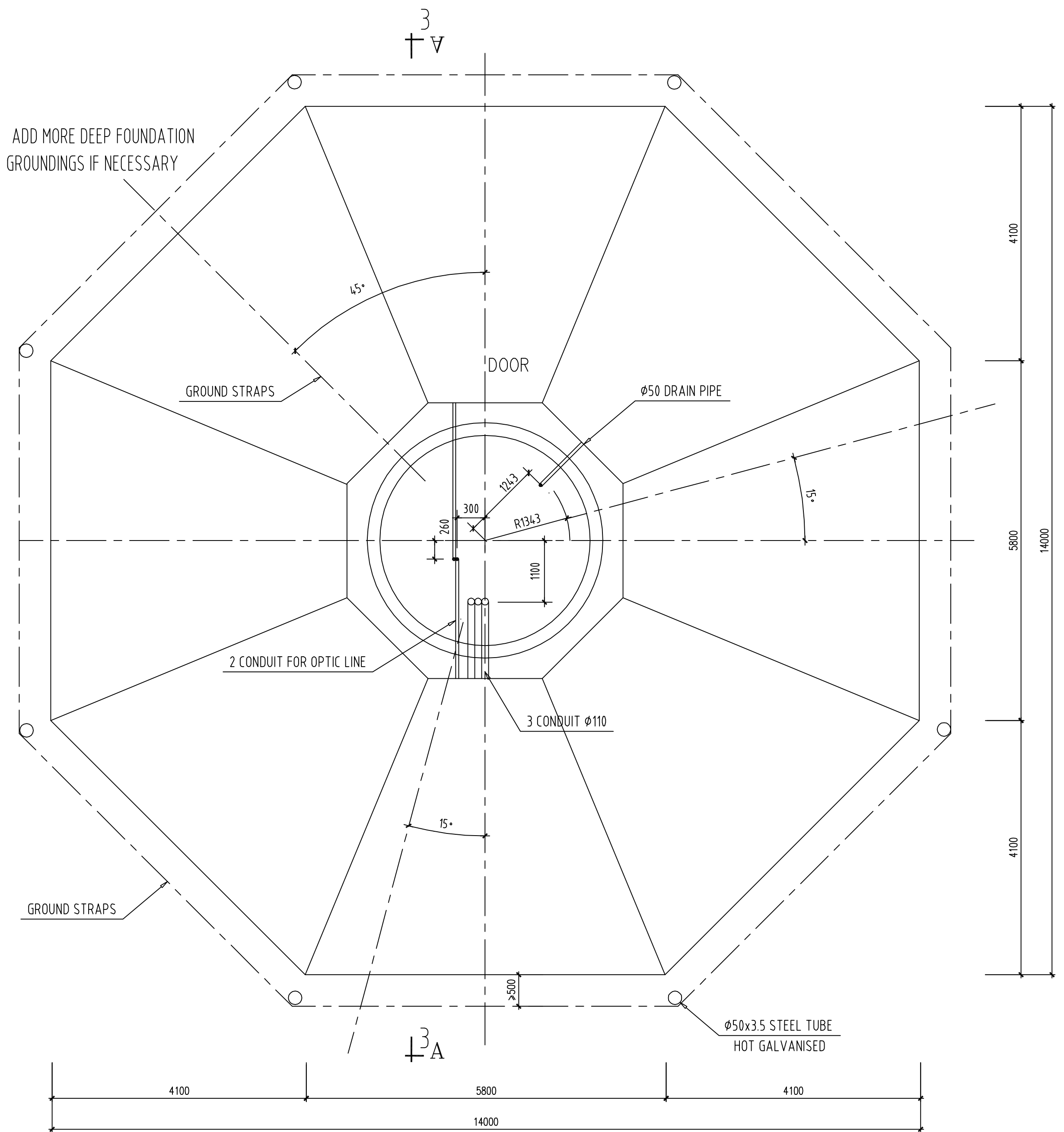
BOTTOM REINFORCEMENT

NAME		GOLDWIN TYPE S50/750 TOWER 50m IEC 11A	
CATEGORY		STRUCTURE DESIGN INSTRUCTION	
EDITION		1	
CATEGORY		BOTTOM REINFORCEMENT	
NO.		03	



TOP REINFORCEMENT

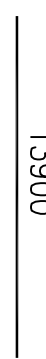
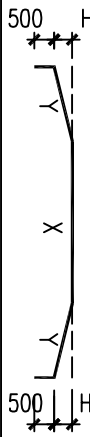
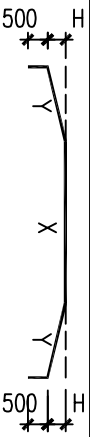
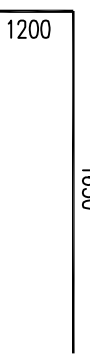
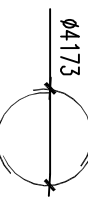
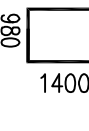
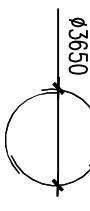
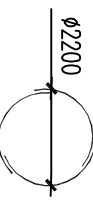
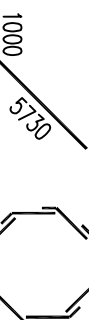
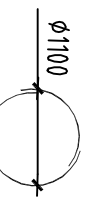
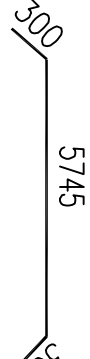
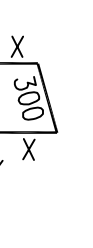
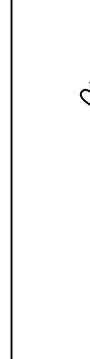
NAME	GOLDMIND TYPE S50/750 TOWER 50m IEC 11A		
STRUCTURE DESIGN INSTRUCTION			
EDITION	1		
CATEGORY	TOP REINFORCEMENT		
NO.	04		



3-3

NAME	GOLDWIND TYPE S50/750 TOWER 50m IEC 11A
STRUCTURE DESIGN INSTRUCTION	
EDITION	1
CATEGORY REINFORCEMENT ARRANGEMENT	
NO.	05

STEEL SCHEDULE

NO.	SHAPE	DIAMETER	COUNT	LENGTH	NOMINAL WEIGHT (kg/m)	OVERALL WEIGHT (kg)
①		Φ25	140	SEE BARS IN 1 LAYER	3.850	5274.1
②		Φ25	94	13900	3.850	5030.4
③		Φ25	100	SEE BARS IN 1 LAYER	3.850	4428
④		Φ25	40	SEE BARS IN 1 LAYER	3.850	2330
⑤		Φ20	48	2850	2.466	337.3
⑥		Φ16	3	16553	1.578	78
⑦		Φ20	116	6560	2.466	1876.5
⑧		Φ16	58	5080	1.578	465
⑨		Φ16	2	14907	1.578	47
⑩		Φ16	2	11950	1.578	38
⑪		Φ16	3	10407	1.578	49
⑫		Φ20	16	6730	2.466	265.5
⑬		Φ16	1	6900	1.578	10.9
⑭		Φ25	4	6345	3.850	97.7
⑮		Φ20	8 24 24 40	1245 1030 815 600	2.466	598.9
⑯		Φ20	48	3000	2.466	355.1
OVERALL WEIGHT OF STEEL BARS						21379

BARS IN 1 LAYER

Table 1				
編號	X (mm)	編號	X (mm)	編號
1	5705	15	9065	29
2	5945	16	9305	30
3	6185	17	9545	31
4	6425	18	9785	32
5	6665	19	10025	33
6	6905	20	10265	34
7	7145	21	10505	35
8	7385	22	10745	
9	7625	23	10985	
10	7865	24	11225	
11	8105	25	11465	
12	8345	26	11705	
13	8585	27	11945	
14	8825	28	12185	

编号	X(mm)	Y(mm)	H(mm)
1	5757	71	10

2	5591	287	50
3	5425	573	89
4	5259	858	129
5	5053	1144	168
6	4927	1429	208
7	4761	1715	248
8	4595	2000	287
9	4429	2286	327
10	4263	2571	366
11	4097	2857	406
12	3931	3143	446
13	3765	3428	485
14	3599	3714	525
15	3433	3999	564
16	3267	4285	604
17	3101	4570	644
18	2935	4856	683
19	2769	5141	723
20	2603	5427	762
21	2437	5713	802
22	2271	5921	842
23	2105	6009	881
24	1939	6097	921
25	1773	6184	960

編號	X(mm)	Y(mm)	H(mm)
26	2181	5986	990

編号	X(mm)	Y(mm)	H(mm)
26	2181	5986	990
27	2581	5740	990
28	2981	5543	990
29	3381	5346	990
30	3781	5149	990
31	4181	4953	990
32	4300	4944	990

NO.	ITEM	UNIT	COUNT
1	EXCAVATING	m ³	614.1
2	UNDERLAYER CONCRETE	m ³	16.71
3	PRINCIPAL CONCRETE	m ³	202.02
4	STEEL BARS	t	21.379

NAME	GOLDWIN D TYPE S50/750 TOWER 50m IEG 11A		
STRUCTURE DESIGN INSTRUCTION			
EDITION	1		
CATEGORY	STEEL SCHEDULE		
NO.	06		