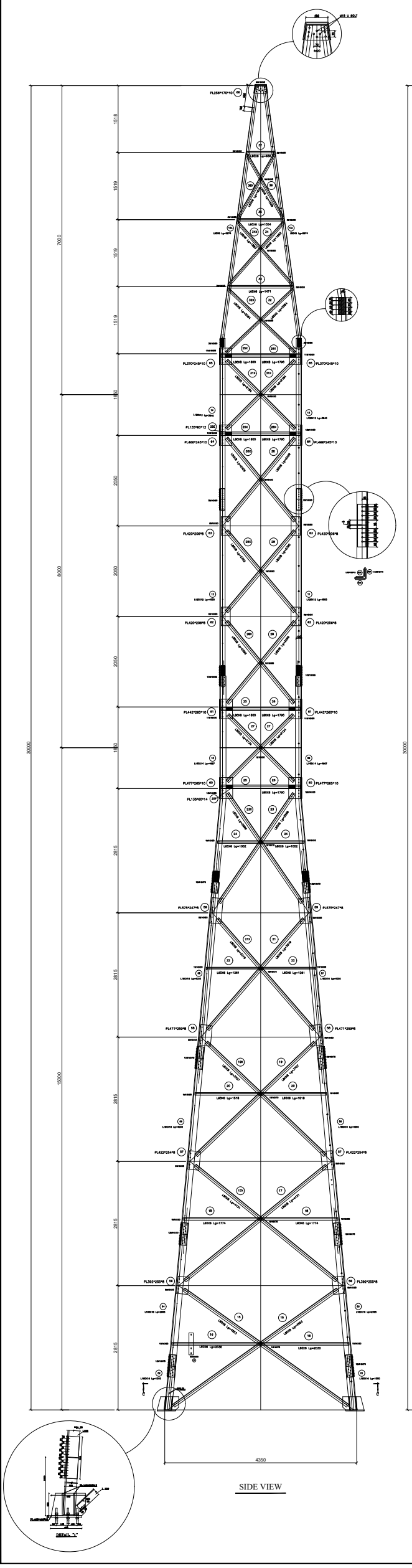
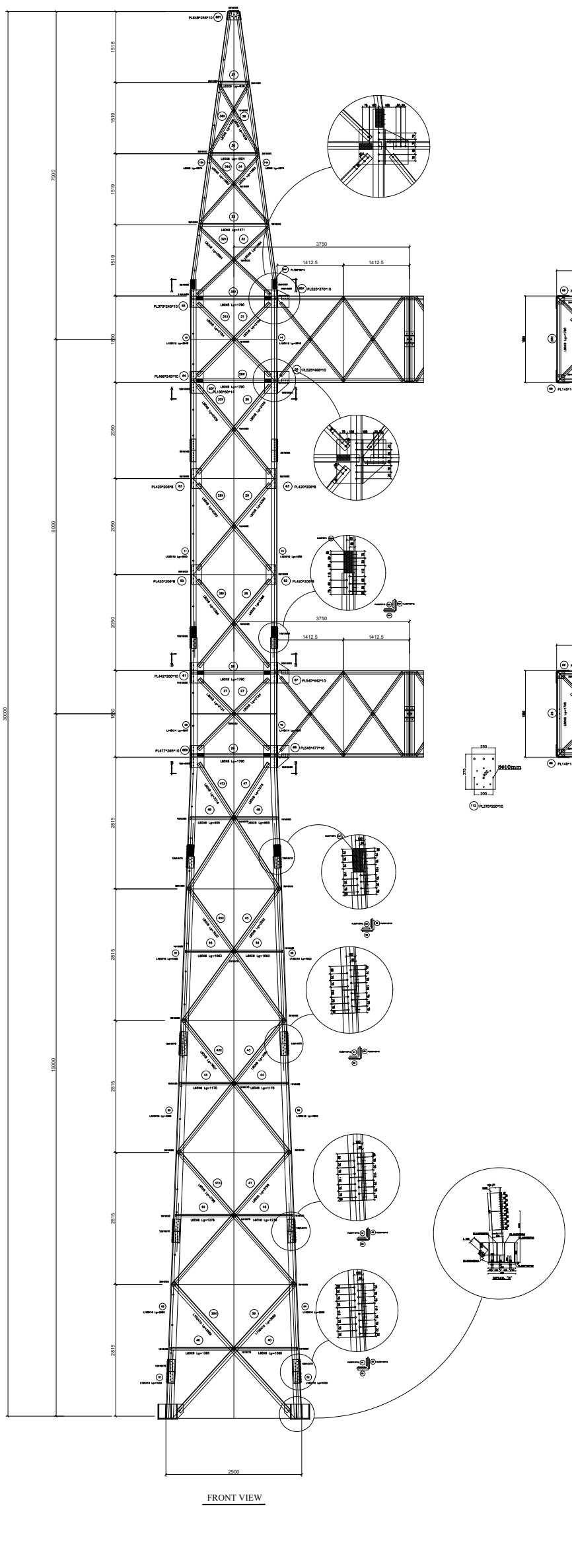
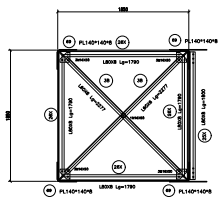


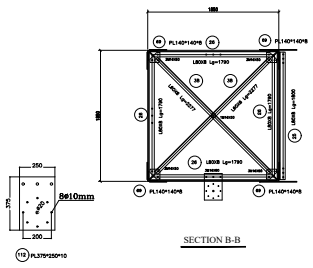
SIDE VIEW



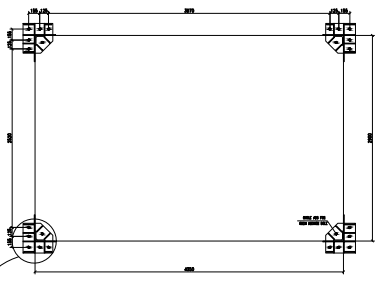
FRONT VIEW



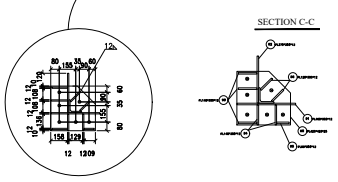
SECTION A-A



SECTION B-B



SECTION C-C



DETAIL "1"

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG16-1	L160*160*16	1000		2	2	38.8	77.6
2SCG16-2	L160*160*16	1000		2	2	38.8	77.6
2SCG16-3	L160*160*16	2995		2	2	116.2	232.5
2SCG16-4	L160*160*16	2995		2	2	116.2	232.5
2SCG16-5	L160*160*16	4000		2	2	155.2	310.5
2SCG16-6	L160*160*16	4000		2	2	155.2	310.5
2SCG16-7	L160*160*16	4000		2	2	155.2	310.5
2SCG16-8	L160*160*16	4000		2	2	155.2	310.5
2SCG16-9	L140*140*14	4667		2	2	137.2	274.4
2SCG16-10	L140*140*14	4667		2	2	137.2	274.4
2SCG16-11	L120*120*12	4000		2	2	86.4	172.8
2SCG16-12	L120*120*12	4000		2	2	86.4	172.8
2SCG16-13	L80*80*8	3640		2	2	35.2	70.3
2SCG16-14	L80*80*8	3640		2	2	35.2	70.3
2SCG16-13A	L80*80*8	5974		2	2	57.7	115.4
2SCG16-14A	L80*80*8	5974		2	2	57.7	115.4
2SCG16-15	L80*80*8	4553		4	4	44.0	175.9
2SCG16-15X	L80*80*8	4553		4	4	44.0	175.9
2SCG16-16	L60*60*6	2030		4	4	11.0	44.0
2SCG16-17	L80*80*8	4131		2	2	39.9	79.8
2SCG16-17X	L80*80*8	4131		2	2	39.9	79.8
2SCG16-18	L60*60*6	1774		4	4	9.6	38.5
2SCG16-19	L80*80*8	3707		2	2	35.8	71.6
2SCG16-19X	L80*80*8	3707		2	2	35.8	71.6
2SCG16-20	L60*60*6	1518		4	4	8.2	32.9
2SCG16-21	L80*80*8	3319		2	2	32.1	64.1
2SCG16-21X	L80*80*8	3319		2	2	32.1	64.1
2SCG16-22	L60*60*6	1261		4	4	6.8	27.3
2SCG16-23	L80*80*8	2996		2	2	28.9	57.9
2SCG16-23X	L80*80*8	2996		2	2	28.9	57.9
2SCG16-24	L60*60*6	1002		4	4	5.4	21.7
2SCG16-25	L80*80*8	1800		4	4	17.4	69.6
2SCG16-26	L80*80*8	1790		16	16	17.3	276.7
2SCG16-27	L80*80*8	2124		4	4	20.5	82.1
2SCG16-27X	L80*80*8	2124		4	4	20.5	82.1
2SCG16-28	L80*80*8	2396		4	4	23.1	92.6
2SCG16-28X	L80*80*8	2396		4	4	23.1	92.6
2SCG16-29	L80*80*8	2392		4	4	23.1	92.4
2SCG16-29X	L80*80*8	2392		4	4	23.1	92.4
2SCG16-30	L80*80*8	2429		4	4	23.5	93.9
2SCG16-30X	L80*80*8	2429		4	4	23.5	93.9
2SCG16-31	L80*80*8	2184		4	4	21.1	84.4
2SCG16-31X	L80*80*8	2184		4	4	21.1	84.4
2SCG16-32	L60*60*6	2084		4	4	11.3	45.2
2SCG16-32X	L60*60*6	2084		4	4	11.3	45.2
2SCG16-33	L60*60*6	1471		4	4	8.0	31.9
2SCG16-34	L60*60*6	1883		4	4	10.2	40.8
2SCG16-34X	L60*60*6	1883		4	4	10.2	40.8
2SCG16-35	L60*60*6	1054		4	4	5.7	22.9
2SCG16-36	L60*60*6	1639		4	4	8.9	35.5
2SCG16-36X	L60*60*6	1639		4	4	8.9	35.5
2SCG16-37	L60*60*6	636		4	4	3.4	13.8
2SCG16-38	L60*60*6	2277		8	8	12.3	98.7
2SCG16-39	L80*80*8	3689		2	2	35.6	71.3
2SCG16-39X	L80*80*8	3689		2	2	35.6	71.3
2SCG16-40	L60*60*6	1386		4	4	7.5	30.0
2SCG16-41	L80*80*8	3798		2	2	36.7	73.4
2SCG16-41X	L80*80*8	3798		2	2	36.7	73.4
2SCG16-42	L60*60*6	1278		4	4	6.9	27.7
2SCG16-43	L80*80*8	3661		2	2	35.4	70.7
2SCG16-43X	L80*80*8	3661		2	2	35.4	70.7
2SCG16-44	L60*60*6	1170		4	4	6.3	25.4
2SCG16-45	L80*80*8	3532		2	2	34.1	68.2
2SCG16-45X	L80*80*8	3532		2	2	34.1	68.2
2SCG16-46	L60*60*6	1063		4	4	5.8	23.0
2SCG16-47	L80*80*8	3216		2	2	31.1	62.1
2SCG16-47X	L80*80*8	3216		2	2	31.1	62.1
2SCG16-48	L60*60*6	955		4	4	5.2	20.7
2SCG16-50	PL12	495	110	24	24	5.1	123.1
2SCG16-51	PL12	495	90	24	24	4.2	100.7
2SCG16-52X	PL15	495	130	8	8	7.6	60.6
2SCG16-53X	PL12	495	100	8	8	3.9	31.1
2SCG16-54F	PL2	230	80	8	8	0.3	2.3
2SCG16-52A	PL10	485	90	8	8	3.4	27.4
2SCG16-53A	L100*100*10	485		4	4	7.3	29.3
2SCG16-56	PL8	392	255	4	4	6.3	25.1
2SCG16-57	PL8	422	254	4	4	6.7	26.9
2SCG16-58	PL8	471	259	4	4	7.7	30.6
2SCG16-59	PL8	575	247	4	4	8.9	35.7
2SCG16-60	PL10	477	265	6	6	9.9	59.5
2SCG16-61	PL10	442	260	6	6	9.0	54.1
2SCG16-62	PL8	420	206	4	4	5.4	21.7
2SCG16-63	PL8	420	206	4	4	5.4	21.7
2SCG16-64	PL10	466	245	6	6	9.0	53.8
2SCG16-65	PL10	370	245	6	6	7.1	42.7
2SCG16-65X	PL10	256	170	2	2	3.4	6.8
2SCG16-65F	PL4	195	60	8	8	0.4	2.9
2SCG16-66	PL10	648	256	1	1	13.0	13.0
2SCG16-67	PL10	540	442	2	2	18.7	37.5
2SCG16-68	PL10	545	477	2	2	20.4	40.8
2SCG16-69	PL8	140	140	16	16	1.2	19.7
2SCG16-69F	PL2	245	95	8	8	0.4	2.9
2SCG16-70	PL8	500	100	1	1	3.1	3.1
2SCG16-72	PL10	525	370	2	2	15.2	30.5
2SCG16-73	PL10	525	466	2	2	19.2	38.4
2SCG16-73F	PL2	230	80	8	8	0.3	2.3
2SCG16-90	PL25	420	420	4	4	34.6	138.5
2SCG16-91	PL12	460	300	4	4	13.0	52.0
2SCG16-92	PL12	370	300	4	4	10.5	41.8
2SCG16-93	PL12	300	148	12	12	4.2	50.2
2SCG16-94	PL12	300	148	8	8	4.2	33.5
2SCG16-95	PL12	300	99	4	4	2.8	11.2
2SCG16-96	PL12	300	125	8	8	3.5	28.3
FPL8	PL8	50	50	70	70	0.2	16.5
					TOTAL WEIGHT (Kg)		7973.2
					WEIGHT		7973.2

2SCG8		
SIZE	QTY	TOTAL Q
M16*45	680	8160
M16*50	197	2364
M16*60	272	3264
M16*180	94	1128

NOTES

1- ALL DIMENSIONS ARE IN mm.
2- STEEL : ST-37
3- ALL STRUCTURAL SECTIONS ARE HOT-DIP GALVANIZED ACC. TO ASTM A123
4- ALL ANGLES ARE FROM MILD STEEL WITH YIELD STRENGTH 2400 Kg/cm^2.
5- M-16 BOLTS ARE GRADE 8.8
6- ALL BOLTS,NUTS,WASHERS ARE HOT-DIP GALVANIZED ACC. TO ASTM A153
7-FOR EACH BOLT: ONE NUT, TWO WASHER AND ONE STANDARD SPRING WASHER ARE NEDDED.
8- S IS SHIELD WIRE ATTACHMENT POINT TO COLUMN (U-BOLT M18-70)

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODB NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: NORTHERN SITE INTERFACE 400/230 KV SUBSTATION

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG16"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

PROJECT CODE: –

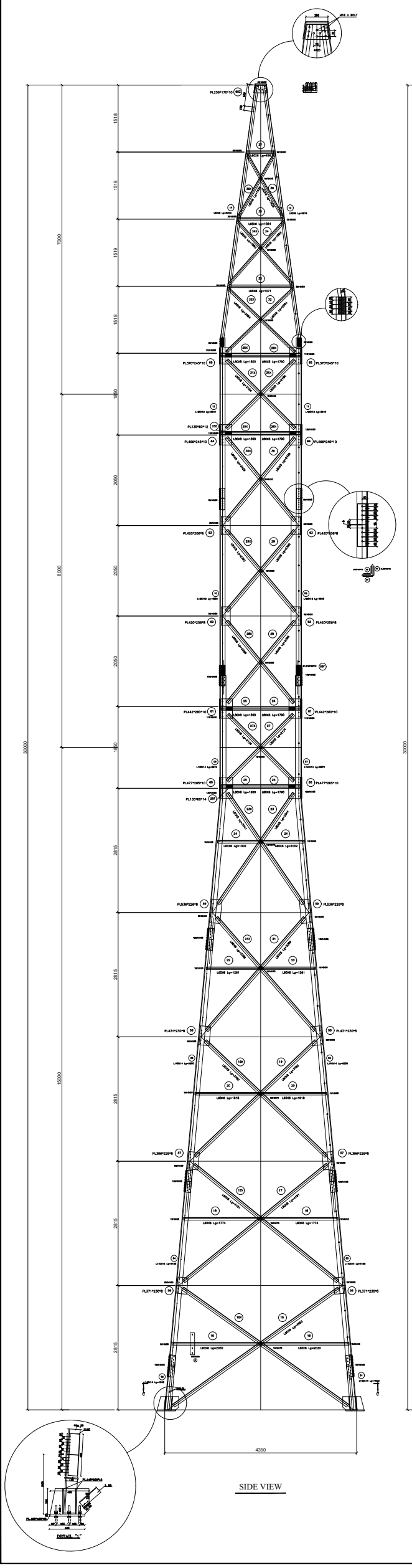
COMPUTER NO. : –

SCALE: –

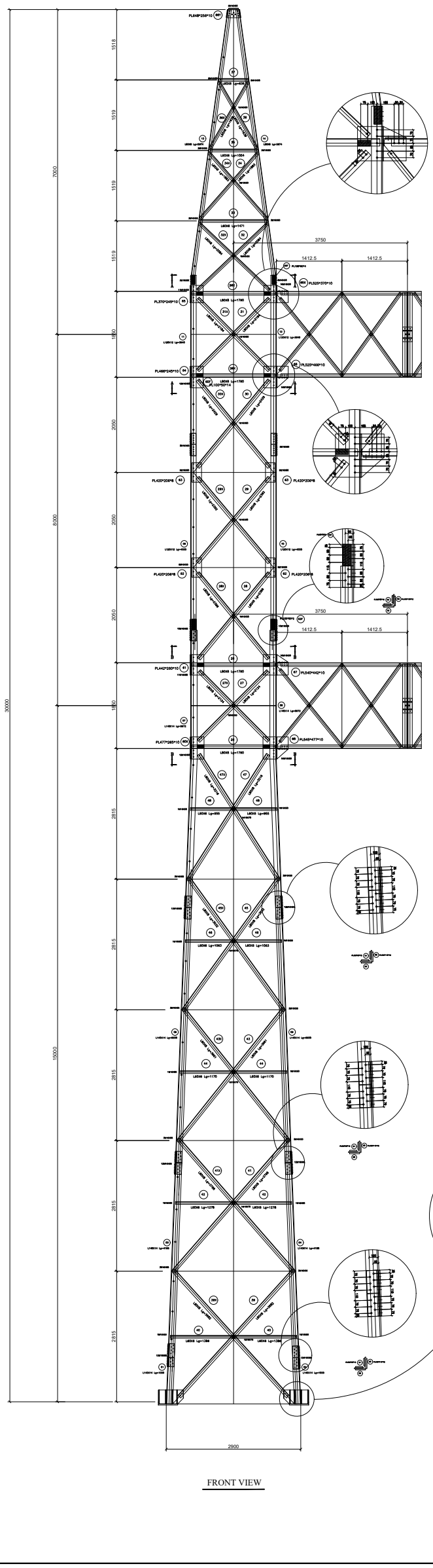
SIZE: A1

DRAWING NO. : –

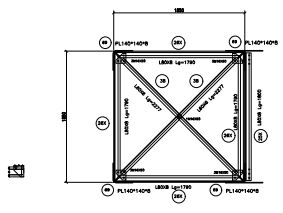
NO :1



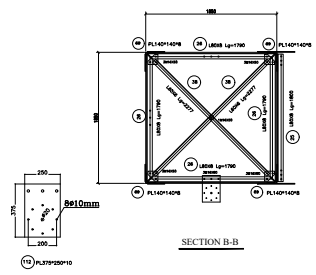
SIDE VIEW



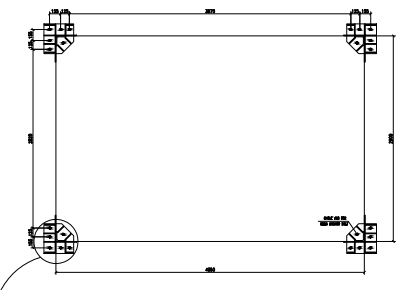
FRONT VIEW



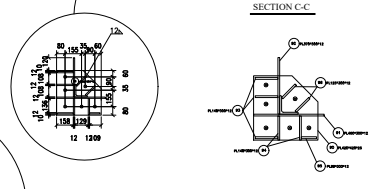
SECTION A-A



SECTION B-B



SECTION C-C



DETAIL "A"

DETAIL "B"

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG15-1	L140*140*14	1000		2	4	29.4	117.6
2SCG15-2	L140*140*14	1000		2	4	29.4	117.6
2SCG15-3	L140*140*14	4195		2	4	123.3	493.3
2SCG15-4	L140*140*14	4195		2	4	123.3	493.3
2SCG15-5	L140*140*14	5500		2	4	161.7	646.8
2SCG15-6	L140*140*14	5500		2	4	161.7	646.8
2SCG15-7	L140*140*14	5972		2	4	175.6	702.3
2SCG15-8	L140*140*14	5972		2	4	175.6	702.3
2SCG15-9	L120*120*12	4000		2	4	86.4	345.6
2SCG15-10	L120*120*12	4000		2	4	86.4	345.6
2SCG15-11	L120*120*12	3640		2	4	78.6	314.5
2SCG15-12	L120*120*12	3640		2	4	78.6	314.5
2SCG15-13	L80*80*8	5974		2	4	57.7	230.8
2SCG15-14	L80*80*8	5974		2	4	57.7	230.8
2SCG15-15	L80*80*8	4583		4	8	44.3	354.2
2SCG15-15X	L80*80*8	4583		4	8	44.3	354.2
2SCG15-16	L60*60*6	2030		4	8	11.0	88.0
2SCG15-17	L80*80*8	4191		2	4	40.5	161.9
2SCG15-17X	L80*80*8	4191		2	4	40.5	161.9
2SCG15-18	L60*60*6	1774		4	8	9.6	76.9
2SCG15-19	L80*80*8	3782		2	4	36.5	146.1
2SCG15-19X	L80*80*8	3782		2	4	36.5	146.1
2SCG15-20	L60*60*6	1518		4	8	8.2	65.8
2SCG15-21	L80*80*8	3389		2	4	32.7	131.0
2SCG15-21X	L80*80*8	3389		2	4	32.7	131.0
2SCG15-22	L60*60*6	1261		4	8	6.8	54.7
2SCG15-23	L80*80*8	3041		2	4	29.4	117.5
2SCG15-23X	L80*80*8	3041		2	4	29.4	117.5
2SCG15-24	L60*60*6	1002		4	8	5.4	43.4
2SCG15-25	L80*80*8	1800		4	8	17.4	139.1
2SCG15-26	L80*80*8	1790		16	32	17.3	553.3
2SCG15-27	L80*80*8	2124		4	8	20.5	164.1
2SCG15-27X	L80*80*8	2124		4	8	20.5	164.1
2SCG15-28	L80*80*8	2396		4	8	23.1	185.2
2SCG15-28X	L80*80*8	2396		4	8	23.1	185.2
2SCG15-29	L80*80*8	2392		4	8	23.1	184.9
2SCG15-29X	L80*80*8	2392		4	8	23.1	184.9
2SCG15-30	L80*80*8	2429		4	8	23.5	187.7
2SCG15-30X	L80*80*8	2429		4	8	23.5	187.7
2SCG15-31	L80*80*8	2184		4	8	21.1	168.8
2SCG15-31X	L80*80*8	2184		4	8	21.1	168.8
2SCG15-32	L60*60*6	2084		4	8	11.3	90.4
2SCG15-32X	L60*60*6	2084		4	8	11.3	90.4
2SCG15-33	L60*60*6	1471		4	8	8.0	63.8
2SCG15-34	L60*60*6	1883		4	8	10.2	81.6
2SCG15-34X	L60*60*6	1883		4	8	10.2	81.6
2SCG15-35	L60*60*6	1054		4	8	5.7	45.7
2SCG15-36	L60*60*6	1639		4	8	8.9	71.1
2SCG15-36X	L60*60*6	1639		4	8	8.9	71.1
2SCG15-37	L60*60*6	636		4	8	3.4	27.6
2SCG15-38	L60*60*6	2277		8	16	12.3	197.5
2SCG15-39	L80*80*8	3682		2	4	35.6	142.3
2SCG15-39X	L80*80*8	3682		2	4	35.6	142.3
2SCG15-40	L60*60*6	1386		4	8	7.5	60.1
2SCG15-41	L80*80*8	3798		2	4	36.7	146.8
2SCG15-41X	L80*80*8	3798		2	4	36.7	146.8
2SCG15-42	L60*60*6	1278		4	8	6.9	55.4
2SCG15-43	L80*80*8	3661		2	4	35.4	141.5
2SCG15-43X	L80*80*8	3661		2	4	35.4	141.5
2SCG15-44	L60*60*6	1170		4	8	6.3	50.7
2SCG15-45	L80*80*8	3532		2	4	34.1	136.5
2SCG15-45X	L80*80*8	3532		2	4	34.1	136.5
2SCG15-46	L60*60*6	1063		4	8	5.8	46.1
2SCG15-47	L80*80*8	3216		2	4	31.1	124.3
2SCG15-47X	L80*80*8	3216		2	4	31.1	124.3
2SCG15-48	L60*60*6	955		4	8	5.2	41.4
2SCG15-50	PL12	495	110	24	48	5.1	246.2
2SCG15-51	PL12	495	90	24	48	4.2	201.4
2SCG15-52	PL12	465	100	8	16	4.4	70.1
2SCG15-53	PL12	465	80	8	16	2.9	46.7
2SCG15-53F	PL2	230	80	8	16	0.3	4.6
2SCG15-54	PL10	485	90	8	16	3.4	54.8
2SCG15-55	L100*100*10	485		4	8	7.3	58.6
2SCG15-56	PL8	371	230	4	8	5.4	42.9
2SCG15-57	PL8	396	229	4	8	5.7	45.6
2SCG15-58	PL8	431	230	4	8	6.2	49.8
2SCG15-59	PL8	536	226	4	8	7.6	60.9
2SCG15-60	PL10	477	265	6	12	9.9	119.1
2SCG15-61	PL10	442	260	6	12	9.0	108.3
2SCG15-62	PL8	420	206	4	8	5.4	43.5
2SCG15-63	PL8	420	206	4	8	5.4	43.5
2SCG15-64	PL10	466	245	6	12	9.0	107.5
2SCG15-65	PL10	370	245	6	12	7.1	85.4
2SCG15-65X	PL10	256	170	2	4	3.4	13.7
2SCG15-66	PL10	648	256	1	2	13.0	26.0
2SCG15-67	PL10	540	442	2	4	18.7	74.9
2SCG15-68	PL10	545	477	2	4	20.4	81.6
2SCG15-69	PL8	140	140	16	32	1.2	39.4
2SCG15-69F	PL2	245	95	8	16	0.4	5.8
2SCG15-70	PL8	500	100	1	2	3.1	6.3
2SCG15-72	PL10	525	370	2	4	15.2	61.0
2SCG15-73	PL10	525	466	2	4	19.2	76.8
2SCG15-73F	PL2	230	80	8	16	0.3	4.6
2SCG15-90	PL25	420	420	4	8	34.6	276.9
2SCG15-91	PL12	460	300	4	8	13.0	104.0
2SCG15-92	PL12	370	300	4	8	10.5	83.6
2SCG15-93	PL12	300	148	12	24	4.2	100.4
2SCG15-94	PL12	300	148	8	16	4.2	66.9
2SCG15-95	PL12	300	99	4	8	2.8	22.4
2SCG15-96	PL12	300	125	8	16	3.5	56.5
FPL8	PL8	50	50	70	140	0.2	33.0
				TOTAL WEIGHT (Kg)			15305.6
				WEIGHT			7652.8

2SCG8		
SIZE	QTY	TOTAL Q
M16*45	680	8160
M16*50	192	2304
M16*60	272	3264
M16*180	94	1128

NOTES

1- ALL DIMENSIONS ARE IN mm.
2- STEEL : ST-37
3- ALL STRUCTURAL SECTIONS ARE HOT-DIP GALVANIZED ACC. TO ASTM A123
4- ALL ANGLES ARE FROM MILD STEEL WITH YIELD STRENGTH 2400 Kg/cm^2.
5- M-16 BOLTS ARE GRADE 8.8
6- ALL BOLTS,NUTS,WASHERS ARE HOT-DIP GALVANIZED ACC. TO ASTM A153
7-FOR EACH BOLT: ONE NUT, TWO WASHER AND ONE STANDARD SPRING WASHER ARE NEDDED.
8- S IS SHIELD WIRE ATTACHMENT POINT TO COLUMN (U-BOLT M18-70)

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

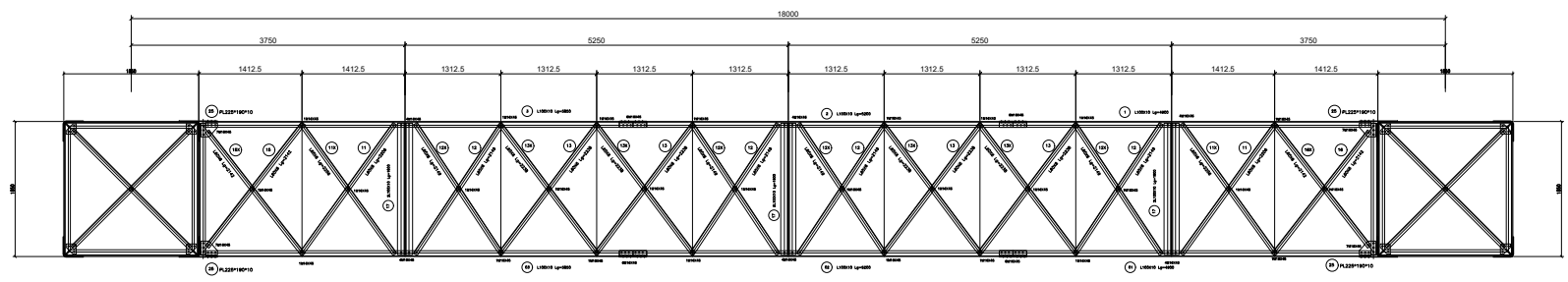
PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG15"

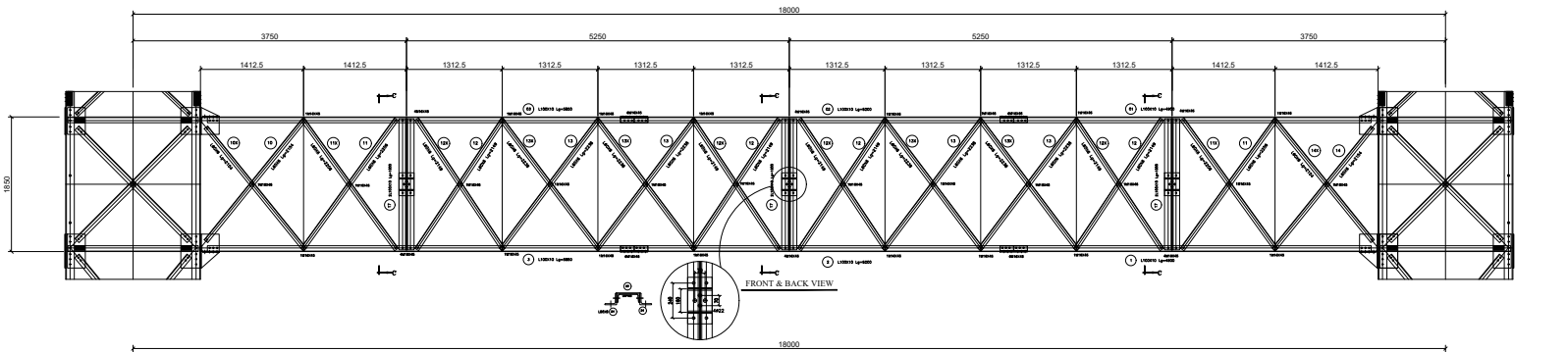
	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

PROJECT CODE: — | COMPUTER NO. : — | SCALE: – | SIZE: A1 | DRAWING NO. : —

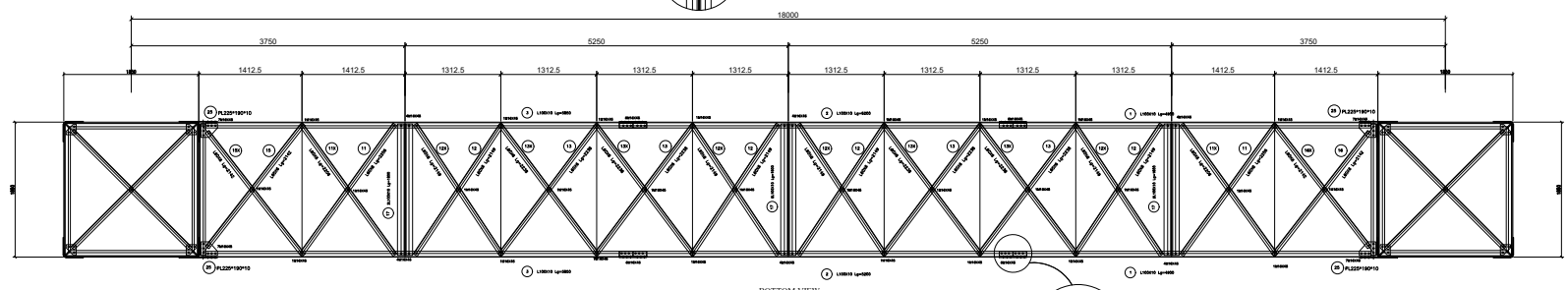
NO : 2



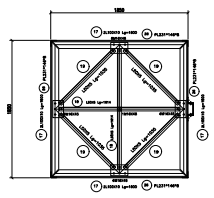
TOP VIEW



FRONT & BACK VIEW



BOTTOM VIEW



SECTION C-C

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT.W.	TOTAL W.
25BG10-1	L100*100*10	4800		1	4	74.0	296.0
25BG10-2	L100*100*10	5200		1	4	78.5	314.1
25BG10-3	L100*100*10	5850		1	4	88.3	353.3
25BG10-4	L100*100*10	4800		1	4	74.0	296.0
25BG10-5	L100*100*10	5200		1	4	78.5	314.1
25BG10-6	L100*100*10	5850		1	4	88.3	353.3
25BG10-7	L100*100*10	4800		1	4	74.0	296.0
25BG10-8	L100*100*10	5200		1	4	78.5	314.1
25BG10-9	L100*100*10	5850		1	4	88.3	353.3
25BG10-10	L100*100*10	4800		1	4	74.0	296.0
25BG10-11	L100*100*10	5200		1	4	78.5	314.1
25BG10-12	L100*100*10	5850		1	4	88.3	353.3
25BG10-10	L60*60*6	2154		2	8	11.7	93.4
25BG10-10X	L60*60*6	2154		2	8	11.7	93.4
25BG10-11	L60*60*6	2206		8	32	12.0	382.6
25BG10-11X	L60*60*6	2206		8	32	12.0	382.6
25BG10-12	L60*60*6	2149		16	64	11.6	745.4
25BG10-12X	L60*60*6	2149		16	64	11.6	745.4
25BG10-13	L60*60*6	2238		16	64	12.1	776.3
25BG10-13X	L60*60*6	2238		16	64	12.1	776.3
25BG10-14	L60*60*6	2154		2	8	11.7	93.4
25BG10-14X	L60*60*6	2154		2	8	11.7	93.4
25BG10-15	L60*60*6	2142		2	8	11.6	92.9
25BG10-15X	L60*60*6	2142		2	8	11.6	92.9
25BG10-16	L60*60*6	2142		2	8	11.6	92.9
25BG10-16X	L60*60*6	2142		2	8	11.6	92.9
25BG10-17	L100*100*10	1800		24	96	27.2	2609.3
25BG10-18	L50*50*5	1614		6	24	6.1	146.0
25BG10-19	L50*50*5	1081		12	48	4.1	195.6
25BG10-23	UNP160	208		6	24	3.9	93.8
25BG10-24	L80*80*8	208		12	48	2.0	96.4
25BG10-25	PL10	225	190	8	32	3.4	107.4
25BG10-26	PL8	231	146	12	48	2.1	101.7
25BG10-30	PL6	375	70	16	64	1.2	79.1
25BG10-31	PL6	375	70	16	64	1.2	79.1
TOTAL WEIGHT (Kg)							11915.9
WEIGHT							2979.0

SIZE	QTY	TOTAL Q
M16*45	480	1920

NOTES

1- ALL DIMENSIONS ARE IN mm.
2- STEEL : ST-37
3- ALL STRUCTURAL SECTIONS ARE HOT-DIP GALVANIZED ACC. TO ASTM A123
4- ALL ANGLES ARE FROM MILD STEEL WITH YIELD STRENGTH 2400 Kg/cm^2.
5- M-16 BOLTS ARE GRADE 8.8
6- ALL BOLTS,NUTS,WASHERS ARE HOT-DIP GALVANIZED ACC. TO ASTM A153
7-FOR EACH BOLT: ONE NUT, TWO WASHER AND ONE STANDARD SPRING WASHER ARE NEDDED.
8- S IS SHIELD WIRE ATTACHMENT POINT TO COLUMM (U-BOLT M18-70)

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

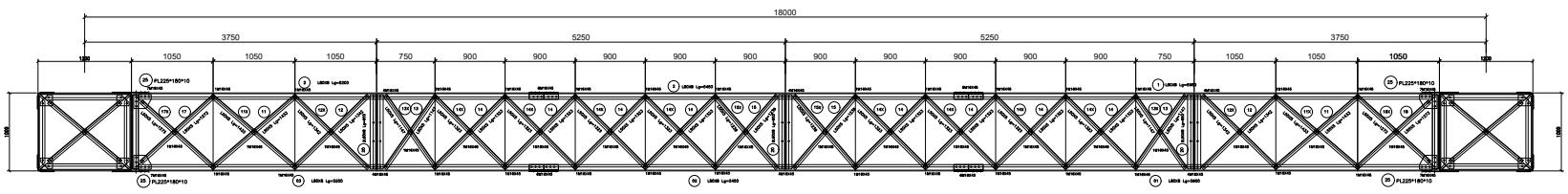
Consulting: SHOGOU NIHOO ENGINEERING COMPANY (S.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

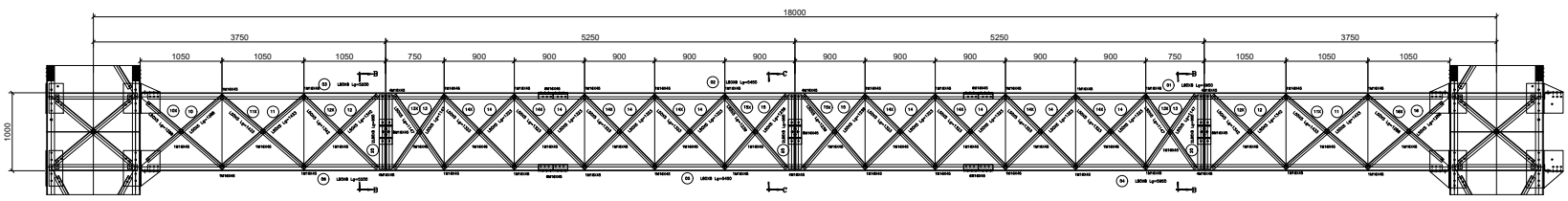
TITLE: STEEL STRUCTURE FOR COLUMN TYPE "4SBG10"

	NAME	PROJECT CODE:		COMPUTER NO. :
DESIGNED:	–	–		–
DRAWN:	–			
CHECKED:	Z.KH	SCALE: –	SIZE: A1	DRAWING NO. : –
APPROVED:	–			

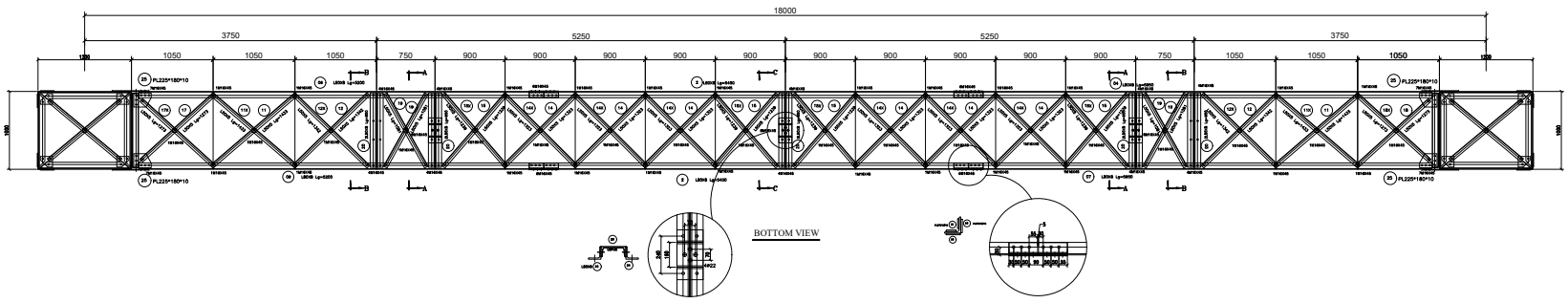
NO : 4



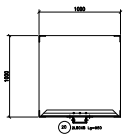
TOP VIEW



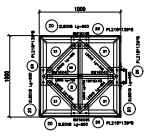
FRONT & BACK VIEW



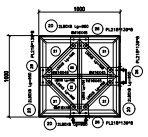
BOTTOM VIEW



SECTION A-A



SECTION B-B



SECTION C-C

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SBG9-1	L80*80*8	5950		1	2	57.5	115.0
2SBG9-2	L80*80*8	5450		1	2	52.6	105.3
2SBG9-3	L80*80*8	5200		1	2	50.2	100.5
2SBG9-4	L80*80*8	5950		1	2	57.5	115.0
2SBG9-5	L80*80*8	5500		1	2	53.1	106.3
2SBG9-6	L80*80*8	5200		1	2	50.2	100.5
2SBG9-7	L80*80*8	5950		1	2	57.5	115.0
2SBG9-8	L80*80*8	5450		1	2	52.6	105.3
2SBG9-9	L80*80*8	5200		1	2	50.2	100.5
2SBG9-10	L80*80*8	5950		1	2	57.5	115.0
2SBG9-11	L80*80*8	5450		1	2	52.6	105.3
2SBG9-12	L80*80*8	5200		1	2	50.2	100.5
2SBG9-10	L50*50*5	1288		2	4	4.9	19.4
2SBG9-10X	L50*50*5	1288		2	4	4.9	19.4
2SBG9-11	L50*50*5	1433		8	16	5.4	86.4
2SBG9-11X	L50*50*5	1433		8	16	5.4	86.4
2SBG9-12	L50*50*5	1342		8	16	5.1	80.9
2SBG9-12X	L50*50*5	1342		8	16	5.1	80.9
2SBG9-13	L50*50*5	1147		6	12	4.3	51.9
2SBG9-13X	L50*50*5	1147		6	12	4.3	51.9
2SBG9-14	L50*50*5	1323		30	60	5.0	299.3
2SBG9-14X	L50*50*5	1323		30	60	5.0	299.3
2SBG9-15	L50*50*5	1239		10	20	4.7	93.4
2SBG9-15X	L50*50*5	1239		10	20	4.7	93.4
2SBG9-16	L50*50*5	1288		2	4	4.9	19.4
2SBG9-16X	L50*50*5	1288		2	4	4.9	19.4
2SBG9-17	L50*50*5	1273		2	4	4.8	19.2
2SBG9-17X	L50*50*5	1273		2	4	4.8	19.2
2SBG9-18	L50*50*5	1273		2	4	4.8	19.2
2SBG9-18X	L50*50*5	1273		2	4	4.8	19.2
2SBG9-19	L50*50*5	1081		2	4	4.1	16.3
2SBG9-19X	L50*50*5	1081		2	4	4.1	16.3
2SBG9-20	L80*80*8	950		28	56	9.2	513.9
2SBG9-21	L50*50*5	466		12	24	1.8	42.2
2SBG9-22	L50*50*5	796		6	12	3.0	36.0
2SBG9-23	UNP160	168		9	18	3.2	56.9
2SBG9-24	L80*80*8	168		18	36	1.6	58.4
2SBG9-25	PL10	225	180	8	16	3.2	50.9
2SBG9-26	PL8	218	139	12	24	1.9	45.7
2SBG9-30	PL6	375	60	16	32	1.1	33.9
2SBG9-31	PL6	375	60	16	32	1.1	33.9
FPL8	PL8	50	50	75	150	0.2	23.6
					TOTAL WEIGHT (kg)		3590.1
					WEIGHT		1795.0

25BG1		
SIZE	QTY	TOTAL Q
M16*45	546	6552

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC, SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

NO : 2

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIRMOO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SBG9"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

PROJECT CODE: —

COMPUTER NO. : —

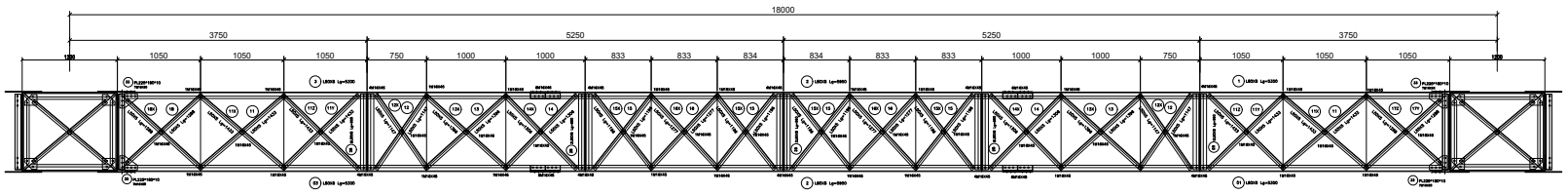
SCALE: –

SIZE: A1

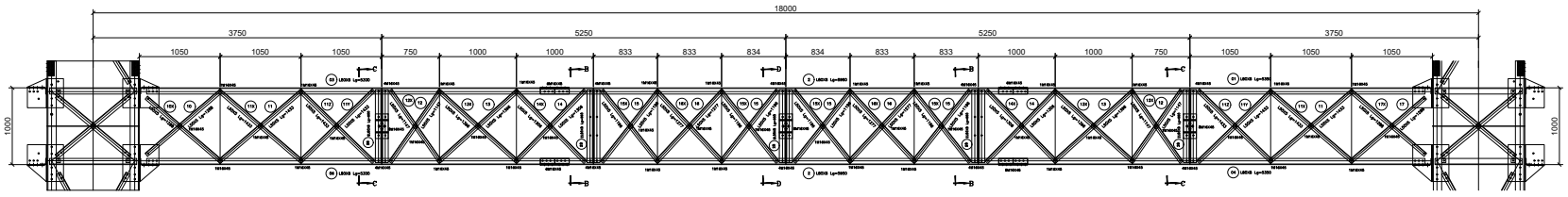
DRAWING NO. : —

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SBGB-1	L80*80*8	5350		1	2	51.7	103.4
2SBGB-2	L80*80*8	5950		1	2	57.5	115.0
2SBGB-3	L80*80*8	5300		1	2	51.2	102.4
2SBGB-4	L80*80*8	5350		1	2	51.7	103.4
2SBGB-5	L80*80*8	5950		1	2	57.5	115.0
2SBGB-6	L80*80*8	5300		1	2	51.2	102.4
2SBGB-7	L80*80*8	5350		1	2	51.7	103.4
2SBGB-8	L80*80*8	5950		1	2	57.5	115.0
2SBGB-9	L80*80*8	5300		1	2	51.2	102.4
2SBGB-10	L80*80*8	5350		1	2	51.7	103.4
2SBGB-11	L80*80*8	5950		1	2	57.5	115.0
2SBGB-12	L80*80*8	5300		1	2	51.2	102.4
2SBGB-10	L50*50*5	1288		2	4	4.9	19.4
2SBGB-10X	L50*50*5	1288		2	4	4.9	19.4
2SBGB-11	L50*50*5	1433		16	32	5.4	172.9
2SBGB-11X	L50*50*5	1433		16	32	5.4	172.9
2SBGB-12	L50*50*5	1147		6	12	4.3	51.9
2SBGB-12X	L50*50*5	1147		6	12	4.3	51.9
2SBGB-13	L50*50*5	1396		6	12	5.3	63.2
2SBGB-13X	L50*50*5	1396		6	12	5.3	63.2
2SBGB-14	L50*50*5	1306		10	20	4.9	98.5
2SBGB-14X	L50*50*5	1306		10	20	4.9	98.5
2SBGB-15	L50*50*5	1196		16	32	4.5	144.3
2SBGB-15X	L50*50*5	1196		16	32	4.5	144.3
2SBGB-16	L50*50*5	999		3	6	3.8	22.6
2SBGB-16X	L50*50*5	999		3	6	3.8	22.6
2SBGB-17	L50*50*5	1288		4	8	4.9	38.8
2SBGB-17X	L50*50*5	1288		4	8	4.9	38.8
2SBGB-18	L50*50*5	1288		2	4	4.9	19.4
2SBGB-18X	L50*50*5	1288		2	4	4.9	19.4
2SBGB-19	L50*50*5	1081		2	4	4.1	16.3
2SBGB-19X	L50*50*5	1081		2	4	4.1	16.3
2SBGB-28	L80*80*8	950		44	88	9.2	807.6
2SBGB-30	L50*50*5	466		20	40	1.8	70.3
2SBGB-31	L50*50*5	796		10	20	3.0	60.0
2SBGB-32	PL8	218	139	20	40	1.9	76.1
2SBGB-33	PL10	225	180	8	16	3.2	50.9
2SBGB-34	PL6	375	60	16	32	1.8	56.5
2SBGB-35	PL6	375	60	16	32	1.8	56.5
2SBGB-36	L80*80*8	168		18	36	1.6	58.4
2SBGB-37	UNP160	168		9	18	3.2	56.9
					TOTAL WEIGHT (Kg)		3876.6
					WEIGHT		1935.8

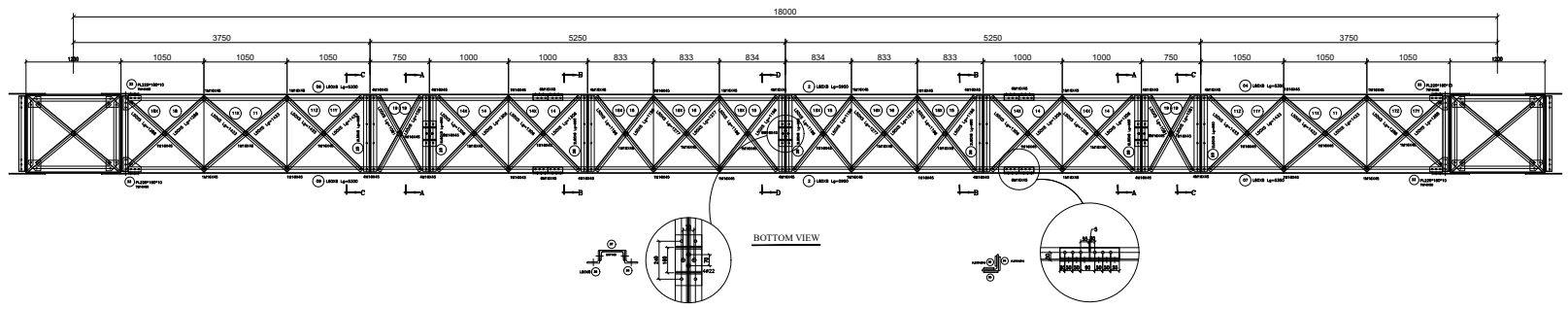
2SBG1		
SIZE	QTY	TOTAL Q
M16*45	546	6552



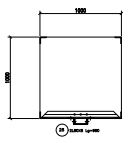
TOP VIEW



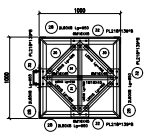
FRONT & BACK VIEW



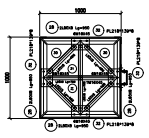
BOTTOM VIEW



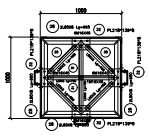
SECTION A-A



SECTION B-B



SECTION C-C



SECTION C-C

NO : 2

NOTES

1- ALL DIMENSIONS ARE IN mm.
2- STEEL : ST-37
3- ALL STRUCTURAL SECTIONS ARE HOT-DIP GALVANIZED ACC. TO ASTM A123
4- ALL ANGLES ARE FROM MILD STEEL WITH YIELD STRENGTH 2400 Kg/cm^2.
5- M-16 BOLTS ARE GRADE 8.8
6- ALL BOLTS,NUTS,WASHERS ARE HOT-DIP GALVANIZED ACC. TO ASTM A153
7-FOR EACH BOLT: ONE NUT, TWO WASHER AND ONE STANDARD SPRING WASHER ARE NEDDED.
8- S IS SHIELD WIRE ATTACHMENT POINT TO COLUMN (U-BOLT M18-70)

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODE NIMOO CONSTRUCTIONS (G.N.B.C)

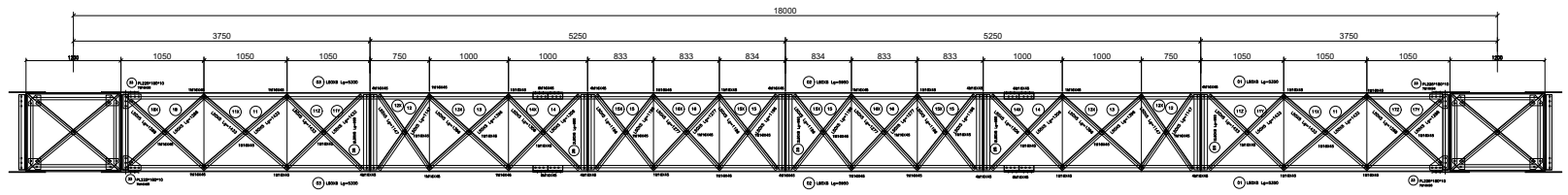
PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "4SBG8"

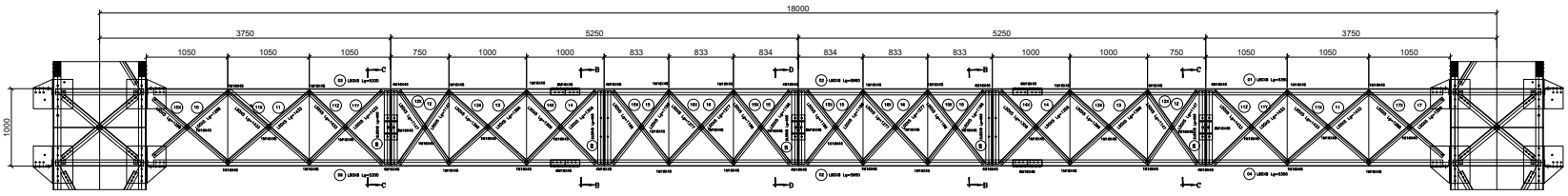
	NAME	PROJECT CODE:		COMPUTER NO. :
DESIGNED:	–	—		—
DRAWN:	–	SCALE: –	SIZE: A1	DRAWING NO. : —
CHECKED:	Z.KH			
APPROVED:	–			

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SBG7-1	L80*80*8	5350		1	1	51.7	51.7
2SBG7-2	L80*80*8	5950		1	1	57.5	57.5
2SBG7-3	L80*80*8	5300		1	1	51.2	51.2
2SBG7-4	L80*80*8	5350		1	1	51.7	51.7
2SBG7-5	L80*80*8	5950		1	1	57.5	57.5
2SBG7-6	L80*80*8	5300		1	1	51.2	51.2
2SBG7-7	L80*80*8	5350		1	1	51.7	51.7
2SBG7-8	L80*80*8	5950		1	1	57.5	57.5
2SBG7-9	L80*80*8	5300		1	1	51.2	51.2
2SBG7-10	L80*80*8	5350		1	1	51.7	51.7
2SBG7-11	L80*80*8	5950		1	1	57.5	57.5
2SBG7-12	L80*80*8	5300		1	1	51.2	51.2
2SBG7-10	L50*50*5	1288		2	2	4.9	9.7
2SBG7-10X	L50*50*5	1288		2	2	4.9	9.7
2SBG7-11	L50*50*5	1433		16	16	5.4	86.4
2SBG7-11X	L50*50*5	1433		16	16	5.4	86.4
2SBG7-12	L50*50*5	1147		6	6	4.3	25.9
2SBG7-12X	L50*50*5	1147		6	6	4.3	25.9
2SBG7-13	L50*50*5	1396		6	6	5.3	31.6
2SBG7-13X	L50*50*5	1396		6	6	5.3	31.6
2SBG7-14	L50*50*5	1306		10	10	4.9	49.2
2SBG7-14X	L50*50*5	1306		10	10	4.9	49.2
2SBG7-15	L50*50*5	1196		16	16	4.5	72.1
2SBG7-15X	L50*50*5	1196		16	16	4.5	72.1
2SBG7-16	L50*50*5	999		3	3	3.8	11.3
2SBG7-16X	L50*50*5	999		3	3	3.8	11.3
2SBG7-17	L50*50*5	1288		4	4	4.9	19.4
2SBG7-17X	L50*50*5	1288		4	4	4.9	19.4
2SBG7-18	L50*50*5	1288		2	2	4.9	9.7
2SBG7-18X	L50*50*5	1288		2	2	4.9	9.7
2SBG7-19	L50*50*5	1081		2	2	4.1	8.2
2SBG7-19X	L50*50*5	1081		2	2	4.1	8.2
2SBG7-28	L80*80*8	950		44	44	9.2	403.8
2SBG7-30	L50*50*5	466		20	20	1.8	35.1
2SBG7-31	L50*50*5	796		10	10	3.0	30.0
2SBG7-32	PL8	218	139	20	20	1.9	38.1
2SBG7-33	PL10	225	180	8	8	3.2	25.4
2SBG7-34	PL6	375	60	16	16	1.8	28.3
2SBG7-35	PL6	375	60	16	16	1.8	28.3
2SBG7-36	L80*80*8	168		18	18	1.6	29.2
2SBG7-37	UNP160	168		9	9	3.2	28.4
					TOTAL WEIGHT (Kg)		1935.3
					WEIGHT		1935.3

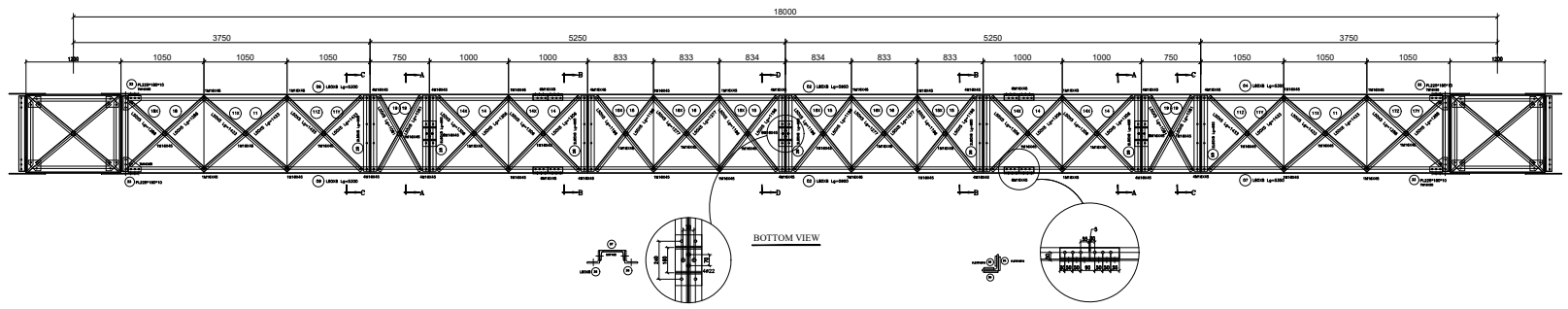
2SBG1		
SIZE	QTY	TOTAL Q
M16*45	546	6552



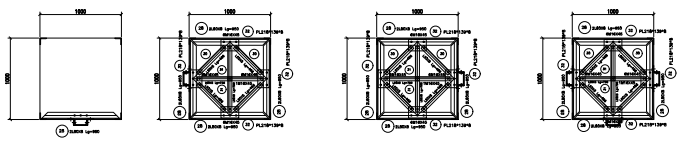
TOP VIEW



FRONT & BACK VIEW



BOTTOM VIEW



SECTION A-A SECTION B-B SECTION C-C SECTION C-C

NO : 1

NOTES

1- ALL DIMENSIONS ARE IN mm.
2- STEEL : ST-37
3- ALL STRUCTURAL SECTIONS ARE HOT-DIP GALVANIZED ACC. TO ASTM A123
4- ALL ANGLES ARE FROM MILD STEEL WITH YIELD STRENGTH 2400 Kg/cm^2.
5- M-16 BOLTS ARE GRADE 8.8
6- ALL BOLTS,NUTS,WASHERS ARE HOT-DIP GALVANIZED ACC. TO ASTM A153
7-FOR EACH BOLT: ONE NUT, TWO WASHER AND ONE STANDARD SPRING WASHER ARE NEDDED.
8- S IS SHIELD WIRE ATTACHMENT POINT TO COLUMN (U-BOLT M18-70)

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "4SBG7"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

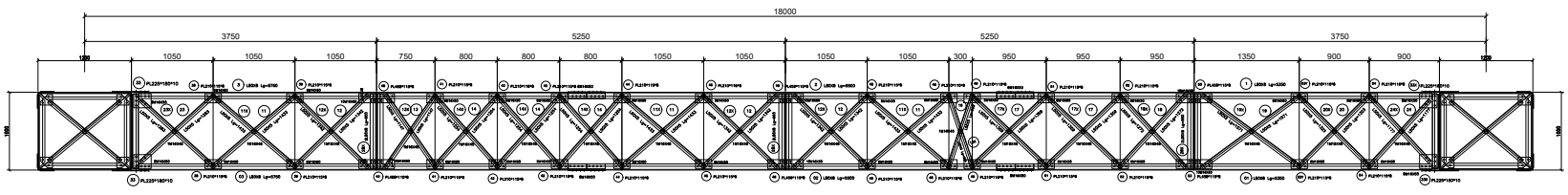
PROJECT CODE: –

COMPUTER NO. : –

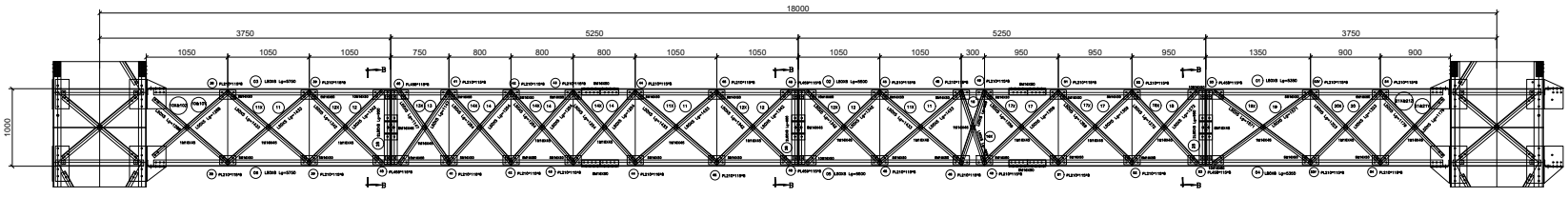
SCALE: –

SIZE: A1

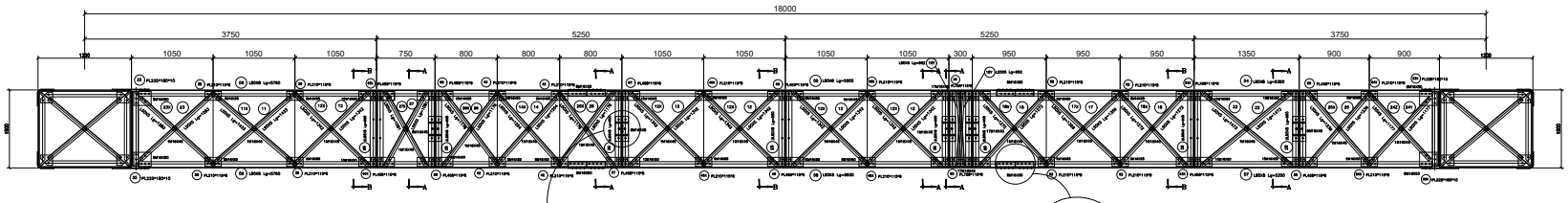
DRAWING NO. : –



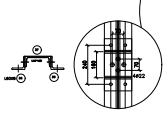
TOP VIEW

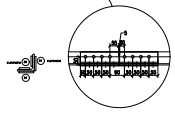


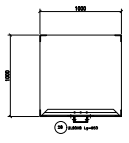
FRONT & BACK VIEW



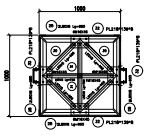
BOTTOM VIEW







SECTION A-A



SECTION B-B

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SBG6-1	UBD*80*8	5350		1	1	51.7	51.7
2SBG6-2	UBD*80*8	5500		1	1	53.1	53.1
2SBG6-3	UBD*80*8	5750		1	1	55.5	55.5
2SBG6-4	UBD*80*8	5350		1	1	51.7	51.7
2SBG6-5	UBD*80*8	5500		1	1	53.1	53.1
2SBG6-6	UBD*80*8	5750		1	1	55.5	55.5
2SBG6-7	UBD*80*8	5350		1	1	51.7	51.7
2SBG6-8	UBD*80*8	5500		1	1	53.1	53.1
2SBG6-9	UBD*80*8	5750		1	1	55.5	55.5
2SBG6-10	UBD*80*8	5350		1	1	51.7	51.7
2SBG6-11	UBD*80*8	5500		1	1	53.1	53.1
2SBG6-12	UBD*80*8	5750		1	1	55.5	55.5
2SBG6-10	UBD*50*5	1288		2	2	4.9	9.7
2SBG6-10X	UBD*50*5	1288		2	2	4.9	9.7
2SBG6-11	UBD*50*5	1433		4	4	5.4	21.6
2SBG6-11X	UBD*50*5	1433		4	4	5.4	21.6
2SBG6-12	UBD*50*5	1342		14	14	5.1	70.8
2SBG6-12X	UBD*50*5	1342		14	14	5.1	70.8
2SBG6-13	UBD*50*5	1147		3	3	4.3	13.0
2SBG6-13X	UBD*50*5	1147		3	3	4.3	13.0
2SBG6-14	UBD*50*5	1264		10	10	4.7	47.3
2SBG6-14X	UBD*50*5	1264		10	10	4.7	47.3
2SBG6-15	UBD*50*5	1433		6	6	5.4	32.4
2SBG6-15X	UBD*50*5	1433		6	6	5.4	32.4
2SBG6-16	UBD*50*5	999		3	3	3.8	11.3
2SBG6-16X	UBD*50*5	999		3	3	3.8	11.3
2SBG6-16Y	UBD*50*5	962		1	1	3.6	3.6
2SBG6-16Z	UBD*50*5	962		1	1	3.6	3.6
2SBG6-17	UBD*50*5	1353		11	11	5.1	56.4
2SBG6-17X	UBD*50*5	1353		11	11	5.1	56.4
2SBG6-18	UBD*50*5	1272		5	5	4.8	24.0
2SBG6-18X	UBD*50*5	1272		5	5	4.8	24.0
2SBG6-19	UBD*50*5	1571		3	3	5.9	17.8
2SBG6-19X	UBD*50*5	1571		3	3	5.9	17.8
2SBG6-20	UBD*50*5	1323		3	3	5.0	15.0
2SBG6-20X	UBD*50*5	1323		3	3	5.0	15.0
2SBG6-21	UBD*50*5	1179		1	1	4.4	4.4
2SBG6-21X	UBD*50*5	1179		1	1	4.4	4.4
2SBG6-22	UBD*50*5	1473		1	1	5.6	5.6
2SBG6-22X	UBD*50*5	1473		1	1	5.6	5.6
2SBG6-23	UBD*50*5	1283		2	2	4.8	9.7
2SBG6-23X	UBD*50*5	1283		2	2	4.8	9.7
2SBG6-24	UBD*50*5	1177		2	2	4.4	8.9
2SBG6-24X	UBD*50*5	1177		2	2	4.4	8.9
2SBG6-25	UBD*50*5	1239		1	1	4.7	4.7
2SBG6-25X	UBD*50*5	1239		1	1	4.7	4.7
2SBG6-26	UBD*50*5	1176		2	2	4.4	8.9
2SBG6-26X	UBD*50*5	1176		2	2	4.4	8.9
2SBG6-27	UBD*50*5	1081		1	1	4.1	4.1
2SBG6-27X	UBD*50*5	1081		1	1	4.1	4.1
2SBG6-28	UBD*50*8	950		34	34	9.2	312.0
2SBG6-30	UBD*50*5	466		12	12	1.8	21.1
2SBG6-31	UBD*50*5	796		6	6	3.0	18.0
2SBG6-32	PL8	218	139	12	12	1.9	22.8
2SBG6-33	PL10	225	180	8	8	3.2	25.4
2SBG6-34	PL6	375	60	16	16	1.8	28.3
2SBG6-35	PL6	375	60	16	16	1.8	28.3
2SBG6-36	UBD*50*8	168		22	22	1.6	35.7
2SBG6-37	UNP160	168		11	11	3.2	34.7
2SBG6-38	PL8	210	115	8	8	1.5	12.1
2SBG6-39	PL8	210	115	8	8	1.5	12.1
2SBG6-40	PL8	458	115	8	8	3.3	26.5
2SBG6-41	PL8	210	115	6	6	1.5	9.1
2SBG6-42	PL8	210	115	8	8	1.5	12.1
2SBG6-43	PL8	210	115	8	8	1.5	12.1
2SBG6-44	PL8	210	115	6	6	1.5	9.1
2SBG6-45	PL8	210	115	6	6	1.5	9.1
2SBG6-45X	PL8	210	115	2	2	1.5	3.0
2SBG6-46	PL8	459	115	8	8	3.3	26.5
2SBG6-47	PL8	210	115	8	8	1.5	12.1
2SBG6-48	PL8	210	115	6	6	1.5	9.1
2SBG6-49	PL8	210	115	6	6	1.5	9.1
2SBG6-50	PL8	758	115	2	2	5.5	10.9
2SBG6-51	PL8	210	115	8	8	1.5	12.1
2SBG6-52	PL8	210	115	8	8	1.5	12.1
2SBG6-53	PL8	459	115	8	8	3.3	26.5
2SBG6-53X	PL8	210	115	6	6	1.5	9.1
2SBG6-54	PL8	210	115	8	8	1.5	12.1
2SBG6-55	PL8	458	115	2	2	3.3	6.6
2SBG6-56	PL8	458	115	2	2	3.3	6.6
2SBG6-57	PL8	458	115	2	2	3.3	6.6
						TOTAL WEIGHT (Kg)	1905.6
						WEIGHT	1905.6

SIZE	QTY	TOTAL Q
M16*45	700	700

NOTES

1- ALL DIMENSIONS ARE IN mm.
2- STEEL : ST-37
3- ALL STRUCTURAL SECTIONS ARE HOT-DIP GALVANIZED ACC. TO ASTM A123
4- ALL ANGLES ARE FROM MILD STEEL WITH YIELD STRENGTH 2400 Kg/cm^2.
5- M-16 BOLTS ARE GRADE 8.8
6- ALL BOLTS,NUTS,WASHERS ARE HOT-DIP GALVANIZED ACC. TO ASTM A153
7-FOR EACH BOLT: ONE NUT, TWO WASHER AND ONE STANDARD SPRING WASHER ARE NEDDED.
8- S IS SHIELD WIRE ATTACHMENT POINT TO COLUMN (U-BOLT M18-70)

NO : 1

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00	–		

CLIENT: P.G.M.I.S.E.Z

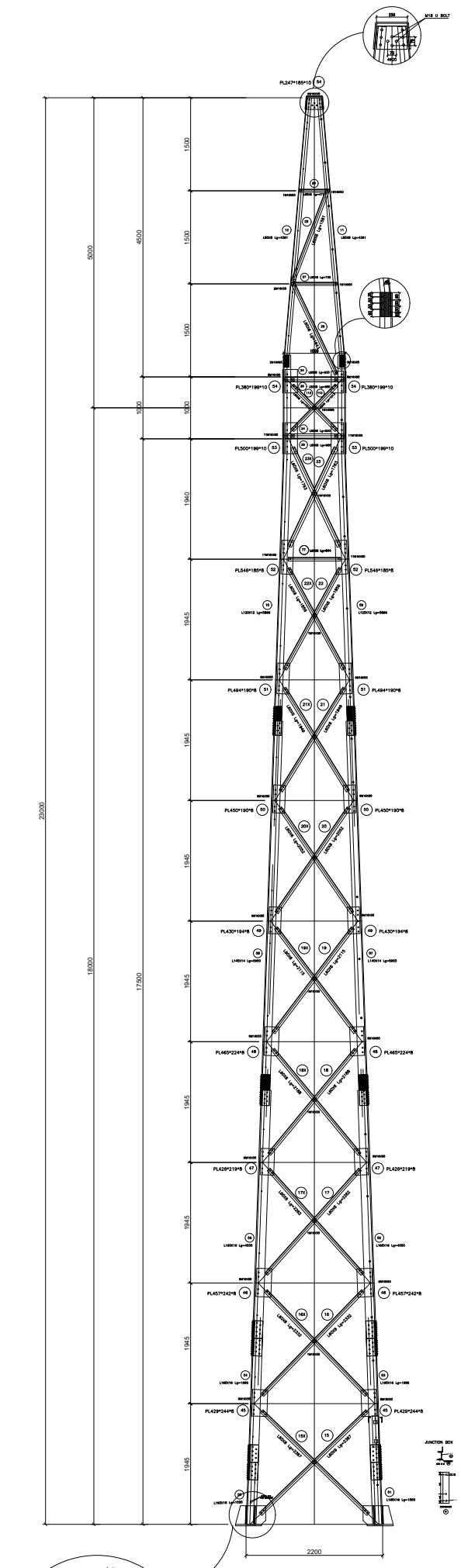
Consultings: GHODE KINOO ENGINEERING COMPANY (G.K.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

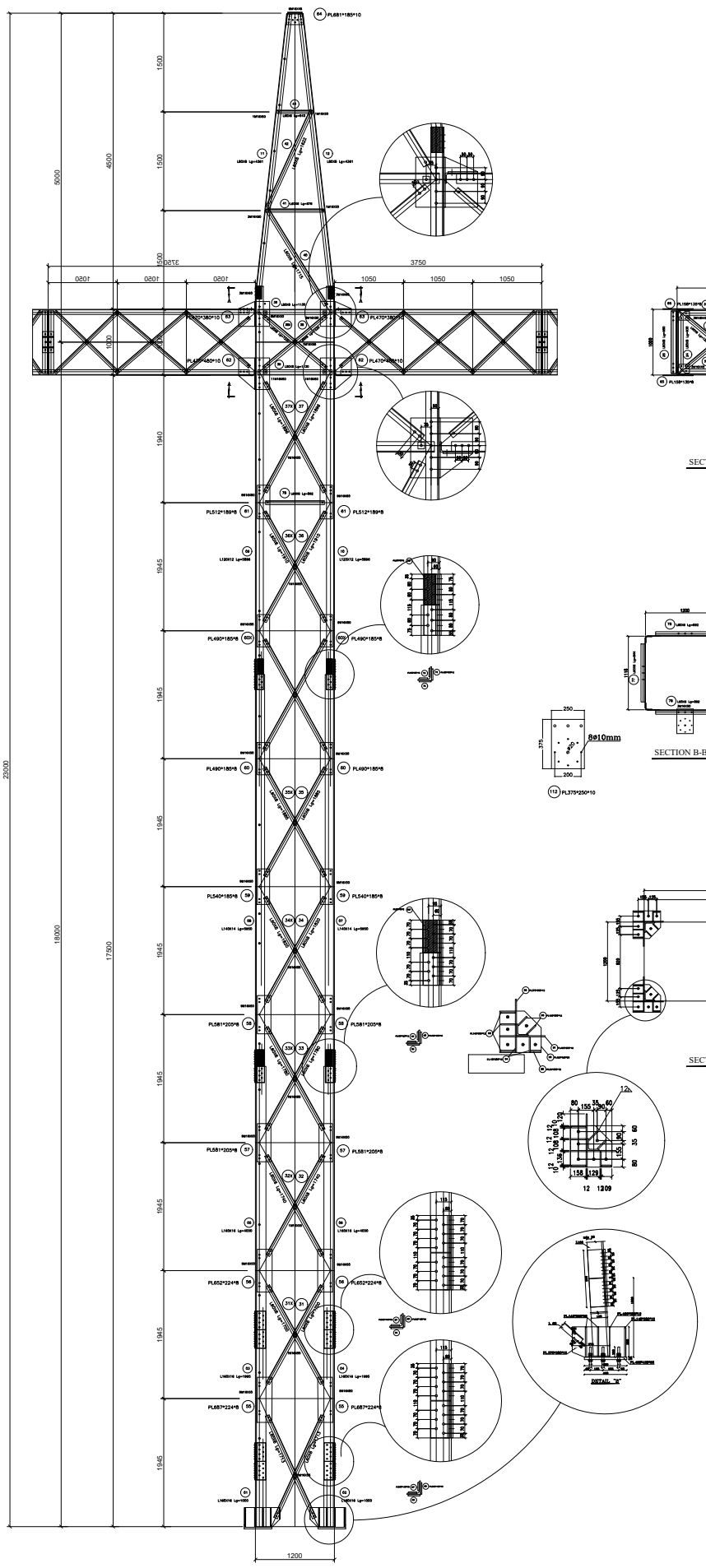
TITLE: STEEL STRUCTURE FOR COLUMN TYPE "4SBG6"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

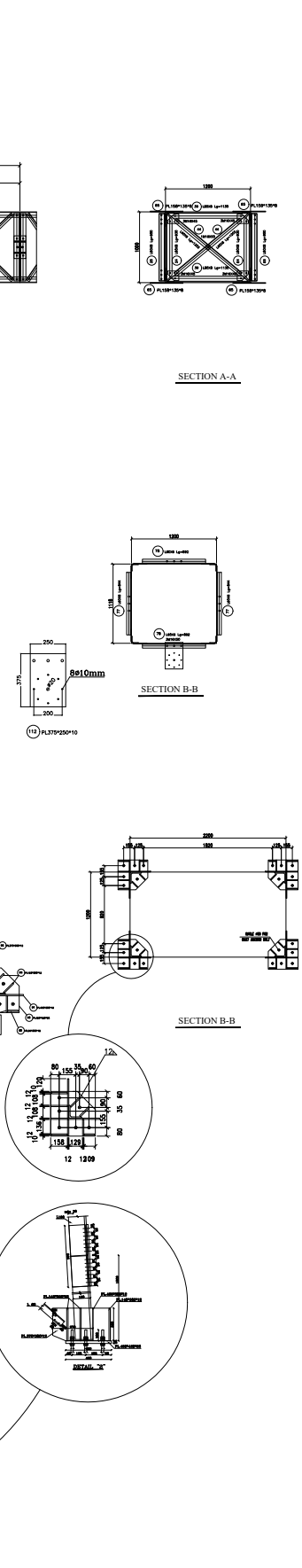
PROJECT CODE: —
COMPUTER NO. : —
SCALE: –
SIZE: A1
DRAWING NO. : —



SIDE VIEW



FRONT VIEW



MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG14-1	L160*160*16	1000		2	2	38.8	77.6
2SCG14-2	L160*160*16	1000		2	2	38.8	77.6
2SCG14-3	L160*160*16	1995		2	2	77.4	154.9
2SCG14-4	L160*160*16	1995		2	2	77.4	154.9
2SCG14-5	L160*160*16	4000		2	2	155.2	310.5
2SCG14-6	L160*160*16	4000		2	2	155.2	310.5
2SCG14-7	L140*140*14	5950		2	2	174.9	349.9
2SCG14-8	L140*140*14	5950		2	2	174.9	349.9
2SCG14-9	L120*120*12	5896		2	2	127.4	254.7
2SCG14-10	L120*120*12	5896		2	2	127.4	254.7
2SCG14-11	L80*80*8	4361		2	2	42.1	84.3
2SCG14-12	L80*80*8	4361		2	2	42.1	84.3
2SCG14-15	L60*60*6	2387		4	4	12.9	51.8
2SCG14-15X	L60*60*6	2387		4	4	12.9	51.8
2SCG14-16	L60*60*6	2332		2	2	12.6	25.3
2SCG14-16X	L60*60*6	2332		2	2	12.6	25.3
2SCG14-17	L60*60*6	2262		2	2	12.3	24.5
2SCG14-17X	L60*60*6	2262		2	2	12.3	24.5
2SCG14-18	L60*60*6	2188		2	2	11.9	23.7
2SCG14-18X	L60*60*6	2188		2	2	11.9	23.7
2SCG14-19	L60*60*6	2115		2	2	11.5	22.9
2SCG14-19X	L60*60*6	2115		2	2	11.5	22.9
2SCG14-20	L60*60*6	2052		2	2	11.1	22.2
2SCG14-20X	L60*60*6	2052		2	2	11.1	22.2
2SCG14-21	L60*60*6	1949		2	2	10.6	21.1
2SCG14-21X	L60*60*6	1949		2	2	10.6	21.1
2SCG14-22	L60*60*6	1856		2	2	10.1	20.1
2SCG14-22X	L60*60*6	1856		2	2	10.1	20.1
2SCG14-23	L60*60*6	1763		2	2	9.6	19.1
2SCG14-23X	L60*60*6	1763		2	2	9.6	19.1
2SCG14-24	L80*80*8	930		4	4	9.0	35.9
2SCG14-25	L80*80*8	950		4	4	9.2	36.7
2SCG14-25X	L60*60*6	1013		4	4	3.8	15.3
2SCG14-26	L60*60*6	1643		2	2	8.9	17.8
2SCG14-27	L60*60*6	732		2	2	4.0	7.9
2SCG14-28	L60*60*6	1581		2	2	8.6	17.1
2SCG14-29	L60*60*6	471		2	2	2.6	5.1
2SCG14-30	L60*60*6	1713		2	2	9.3	18.6
2SCG14-30X	L60*60*6	1713		2	2	9.3	18.6
2SCG14-31	L60*60*6	1700		2	2	9.2	18.4
2SCG14-31X	L60*60*6	1700		2	2	9.2	18.4
2SCG14-32	L60*60*6	1740		2	2	9.4	18.9
2SCG14-32X	L60*60*6	1740		2	2	9.4	18.9
2SCG14-33	L60*60*6	1780		2	2	9.6	19.3
2SCG14-33X	L60*60*6	1780		2	2	9.6	19.3
2SCG14-34	L60*60*6	1820		2	2	9.9	19.7
2SCG14-34X	L60*60*6	1820		2	2	9.9	19.7
2SCG14-35	L60*60*6	1885		2	2	10.2	20.4
2SCG14-35X	L60*60*6	1885		2	2	10.2	20.4
2SCG14-36	L60*60*6	1910		4	4	10.4	41.4
2SCG14-36X	L60*60*6	1910		4	4	10.4	41.4
2SCG14-37	L60*60*6	1896		2	2	10.3	20.6
2SCG14-37X	L60*60*6	1896		2	2	10.3	20.6
2SCG14-38	L60*60*6	1230		2	2	6.7	13.3
2SCG14-38X	L60*60*6	1230		2	2	6.7	13.3
2SCG14-39	L80*80*8	1130		2	2	10.9	21.8
2SCG14-40	L60*60*6	1715		2	2	9.3	18.6
2SCG14-41	L60*60*6	876		2	2	4.7	9.5
2SCG14-42	L60*60*6	1622		2	2	8.8	17.6
2SCG14-43	L60*60*6	543		2	2	2.9	5.9
2SCG14-44	L60*60*6	1202		4	4	6.5	26.1
2SCG14-45	PL8	429	244	4	4	6.6	26.3
2SCG14-46	PL8	457	242	4	4	6.9	27.8
2SCG14-47	PL8	426	219	4	4	5.9	23.4
2SCG14-48	PL8	465	224	4	4	6.5	26.2
2SCG14-49	PL8	430	194	4	4	5.2	21.0
2SCG14-50	PL8	450	190	4	4	5.4	21.5
2SCG14-51	PL8	494	190	4	4	5.9	23.6
2SCG14-52	PL8	546	185	4	4	6.3	25.4
2SCG14-53	PL10	500	199	4	4	7.8	31.2
2SCG14-54	PL10	380	199	4	4	5.9	23.7
2SCG14-54X	PL10	247	185	2	2	3.6	7.2
2SCG14-55	PL8	687	224	4	4	9.7	38.7
2SCG14-56	PL8	652	224	4	4	9.2	36.7
2SCG14-57	PL8	581	205	4	4	7.5	29.9
2SCG14-58	PL8	581	205	4	4	7.5	29.9
2SCG14-59	PL8	540	185	4	4	6.3	25.1
2SCG14-60	PL8	490	185	8	8	5.7	45.5
2SCG14-61	PL8	512	189	4	4	6.1	24.3
2SCG14-62	PL10	480	470	4	4	17.7	70.8
2SCG14-63	PL10	470	380	4	4	14.0	56.1
2SCG14-64	PL10	681	185	1	1	9.9	9.9
2SCG14-65	PL8	158	138	8	8	1.4	11.0
2SCG14-66	PL15	565	150	8	8	10.0	79.8
2SCG14-67	PL15	565	140	8	8	9.3	74.5
2SCG14-68	PL15	495	130	8	8	7.6	60.6
2SCG14-69	PL12	495	120	8	8	5.6	44.8
2SCG14-69F	PL2	245	95	8	8	0.4	2.9
2SCG14-70	PL12	495	130	8	8	6.1	48.5
2SCG14-71	PL12	495	120	8	8	5.6	44.8
2SCG14-72	PL12	465	100	8	8	4.4	35.0
2SCG14-73	PL12	465	90	8	8	3.9	31.5
2SCG14-73F	PL2	230	80	8	8	0.3	2.3
2SCG14-75	PL8	500	100	1	1	3.1	3.1
2SCG14-76	UNP120	50		2	2	0.7	1.3
2SCG14-77	L60*60*6	844		2	2	4.6	9.1
2SCG14-78	L60*60*6	892		2	2	4.8	9.7
2SCG14-90	PL25	420	420	4	4	34.6	138.5
2SCG14-91	PL12	460	300	4	4	13.0	52.0
2SCG14-92	PL12	370	300	4	4	10.5	41.8
2SCG14-93	PL12	300	148	12	12	4.2	50.2
2SCG14-94	PL12	300	148	8	8	4.2	33.5
2SCG14-95	PL12	300	99	4	4	2.8	11.2
2SCG14-96	PL12	300	125	8	8	3.5	28.3
FPL8	PL8	50	50	45	45	0.2	10.6
					TOTAL WEIGHT (Kg)		4990.9
					WEIGHT		4990.9

2SCG8		
SIZE	QTY	TOTALQ
M16*45	680	8160
M16*50	197	2364
M16*60	272	3264
M16*180	94	1128

NOTES

1- ALL DIMENSIONS ARE IN mm.
2- STEEL : ST-37
3- ALL STRUCTURAL SECTIONS ARE HOT-DIP GALVANIZED ACC. TO ASTM A123
4- ALL ANGLES ARE FROM MILD STEEL WITH YIELD STRENGTH 2400 Kg/cm^2.
5- M-16 BOLTS ARE GRADE 8.8
6- ALL BOLTS,NUTS,WASHERS ARE HOT-DIP GALVANIZED ACC. TO ASTM A153
7-FOR EACH BOLT: ONE NUT, TWO WASHER AND ONE STANDARD SPRING WASHER ARE NEDDED.
8- S IS SHIELD WIRE ATTACHMENT POINT TO COLUMN (U-BOLT M18-70)

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

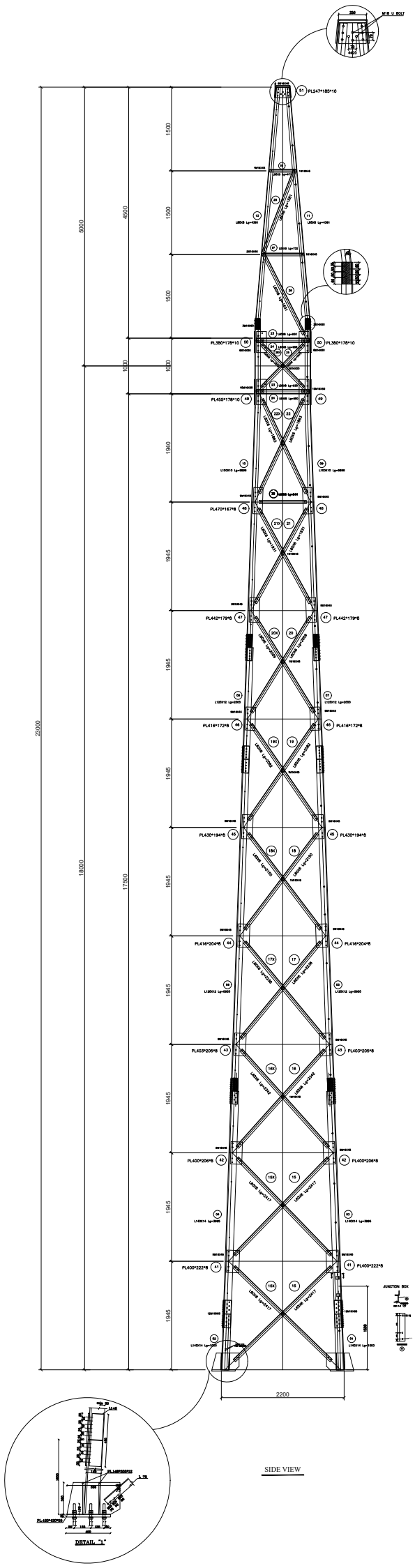
Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: NORTHERN SITE INTERFACE 400/230 KV SUBSTATION

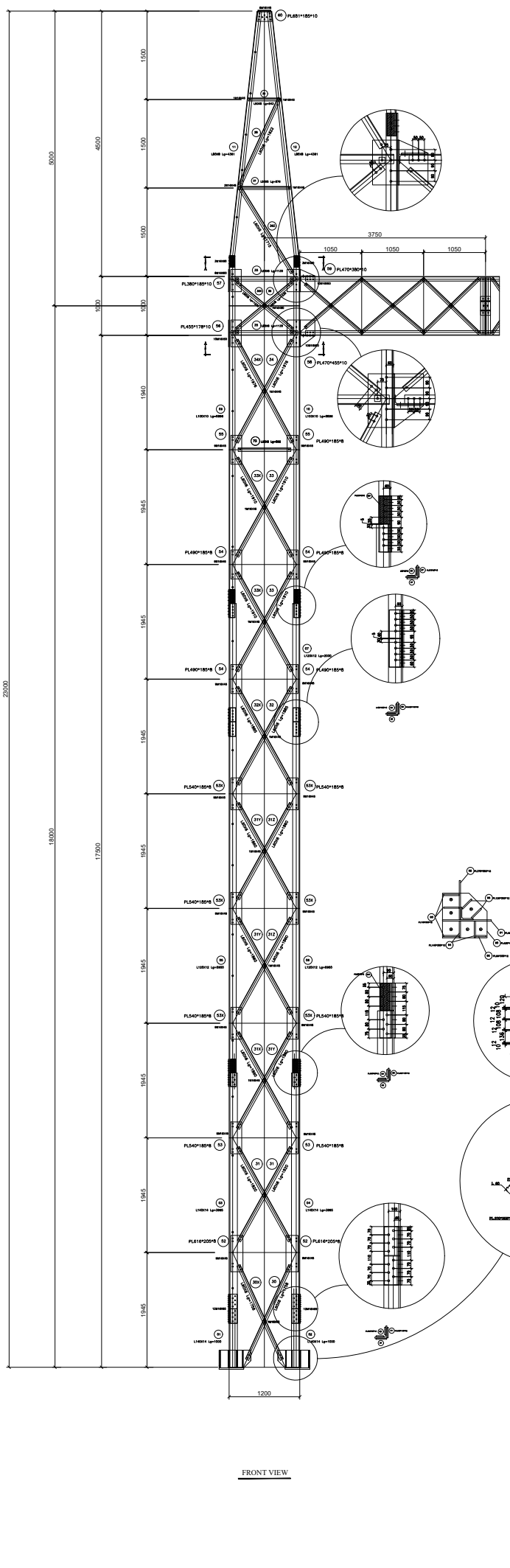
TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG14"

	NAME	PROJECT CODE:		COMPUTER NO. :
DESIGNED:	–	–		–
DRAWN:	–			
CHECKED:	Z.KH	SCALE: –	SIZE: A1	DRAWING NO. : –
APPROVED:	–			

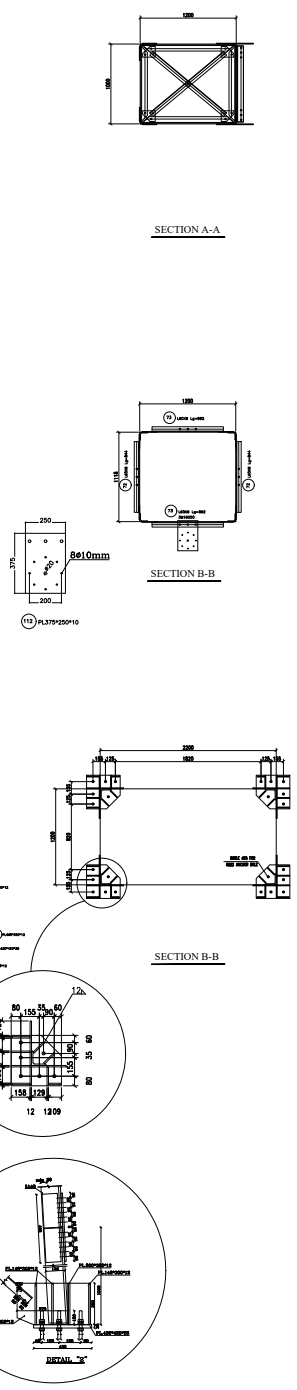
NO : 1



SIDE VIEW



FRONT VIEW



MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG13-1	L140*140*14	1000		2	4	29.4	117.6
2SCG13-2	L140*140*14	1000		2	4	29.4	117.6
2SCG13-3	L140*140*14	3995		2	4	117.5	469.8
2SCG13-4	L140*140*14	3995		2	4	117.5	469.8
2SCG13-5	L120*120*12	5950		2	4	128.5	514.1
2SCG13-6	L120*120*12	5950		2	4	128.5	514.1
2SCG13-7	L120*120*12	2000		2	4	43.2	172.8
2SCG13-8	L120*120*12	2000		2	4	43.2	172.8
2SCG13-9	L100*100*10	5896		2	4	89.0	356.1
2SCG13-10	L100*100*10	5896		2	4	89.0	356.1
2SCG13-11	L80*80*8	4361		2	4	42.1	168.5
2SCG13-12	L80*80*8	4361		2	4	42.1	168.5
2SCG13-15	L60*60*6	2417		8	16	13.1	209.6
2SCG13-15X	L60*60*6	2417		8	16	13.1	209.6
2SCG13-16	L60*60*6	2342		2	4	12.7	50.8
2SCG13-16X	L60*60*6	2342		2	4	12.7	50.8
2SCG13-17	L60*60*6	2238		2	4	12.1	48.5
2SCG13-17X	L60*60*6	2238		2	4	12.1	48.5
2SCG13-18	L60*60*6	2150		2	4	11.7	46.6
2SCG13-18X	L60*60*6	2150		2	4	11.7	46.6
2SCG13-19	L60*60*6	2082		2	4	11.3	45.1
2SCG13-19X	L60*60*6	2082		2	4	11.3	45.1
2SCG13-20	L60*60*6	2009		2	4	10.9	43.6
2SCG13-20X	L60*60*6	2009		2	4	10.9	43.6
2SCG13-21	L60*60*6	1931		2	4	10.5	41.9
2SCG13-21X	L60*60*6	1931		2	4	10.5	41.9
2SCG13-22	L60*60*6	1863		2	4	10.1	40.4
2SCG13-22X	L60*60*6	1863		2	4	10.1	40.4
2SCG13-23	L80*80*8	930		4	8	9.0	71.9
2SCG13-24	L80*80*8	950		2	4	9.2	36.7
2SCG13-25	L50*50*5	1073		2	4	4.0	16.2
2SCG13-25X	L50*50*5	1073		2	4	4.0	16.2
2SCG13-26	L60*60*6	1631		2	4	8.8	35.4
2SCG13-27	L50*50*5	732		2	4	2.8	11.0
2SCG13-28	L60*60*6	1581		2	4	8.6	34.3
2SCG13-29	L50*50*5	471		2	4	1.8	7.1
2SCG13-30	L60*60*6	1758		2	4	9.5	38.1
2SCG13-30X	L60*60*6	1758		2	4	9.5	38.1
2SCG13-31	L60*60*6	1860		8	16	10.1	161.3
2SCG13-31X	L60*60*6	1860		8	16	10.1	161.3
2SCG13-32	L60*60*6	1885		2	4	10.2	40.9
2SCG13-32X	L60*60*6	1885		2	4	10.2	40.9
2SCG13-33	L60*60*6	1910		4	8	10.4	82.8
2SCG13-33X	L60*60*6	1910		4	8	10.4	82.8
2SCG13-34	L60*60*6	1976		2	4	10.7	42.8
2SCG13-34X	L60*60*6	1976		2	4	10.7	42.8
2SCG13-35	L80*80*8	1130		4	8	10.9	87.3
2SCG13-36	L80*80*8	1230		2	4	11.9	47.5
2SCG13-36X	L80*80*8	1230		2	4	11.9	47.5
2SCG13-36Z	L60*60*6	1715		2	4	9.3	37.2
2SCG13-37	L50*50*5	876		2	4	3.3	13.2
2SCG13-38	L60*60*6	1622		2	4	8.8	35.2
2SCG13-39	L50*50*5	543		2	4	2.0	8.2
2SCG13-40	L60*60*6	1202		2	4	6.5	26.1
2SCG13-40X	L60*60*6	1202		2	4	6.5	26.1
2SCG13-41	PL8	400	222	4	8	5.6	44.6
2SCG13-42	PL8	400	206	4	8	5.2	41.4
2SCG13-43	PL8	40	205	4	8	0.5	4.1
2SCG13-44	PL8	416	204	4	8	5.3	42.6
2SCG13-45	PL8	430	194	4	8	5.2	41.9
2SCG13-46	PL8	416	172	4	8	4.5	35.9
2SCG13-47	PL8	442	179	4	8	5.0	39.7
2SCG13-48	PL8	470	167	4	8	4.9	39.4
2SCG13-49	PL10	455	178	4	8	6.4	50.9
2SCG13-50	PL10	380	178	4	8	5.3	42.5
2SCG13-51	PL10	247	185	2	4	3.6	14.3
2SCG13-52	PL8	616	205	4	8	7.9	63.4
2SCG13-53	PL8	540	185	16	32	6.3	200.8
2SCG13-54	PL8	490	185	8	16	5.7	91.1
2SCG13-55	PL8	490	185	4	8	5.7	45.5
2SCG13-56	PL10	455	178	2	4	6.4	25.4
2SCG13-57	PL10	380	185	2	4	5.5	22.1
2SCG13-58	PL10	470	455	2	4	16.8	67.1
2SCG13-59	PL10	470	380	2	4	14.0	56.1
2SCG13-60	PL10	681	185	1	2	9.9	19.8
2SCG13-61	PL8	158	135	8	16	1.3	21.4
2SCG13-70	PL8	500	100	1	2	3.1	6.3
2SCG13-71	UNP120	50		2	4	0.7	2.7
2SCG13-72	L60*60*6	844		2	4	4.6	18.3
2SCG13-73	L60*60*6	892		2	4	4.8	19.3
2SCG13-74	PL12	495	110	8	16	5.1	82.1
2SCG13-75	PL12	495	90	8	16	4.2	67.1
2SCG13-76	PL12	465	100	8	16	4.4	70.1
2SCG13-77	PL12	465	90	8	16	3.9	63.1
2SCG13-77F	PL2	230	80	8	16	0.3	4.6
2SCG13-78	PL10	425	90	8	16	3.0	48.0
2SCG13-79	L100*100*10	425		4	8	6.4	51.3
2SCG13-79F	PL2	235	60	8	16	0.2	3.5
2SCG13-80	PL10	475	90	8	16	3.4	53.7
2SCG13-80F	PL2	235	60	8	16	0.2	3.5
2SCG13-81	L80*80*8	475		4	8	4.6	36.7
2SCG13-90	PL25	420	420	4	8	34.6	276.9
2SCG13-91	PL12	460	300	4	8	13.0	104.0
2SCG13-92	PL12	370	300	4	8	10.5	83.6
2SCG13-93	PL12	300	148	12	24	4.2	100.4
2SCG13-94	PL12	300	148	8	16	4.2	66.9
2SCG13-95	PL12	300	99	4	8	2.8	22.4
2SCG13-96	PL12	300	125	8	16	3.5	56.5
FPL8	PL8	50	50	45	90	0.2	21.2
					TOTAL WEIGHT (Kg)		8212.3
					WEIGHT		4106.2

2SCG8		
SIZE	QTY	TOTAL Q
M16*45	680	8160
M16*50	197	2364
M16*60	272	3264
M16*180	94	1128

NOTES

1- ALL DIMENSIONS ARE IN mm.
2- STEEL : ST-37
3- ALL STRUCTURAL SECTIONS ARE HOT-DIP GALVANIZED ACC. TO ASTM A123
4- ALL ANGLES ARE FROM MILD STEEL WITH YIELD STRENGTH 2400 Kg/cm^2.
5- M-16 BOLTS ARE GRADE 8.8
6- ALL BOLTS,NUTS,WASHERS ARE HOT-DIP GALVANIZED ACC. TO ASTM A153
7-FOR EACH BOLT: ONE NUT, TWO WASHER AND ONE STANDARD SPRING WASHER ARE NEDDED.
8- S IS SHIELD WIRE ATTACHMENT POINT TO COLUMN (U-BOLT M18-70)

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

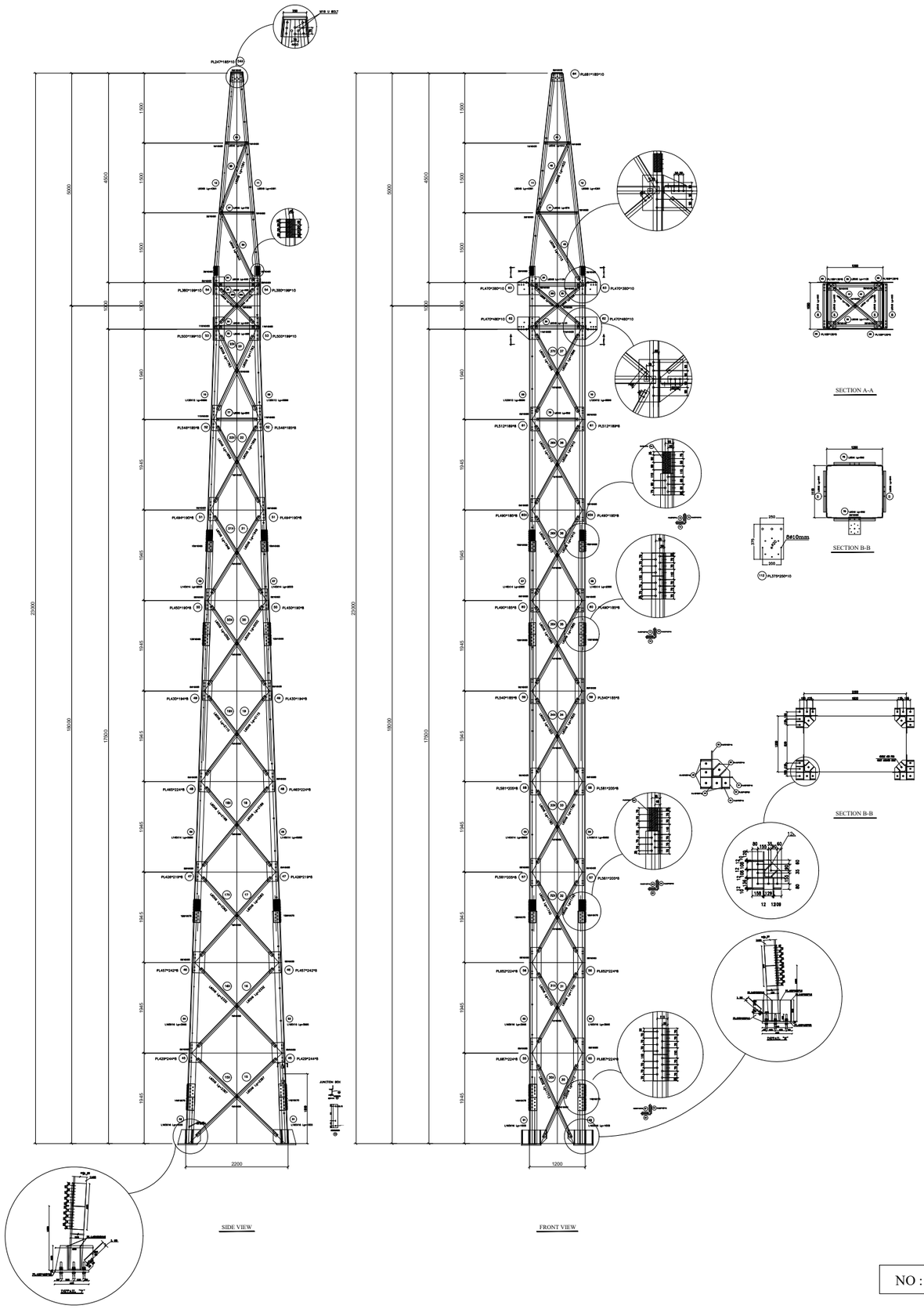
Consulting: GHODS NIRDO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG13"

	NAME	PROJECT CODE:		COMPUTER NO. :
DESIGNED:	–	—		—
DRAWN:	–			
CHECKED:	Z.KH	SCALE: –	SIZE: A1	DRAWING NO. : —
APPROVED:	–			

NO : 2



MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG12-1	L160*160*16	1000		2	2	38.8	77.6
2SCG12-2	L160*160*16	1000		2	2	38.8	77.6
2SCG12-3	L160*160*16	3995		2	2	155.0	310.1
2SCG12-4	L160*160*16	3995		2	2	155.0	310.1
2SCG12-5	L140*140*14	5950		2	2	174.9	349.9
2SCG12-6	L140*140*14	5950		2	2	174.9	349.9
2SCG12-7	L140*140*14	2000		2	2	58.8	117.6
2SCG12-8	L140*140*14	2000		2	2	58.8	117.6
2SCG12-9	L120*120*12	5896		2	2	127.4	254.7
2SCG12-10	L120*120*12	5896		2	2	127.4	254.7
2SCG12-11	L80*80*8	4361		2	2	42.1	84.3
2SCG12-12	L80*80*8	4361		2	2	42.1	84.3
2SCG12-15	L60*60*6	2387		4	4	12.9	51.8
2SCG12-15X	L60*60*6	2387		4	4	12.9	51.8
2SCG12-16	L60*60*6	2332		2	2	12.6	25.3
2SCG12-16X	L60*60*6	2332		2	2	12.6	25.3
2SCG12-17	L60*60*6	2262		2	2	12.3	24.5
2SCG12-17X	L60*60*6	2262		2	2	12.3	24.5
2SCG12-18	L60*60*6	2188		2	2	11.9	23.7
2SCG12-18X	L60*60*6	2188		2	2	11.9	23.7
2SCG12-19	L60*60*6	2115		2	2	11.5	22.9
2SCG12-19X	L60*60*6	2115		2	2	11.5	22.9
2SCG12-20	L60*60*6	2052		2	2	11.1	22.2
2SCG12-20X	L60*60*6	2052		2	2	11.1	22.2
2SCG12-21	L60*60*6	1949		2	2	10.6	21.1
2SCG12-21X	L60*60*6	1949		2	2	10.6	21.1
2SCG12-22	L60*60*6	1856		2	2	10.1	20.1
2SCG12-22X	L60*60*6	1856		2	2	10.1	20.1
2SCG12-23	L60*60*6	1763		2	2	9.6	19.1
2SCG12-23X	L60*60*6	1763		2	2	9.6	19.1
2SCG12-24	L80*80*8	930		4	4	9.0	35.9
2SCG12-25	L80*80*8	950		4	4	9.2	36.7
2SCG12-25X	L60*60*6	1013		4	4	3.8	15.3
2SCG12-26	L60*60*6	1643		2	2	8.9	17.8
2SCG12-27	L60*60*6	732		2	2	4.0	7.9
2SCG12-28	L60*60*6	1581		2	2	8.6	17.1
2SCG12-29	L60*60*6	471		2	2	2.6	5.1
2SCG12-30	L60*60*6	1713		2	2	9.3	18.6
2SCG12-30X	L60*60*6	1713		2	2	9.3	18.6
2SCG12-31	L60*60*6	1700		2	2	9.2	18.4
2SCG12-31X	L60*60*6	1700		2	2	9.2	18.4
2SCG12-32	L60*60*6	1740		2	2	9.4	18.9
2SCG12-32X	L60*60*6	1740		2	2	9.4	18.9
2SCG12-33	L60*60*6	1780		2	2	9.6	19.3
2SCG12-33X	L60*60*6	1780		2	2	9.6	19.3
2SCG12-34	L60*60*6	1820		2	2	9.9	19.7
2SCG12-34X	L60*60*6	1820		2	2	9.9	19.7
2SCG12-35	L60*60*6	1885		2	2	10.2	20.4
2SCG12-35X	L60*60*6	1885		2	2	10.2	20.4
2SCG12-36	L60*60*6	1910		4	4	10.4	41.4
2SCG12-36X	L60*60*6	1910		4	4	10.4	41.4
2SCG12-37	L60*60*6	1896		2	2	10.3	20.6
2SCG12-37X	L60*60*6	1896		2	2	10.3	20.6
2SCG12-38	L60*60*6	1230		2	2	6.7	13.3
2SCG12-38X	L60*60*6	1230		2	2	6.7	13.3
2SCG12-39	L80*80*8	1130		2	2	10.9	21.8
2SCG12-40	L60*60*6	1715		2	2	9.3	18.6
2SCG12-41	L60*60*6	876		2	2	4.7	9.5
2SCG12-42	L60*60*6	1622		2	2	8.8	17.6
2SCG12-43	L60*60*6	543		2	2	2.9	5.9
2SCG12-44	L60*60*6	1202		4	4	6.5	26.1
2SCG12-45	PI8	429	244	4	4	6.6	26.3
2SCG12-46	PI8	457	242	4	4	6.9	27.8
2SCG12-47	PI8	426	219	4	4	5.9	23.4
2SCG12-48	PI8	465	224	4	4	6.5	26.2
2SCG12-49	PI8	430	194	4	4	5.2	21.0
2SCG12-50	PI8	450	190	4	4	5.4	21.5
2SCG12-51	PI8	494	190	4	4	5.9	23.6
2SCG12-52	PI8	546	185	4	4	6.3	25.4
2SCG12-53	PL10	500	199	4	4	7.8	31.2
2SCG12-54	PL10	380	199	4	4	5.9	23.7
2SCG12-54X	PL10	247	185	2	2	3.6	7.2
2SCG12-55	PI8	687	224	4	4	9.7	38.7
2SCG12-56	PI8	652	224	4	4	9.2	36.7
2SCG12-57	PI8	581	205	4	4	7.5	29.9
2SCG12-58	PI8	581	205	4	4	7.5	29.9
2SCG12-59	PI8	540	185	4	4	6.3	25.1
2SCG12-60	PI8	490	185	8	8	5.7	45.5
2SCG12-61	PI8	512	189	4	4	6.1	24.3
2SCG12-62	PL10	480	470	4	4	17.7	70.8
2SCG12-63	PL10	470	380	4	4	14.0	56.1
2SCG12-64	PL10	681	185	1	1	9.9	9.9
2SCG12-65	PI8	158	138	8	8	1.4	11.0
2SCG12-66	PL15	565	150	8	8	10.0	79.8
2SCG12-67	PL15	565	140	8	8	9.3	74.5
2SCG12-68	PL15	495	130	8	8	7.6	60.6
2SCG12-69	PL12	495	120	8	8	5.6	44.8
2SCG12-69F	PI2	245	95	8	8	0.4	2.9
2SCG12-70	PL12	495	130	8	8	6.1	48.5
2SCG12-71	PL12	495	120	8	8	5.6	44.8
2SCG12-72	PL12	465	100	8	8	4.4	35.0
2SCG12-73	PL12	465	90	8	8	3.9	31.5
2SCG12-73F	PI2	230	80	8	8	0.3	2.3
2SCG12-75	PI8	500	100	1	1	3.1	3.1
2SCG12-76	UNP120	50		2	2	0.7	1.3
2SCG12-77	L60*60*6	844		2	2	4.6	9.1
2SCG12-78	L60*60*6	892		2	2	4.8	9.7
2SCG12-90	PL25	420	420	4	4	34.6	138.5
2SCG12-91	PL12	460	300	4	4	13.0	52.0
2SCG12-92	PL12	370	300	4	4	10.5	41.8
2SCG12-93	PL12	300	148	12	12	4.2	50.2
2SCG12-94	PL12	300	148	8	8	4.2	33.5
2SCG12-95	PL12	300	99	4	4	2.8	11.2
2SCG12-96	PL12	300	125	8	8	3.5	28.3
FPI8	PI8	50	50	45	45	0.2	10.6
					TOTAL WEIGHT (Kg)		4915.6
					WEIGHT		4915.6

2SCG3		
SIZE	QTY	TOTAL Q
M16*45	680	8160
M16*50	197	2364
M16*60	272	3264
M16*100	94	1128

1- ALL DIMENSIONS ARE IN mm.
2- STEEL : ST-37
3- ALL STRUCTURAL SECTIONS ARE HOT-DIP GALVANIZED ACC. TO ASTM A123
4- ALL ANGLES ARE FROM MILD STEEL WITH YIELD STRENGTH 2400 Kg/cm^2.
5- M-16 BOLTS ARE GRADE 8.8
6- ALL BOLTS,NUTS,WASHERS ARE HOT-DIP GALVANIZED ACC. TO ASTM A153
7-FOR EACH BOLT: ONE NUT, TWO WASHER AND ONE STANDARD SPRING WASHER ARE NEDDED.
8- S IS SHIELD WIRE ATTACHMENT POINT TO COLUMN (U-BOLT M18-70)

NO : 1

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG12"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

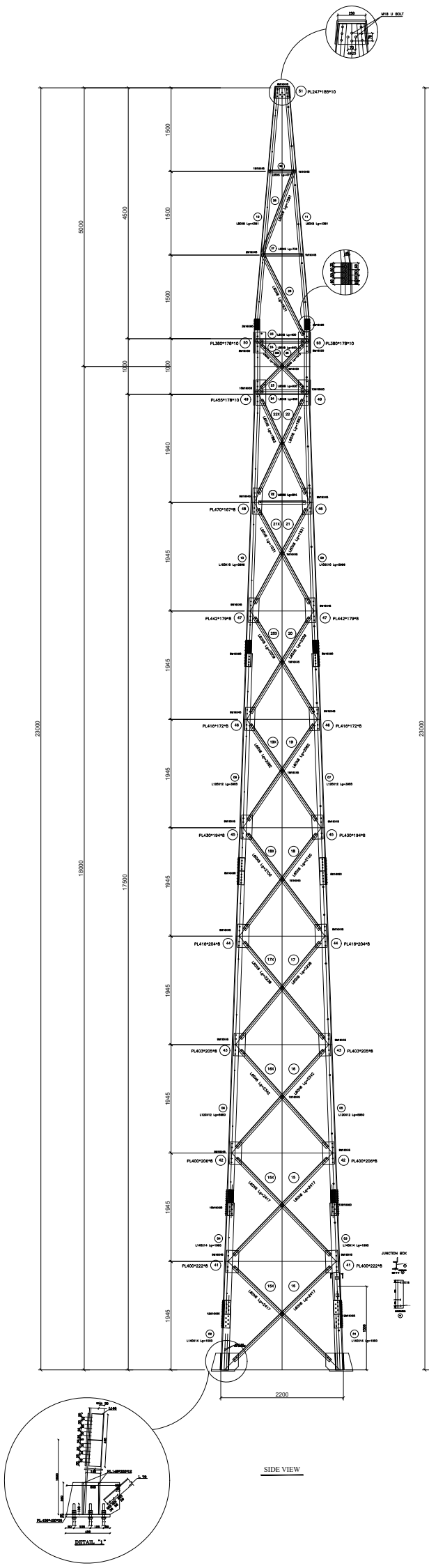
PROJECT CODE: –

COMPUTER NO. : –

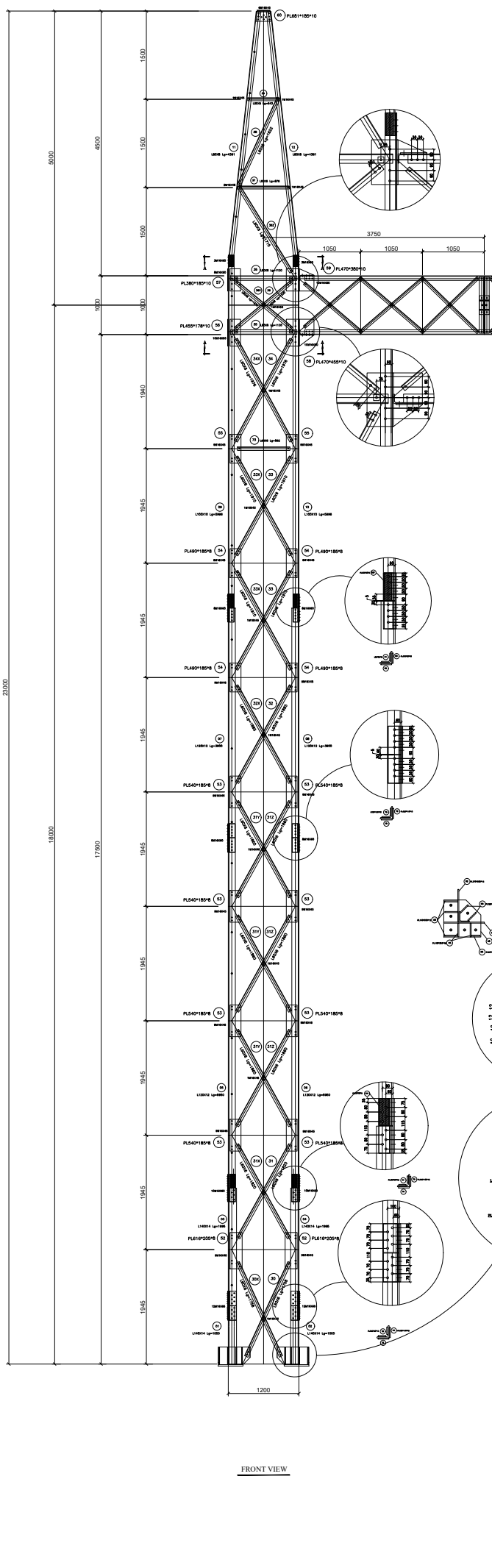
SCALE: –

SIZE: A1

DRAWING NO. : –

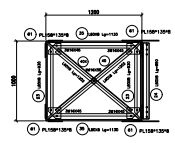


SIDE VIEW

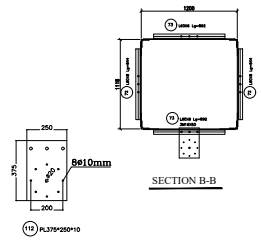


FRONT VIEW

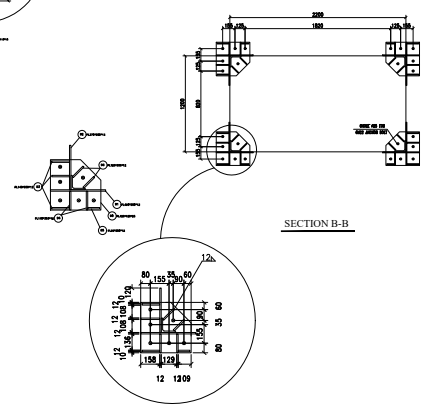
DETAIL "1"



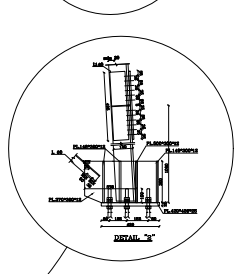
SECTION A-A



SECTION B-B



SECTION B-B



DETAIL "2"

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG11-1	L140*140*14	1000		2	4	29.4	117.6
2SCG11-2	L140*140*14	1000		2	4	29.4	117.6
2SCG11-3	L140*140*14	1995		2	4	58.7	234.6
2SCG11-4	L140*140*14	1995		2	4	58.7	234.6
2SCG11-5	L120*120*12	5950		2	4	128.5	514.1
2SCG11-6	L120*120*12	5950		2	4	128.5	514.1
2SCG11-7	L120*120*12	3900		2	4	84.2	337.0
2SCG11-8	L120*120*12	3900		2	4	84.2	337.0
2SCG11-9	L100*100*10	5996		2	4	90.5	362.2
2SCG11-10	L100*100*10	5996		2	4	90.5	362.2
2SCG11-11	L80*80*8	4361		2	4	42.1	168.5
2SCG11-12	L80*80*8	4361		2	4	42.1	168.5
2SCG11-15	L60*60*6	2447		4	8	13.3	106.1
2SCG11-15X	L60*60*6	2447		4	8	13.3	106.1
2SCG11-16	L60*60*6	2342		2	4	12.7	50.8
2SCG11-16X	L60*60*6	2342		2	4	12.7	50.8
2SCG11-17	L60*60*6	2238		2	4	12.1	48.5
2SCG11-17X	L60*60*6	2238		2	4	12.1	48.5
2SCG11-18	L60*60*6	2150		2	4	11.7	46.6
2SCG11-18X	L60*60*6	2150		2	4	11.7	46.6
2SCG11-19	L60*60*6	2082		2	4	11.3	45.1
2SCG11-19X	L60*60*6	2082		2	4	11.3	45.1
2SCG11-20	L60*60*6	2009		2	4	10.9	43.6
2SCG11-20X	L60*60*6	2009		2	4	10.9	43.6
2SCG11-21	L60*60*6	1931		2	4	10.5	41.9
2SCG11-21X	L60*60*6	1931		2	4	10.5	41.9
2SCG11-22	L60*60*6	1863		2	4	10.1	40.4
2SCG11-22X	L60*60*6	1863		2	4	10.1	40.4
2SCG11-23	L80*80*8	930		4	8	9.0	71.9
2SCG11-24	L80*80*8	950		2	4	9.2	36.7
2SCG11-25	L50*50*5	1073		2	4	4.0	16.2
2SCG11-25X	L50*50*5	1073		2	4	4.0	16.2
2SCG11-26	L60*60*6	1631		2	4	8.8	35.4
2SCG11-27	L50*50*5	732		2	4	2.8	11.0
2SCG11-28	L60*60*6	1581		2	4	8.6	34.3
2SCG11-29	L50*50*5	471		2	4	1.8	7.1
2SCG11-30	L60*60*6	1816		2	4	9.8	39.4
2SCG11-30X	L60*60*6	1816		2	4	9.8	39.4
2SCG11-31	L60*60*6	1860		8	16	10.1	161.3
2SCG11-31X	L60*60*6	1860		8	16	10.1	161.3
2SCG11-32	L60*60*6	1885		2	4	10.2	40.9
2SCG11-32X	L60*60*6	1885		2	4	10.2	40.9
2SCG11-33	L60*60*6	1910		4	8	10.4	82.8
2SCG11-33X	L60*60*6	1910		4	8	10.4	82.8
2SCG11-34	L60*60*6	1976		2	4	10.7	42.8
2SCG11-34X	L60*60*6	1976		2	4	10.7	42.8
2SCG11-35	L80*80*8	1130		4	8	10.9	87.3
2SCG11-36	L80*80*8	1230		2	4	11.9	47.5
2SCG11-36X	L80*80*8	1230		2	4	11.9	47.5
2SCG11-36Z	L60*60*6	1715		2	4	9.3	37.2
2SCG11-37	L50*50*5	876		2	4	3.3	13.2
2SCG11-38	L60*60*6	1622		2	4	8.8	35.2
2SCG11-39	L50*50*5	543		2	4	2.0	8.2
2SCG11-40	L60*60*6	1202		2	4	6.5	26.1
2SCG11-40X	L60*60*6	1202		2	4	6.5	26.1
2SCG11-41	PL8	400	222	4	8	5.6	44.6
2SCG11-42	PL8	400	206	4	8	5.2	41.4
2SCG11-43	PL8	40	205	4	8	0.5	4.1
2SCG11-44	PL8	416	204	4	8	5.3	42.6
2SCG11-45	PL8	430	194	4	8	5.2	41.9
2SCG11-46	PL8	416	172	4	8	4.5	35.9
2SCG11-47	PL8	442	179	4	8	5.0	39.7
2SCG11-48	PL8	470	167	4	8	4.9	39.4
2SCG11-49	PL10	455	178	4	8	6.4	50.9
2SCG11-50	PL10	380	178	4	8	5.3	42.5
2SCG11-51	PL10	247	185	2	4	3.6	14.3
2SCG11-52	PL8	616	205	4	8	7.9	63.4
2SCG11-53	PL8	540	185	16	32	6.3	200.8
2SCG11-54	PL8	490	185	8	16	5.7	91.1
2SCG11-55	PL8	490	185	4	8	5.7	45.5
2SCG11-56	PL10	455	178	2	4	6.4	25.4
2SCG11-57	PL10	380	185	2	4	5.5	22.1
2SCG11-58	PL10	470	455	2	4	16.8	67.1
2SCG11-59	PL10	470	380	2	4	14.0	56.1
2SCG11-60	PL10	681	185	1	2	9.9	19.8
2SCG11-61	PL8	158	135	8	16	1.3	21.4
2SCG11-70	PL8	500	100	1	2	3.1	6.3
2SCG11-71	UNP120	50		2	4	0.7	2.7
2SCG11-72	L60*60*6	844		2	4	4.6	18.3
2SCG11-73	L60*60*6	892		2	4	4.8	19.3
2SCG11-74	PL12	495	110	8	16	5.1	82.1
2SCG11-75	PL12	495	90	8	16	4.2	67.1
2SCG11-76	PL12	465	100	8	16	4.4	70.1
2SCG11-77	PL12	465	90	8	16	3.9	63.1
2SCG11-77F	PL2	230	80	8	16	0.3	4.6
2SCG11-78	PL10	425	90	8	16	3.0	48.0
2SCG11-79	L100*100*10	425		4	8	6.4	51.3
2SCG11-79F	PL2	235	60	8	16	0.2	3.5
2SCG11-80	PL10	475	90	8	16	3.4	53.7
2SCG11-80F	PL2	235	60	8	16	0.2	3.5
2SCG11-81	L80*80*8	475		4	8	4.6	36.7
2SCG11-90	PL25	420	420	4	8	34.6	276.9
2SCG11-91	PL12	460	300	4	8	13.0	104.0
2SCG11-92	PL12	370	300	4	8	10.5	83.6
2SCG11-93	PL12	300	148	12	24	4.2	100.4
2SCG11-94	PL12	300	148	8	16	4.2	66.9
2SCG11-95	PL12	300	99	4	8	2.8	22.4
2SCG11-96	PL12	300	125	8	16	3.5	56.5
FPL8	PL8	50	50	45	90	0.2	21.2
					TOTAL WEIGHT (Kg)		7877.8
					WEIGHT		3938.9

25CG3		
SIZE	QTY	TOTALQ
M16*45	680	8160
M16*50	197	2364
M16*60	272	3264
M16*180	94	1128

NOTES

1- ALL DIMENSIONS ARE IN mm.
2- STEEL : ST-37
3- ALL STRUCTURAL SECTIONS ARE HOT-DIP GALVANIZED ACC. TO ASTM A123
4- ALL ANGLES ARE FROM MILD STEEL WITH YIELD STRENGTH 2400 Kg/cm^2.
5- M-16 BOLTS ARE GRADE 8.8
6- ALL BOLTS,NUTS,WASHERS ARE HOT-DIP GALVANIZED ACC. TO ASTM A153
7-FOR EACH BOLT: ONE NUT, TWO WASHER AND ONE STANDARD SPRING WASHER ARE NEDDED.
8- S IS SHIELD WIRE ATTACHMENT POINT TO COLUMN (U-BOLT M18-70)

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

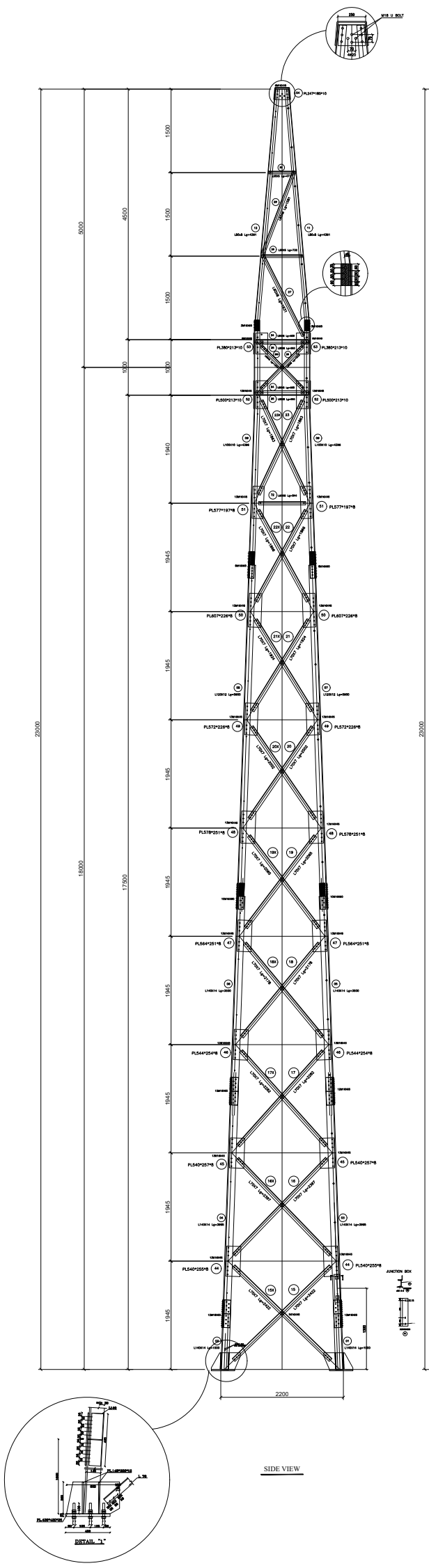
Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

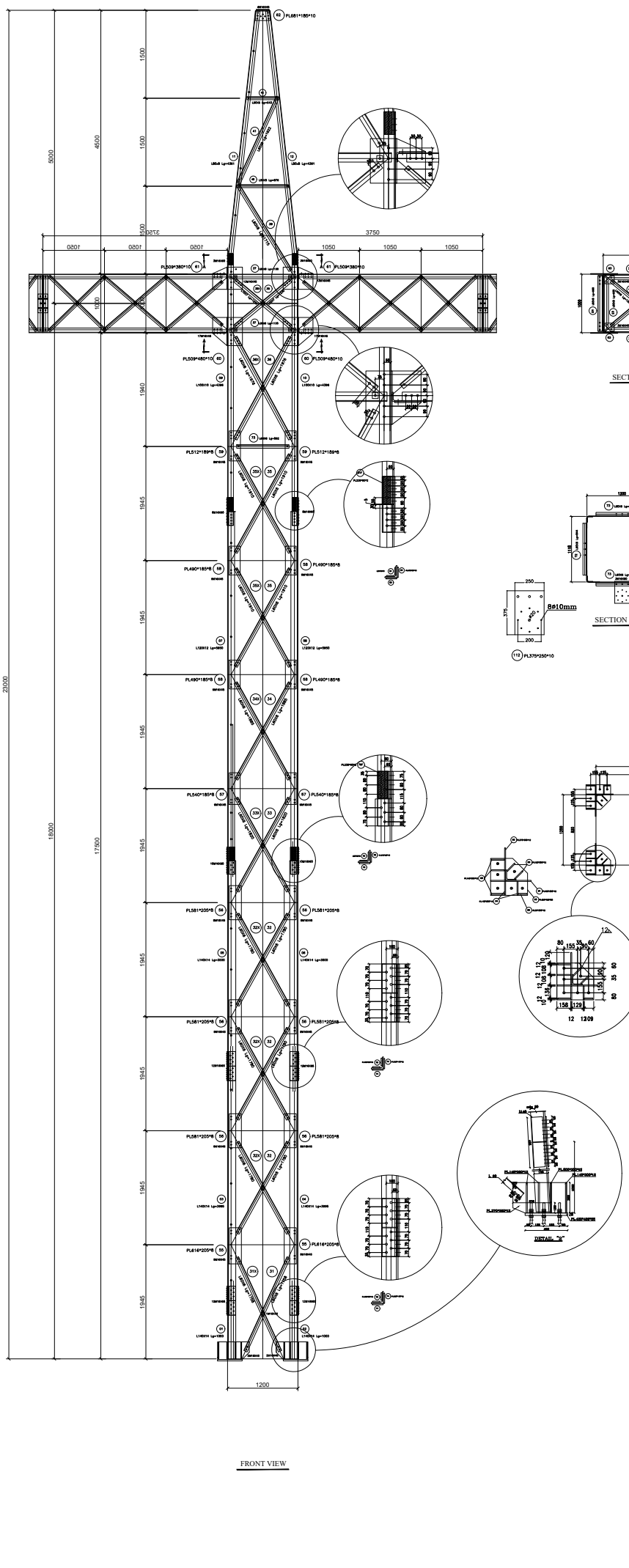
TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG11"

	NAME	PROJECT CODE:		COMPUTER NO. :
DESIGNED:	–	–		–
DRAWN:	–			
CHECKED:	Z.KH	SCALE: –	SIZE: A1	DRAWING NO. : –
APPROVED:	–			

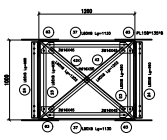
NO : 2



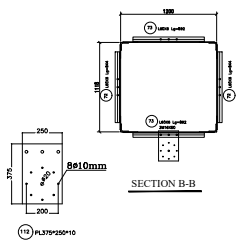
SIDE VIEW



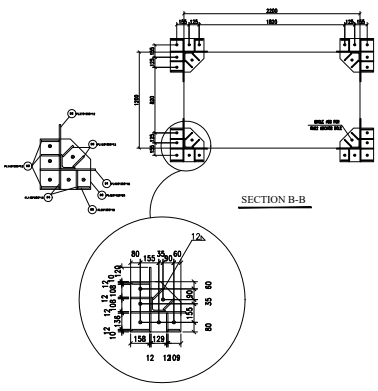
FRONT VIEW



SECTION A-A



SECTION B-B



SECTION B-B

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG10-1	L140*140*14	1000		2	2	29.4	58.8
2SCG10-2	L140*140*14	1000		2	2	29.4	58.8
2SCG10-3	L140*140*14	3995		2	2	117.5	234.9
2SCG10-4	L140*140*14	3995		2	2	117.5	234.9
2SCG10-5	L140*140*14	3500		2	2	102.9	205.8
2SCG10-6	L140*140*14	3500		2	2	102.9	205.8
2SCG10-7	L120*120*12	5950		2	2	128.5	257.0
2SCG10-8	L120*120*12	5950		2	2	128.5	257.0
2SCG10-9	L100*100*10	4396		2	2	66.4	132.8
2SCG10-10	L100*100*10	4396		2	2	66.4	132.8
2SCG10-11	L80*80*8	4361		2	2	42.1	84.3
2SCG10-12	L80*80*8	4361		2	2	42.1	84.3
2SCG10-15	L70*70*7	2422		4	4	17.9	71.5
2SCG10-15X	L70*70*7	2422		4	4	17.9	71.5
2SCG10-16	L70*70*7	2397		2	2	17.7	35.4
2SCG10-16X	L70*70*7	2397		2	2	17.7	35.4
2SCG10-17	L70*70*7	2282		2	2	16.8	33.7
2SCG10-17X	L70*70*7	2282		2	2	16.8	33.7
2SCG10-18	L70*70*7	2178		2	2	16.1	32.1
2SCG10-18X	L70*70*7	2178		2	2	16.1	32.1
2SCG10-19	L70*70*7	2065		2	2	15.2	30.5
2SCG10-19X	L70*70*7	2065		2	2	15.2	30.5
2SCG10-20	L70*70*7	2002		2	2	14.8	29.5
2SCG10-20X	L70*70*7	2002		2	2	14.8	29.5
2SCG10-21	L70*70*7	1924		2	2	14.2	28.4
2SCG10-21X	L70*70*7	1924		2	2	14.2	28.4
2SCG10-22	L70*70*7	1866		2	2	13.8	27.5
2SCG10-22X	L70*70*7	1866		2	2	13.8	27.5
2SCG10-23	L70*70*7	1863		4	4	13.7	55.0
2SCG10-23X	L70*70*7	1863		4	4	13.7	55.0
2SCG10-24	L80*80*8	930		4	4	9.0	35.9
2SCG10-25	L80*80*8	950		4	4	9.2	36.7
2SCG10-26	L60*60*6	1073		2	2	5.8	11.6
2SCG10-26X	L60*60*6	1073		2	2	5.8	11.6
2SCG10-27	L60*60*6	1631		2	2	8.8	17.7
2SCG10-28	L50*50*5	732		2	2	2.8	5.5
2SCG10-29	L60*60*6	1581		2	2	8.6	17.1
2SCG10-30	L50*50*5	471		2	2	1.8	3.6
2SCG10-31	L60*60*6	1758		2	2	9.5	19.1
2SCG10-31X	L60*60*6	1758		2	2	9.5	19.1
2SCG10-32	L60*60*6	1780		6	6	9.6	57.9
2SCG10-32X	L60*60*6	1780		6	6	9.6	57.9
2SCG10-33	L60*60*6	1820		2	2	9.9	19.7
2SCG10-33X	L60*60*6	1820		2	2	9.9	19.7
2SCG10-34	L60*60*6	1885		2	2	10.2	20.4
2SCG10-34X	L60*60*6	1885		2	2	10.2	20.4
2SCG10-35	L60*60*6	1910		4	4	10.4	41.4
2SCG10-35X	L60*60*6	1910		4	4	10.4	41.4
2SCG10-36	L60*60*6	1976		2	2	10.7	21.4
2SCG10-36X	L60*60*6	1976		2	2	10.7	21.4
2SCG10-37	L80*80*8	1130		4	4	10.9	43.7
2SCG10-38	L70*70*7	1230		2	2	9.1	18.2
2SCG10-38X	L70*70*7	1230		2	2	9.1	18.2
2SCG10-39	L60*60*6	1715		2	2	9.3	18.6
2SCG10-40	L50*50*5	876		2	2	3.3	6.6
2SCG10-41	L60*60*6	1622		2	2	8.8	17.6
2SCG10-42	L50*50*5	543		2	2	2.0	4.1
2SCG10-43	L60*60*6	1202		2	2	6.5	13.0
2SCG10-43X	L60*60*6	1202		2	2	6.5	13.0
2SCG10-44	PL8	540	255	4	4	8.6	34.6
2SCG10-45	PL8	540	257	4	4	8.7	34.9
2SCG10-46	PL8	544	254	4	4	8.7	34.7
2SCG10-47	PL8	564	251	4	4	8.9	35.6
2SCG10-48	PL8	578	251	4	4	9.1	36.4
2SCG10-49	PL8	572	226	4	4	8.1	32.5
2SCG10-50	PL8	607	226	4	4	8.6	34.5
2SCG10-51	PL8	577	197	4	4	7.1	28.6
2SCG10-52	PL10	500	213	4	4	8.4	33.4
2SCG10-53	PL10	380	213	4	4	6.4	25.4
2SCG10-54	PL10	247	185	2	2	3.6	7.2
2SCG10-55	PL8	616	205	4	4	7.9	31.7
2SCG10-56	PL8	581	205	12	12	7.5	89.8
2SCG10-57	PL8	540	185	4	4	6.3	25.1
2SCG10-58	PL8	490	185	8	8	5.7	45.5
2SCG10-59	PL8	512	189	4	4	6.1	24.3
2SCG10-60	PL10	509	480	4	4	19.2	76.7
2SCG10-61	PL10	509	380	4	4	15.2	60.7
2SCG10-62	PL10	681	185	1	1	9.9	9.9
2SCG10-63	PL8	158	135	8	8	1.3	10.7
2SCG10-70	PL8	500	100	1	1	3.1	3.1
2SCG10-71	UNP120	50		2	2	0.7	1.3
2SCG10-74	PL10	495	110	16	16	4.3	68.4
2SCG10-75	PL10	495	90	16	16	3.5	56.0
2SCG10-78	PL10	475	90	8	8	3.4	26.8
2SCG10-79	L80*80*8	475		4	4	4.6	18.4
2SCG10-79F	PL2	235	60	8	8	0.2	1.8
2SCG10-79E	PL4	195	60	8	8	0.4	2.9
2SCG10-80	PL10	475	90	8	8	3.4	26.8
2SCG10-81	L80*80*8	475		4	4	4.6	18.4
2SCG10-81F	PL2	235	60	8	8	0.2	1.8
2SCG10-90	PL25	420	420	4	4	34.6	138.5
2SCG10-91	PL12	460	300	4	4	13.0	52.0
2SCG10-92	PL12	370	300	4	4	10.5	41.8
2SCG10-93	PL12	300	148	12	12	4.2	50.2
2SCG10-94	PL12	300	148	8	8	4.2	33.5
2SCG10-95	PL12	300	99	4	4	2.8	11.2
2SCG10-96	PL12	300	125	8	8	3.5	28.3
FPL8	PL8	50	50	45	45	0.2	7.1
					TOTAL WEIGHT (Kg)		4587.4
					WEIGHT		4587.4

2SCG8		
SIZE	QTY	TOTAL Q
M16*45	680	8160
M16*50	197	2364
M16*60	272	3264
M16*180	94	1128

NOTES

1- ALL DIMENSIONS ARE IN mm.
2- STEEL : ST-37
3- ALL STRUCTURAL SECTIONS ARE HOT-DIP GALVANIZED ACC. TO ASTM A123
4- ALL ANGLES ARE FROM MILD STEEL WITH YIELD STRENGTH 2400 Kg/cm^2.
5- M-16 BOLTS ARE GRADE 8.8
6- ALL BOLTS,NUTS,WASHERS ARE HOT-DIP GALVANIZED ACC. TO ASTM A153
7-FOR EACH BOLT: ONE NUT, TWO WASHER AND ONE STANDARD SPRING WASHER ARE NEDDED.
8- S IS SHIELD WIRE ATTACHMENT POINT TO COLUMN (U-BOLT M18-70)

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: NORTHERN SITE INTERFACE 400/230 KV SUBSTATION

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG10"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

PROJECT CODE: –

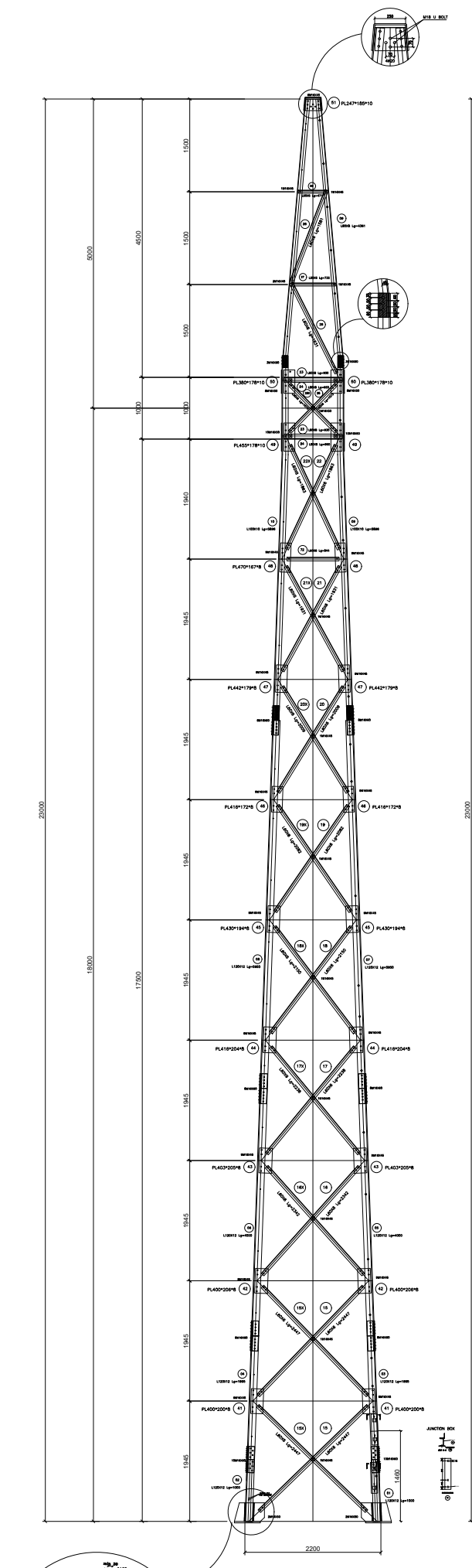
COMPUTER NO. : –

SCALE: –

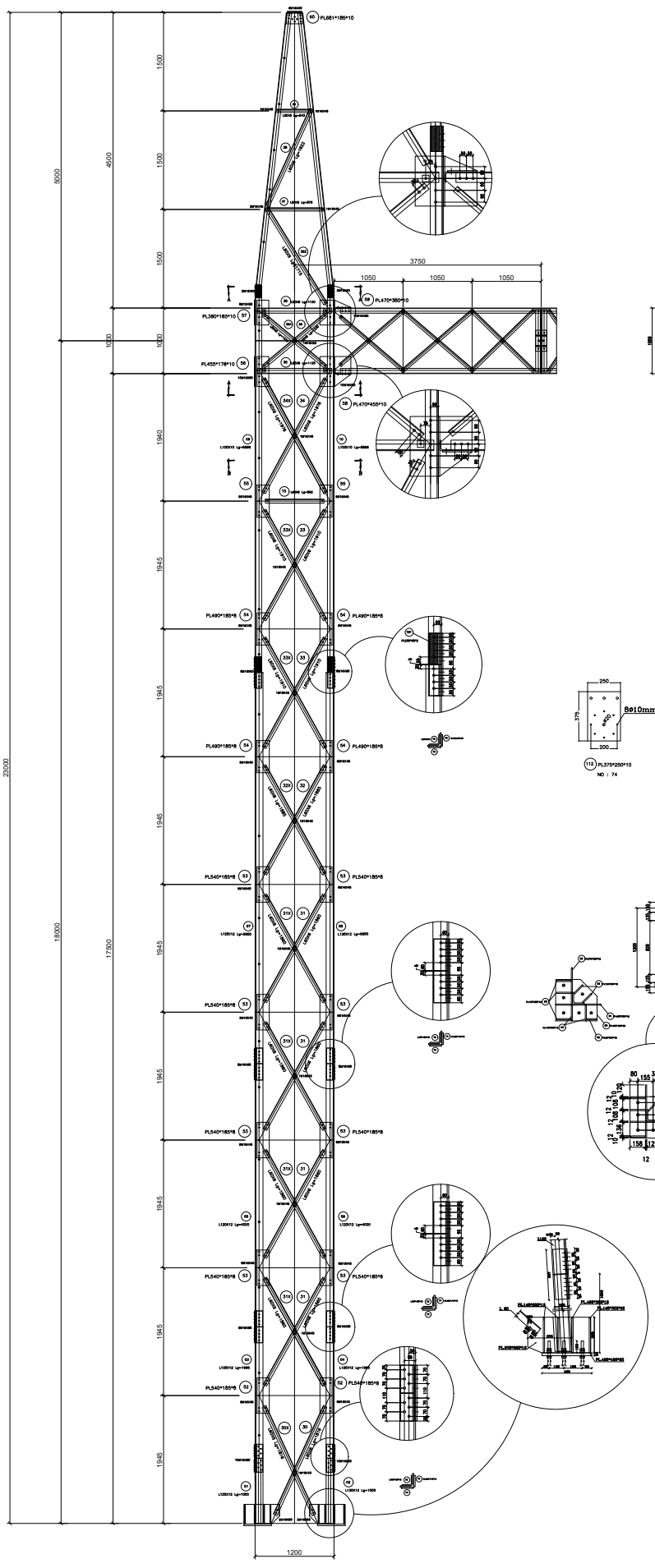
SIZE: A1

DRAWING NO. : –

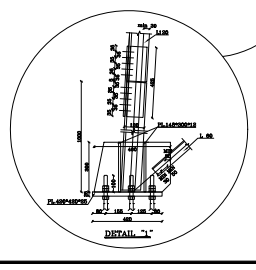
NO : 1



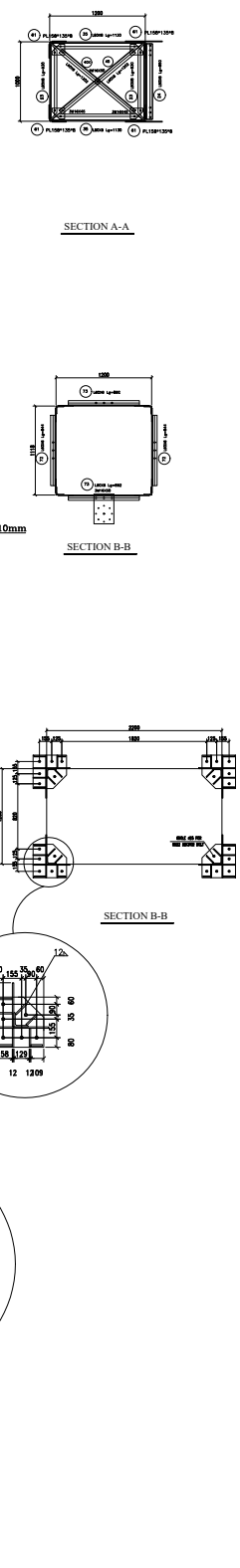
SIDE VIEW



FRONT VIEW



DETAIL "1"



SECTION A-A

SECTION B-B

SECTION B-B

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG9-1	L120*120*12	1000		2	4	21.6	86.4
2SCG9-2	L120*120*12	1000		2	4	21.6	86.4
2SCG9-3	L120*120*12	1995		2	4	43.1	172.4
2SCG9-4	L120*120*12	1995		2	4	43.1	172.4
2SCG9-5	L120*120*12	4000		2	4	86.4	345.6
2SCG9-6	L120*120*12	4000		2	4	86.4	345.6
2SCG9-7	L120*120*12	5950		2	4	128.5	514.1
2SCG9-8	L120*120*12	5950		2	4	128.5	514.1
2SCG9-9	L100*100*10	5896		2	4	89.0	356.1
2SCG9-10	L100*100*10	5896		2	4	89.0	356.1
2SCG9-11	L80*80*8	4361		2	4	42.1	168.5
2SCG9-12	L80*80*8	4361		2	4	42.1	168.5
2SCG9-15	L60*60*6	2447		4	8	13.3	106.1
2SCG9-15X	L60*60*6	2447		4	8	13.3	106.1
2SCG9-16	L60*60*6	2342		2	4	12.7	50.8
2SCG9-16X	L60*60*6	2342		2	4	12.7	50.8
2SCG9-17	L60*60*6	2238		2	4	12.1	48.5
2SCG9-17X	L60*60*6	2238		2	4	12.1	48.5
2SCG9-18	L60*60*6	2150		2	4	11.7	46.6
2SCG9-18X	L60*60*6	2150		2	4	11.7	46.6
2SCG9-19	L60*60*6	2082		2	4	11.3	45.1
2SCG9-19X	L60*60*6	2082		2	4	11.3	45.1
2SCG9-20	L60*60*6	2009		2	4	10.9	43.6
2SCG9-20X	L60*60*6	2009		2	4	10.9	43.6
2SCG9-21	L60*60*6	1931		2	4	10.5	41.9
2SCG9-21X	L60*60*6	1931		2	4	10.5	41.9
2SCG9-22	L60*60*6	1863		2	4	10.1	40.4
2SCG9-22X	L60*60*6	1863		2	4	10.1	40.4
2SCG9-23	L80*80*8	930		4	8	9.0	71.9
2SCG9-24	L80*80*8	950		2	4	9.2	36.7
2SCG9-25	L60*60*6	1073		2	4	5.8	23.3
2SCG9-25X	L60*60*6	1073		2	4	5.8	23.3
2SCG9-26	L60*60*6	1631		2	4	8.8	35.4
2SCG9-27	L50*50*5	732		2	4	2.8	11.0
2SCG9-28	L60*60*6	1581		2	4	8.6	34.3
2SCG9-29	L50*50*5	471		2	4	1.8	7.1
2SCG9-30	L60*60*6	1816		2	4	9.8	39.4
2SCG9-30X	L60*60*6	1816		2	4	9.8	39.4
2SCG9-31	L60*60*6	1860		8	16	10.1	161.3
2SCG9-31X	L60*60*6	1860		8	16	10.1	161.3
2SCG9-32	L60*60*6	1885		2	4	10.2	40.9
2SCG9-32X	L60*60*6	1885		2	4	10.2	40.9
2SCG9-33	L60*60*6	1910		4	8	10.4	82.8
2SCG9-33X	L60*60*6	1910		4	8	10.4	82.8
2SCG9-34	L60*60*6	1976		2	4	10.7	42.8
2SCG9-34X	L60*60*6	1976		2	4	10.7	42.8
2SCG9-35	L80*80*8	1130		4	8	10.9	87.3
2SCG9-36	L60*60*6	1230		2	4	6.7	26.7
2SCG9-36X	L60*60*6	1230		2	4	6.7	26.7
2SCG9-36Z	L60*60*6	1715		2	4	9.3	37.2
2SCG9-37	L50*50*5	876		2	4	3.3	13.2
2SCG9-38	L60*60*6	1622		2	4	8.8	35.2
2SCG9-39	L50*50*5	543		2	4	2.0	8.2
2SCG9-40	L60*60*6	1202		2	4	6.5	26.1
2SCG9-40X	L60*60*6	1202		2	4	6.5	26.1
2SCG9-41	PL8	400	200	4	8	5.0	40.2
2SCG9-42	PL8	400	206	4	8	5.2	41.4
2SCG9-43	PL8	40	205	4	8	0.5	4.1
2SCG9-44	PL8	416	204	4	8	5.3	42.6
2SCG9-45	PL8	430	194	4	8	5.2	41.9
2SCG9-46	PL8	416	172	4	8	4.5	35.9
2SCG9-47	PL8	442	179	4	8	5.0	39.7
2SCG9-48	PL8	470	167	4	8	4.9	39.4
2SCG9-49	PL10	455	178	4	8	6.4	50.9
2SCG9-50	PL10	380	178	4	8	5.3	42.5
2SCG9-51	PL10	247	185	2	4	3.6	14.3
2SCG9-52	PL8	540	185	4	8	6.3	50.2
2SCG9-53	PL8	540	185	16	32	6.3	200.8
2SCG9-54	PL8	490	185	8	16	5.7	91.1
2SCG9-55	PL8	490	185	4	8	5.7	45.5
2SCG9-56	PL10	455	224	2	4	8.0	32.0
2SCG9-57	PL10	380	224	2	4	6.7	26.7
2SCG9-58	PL10	508	455	2	4	18.1	72.6
2SCG9-59	PL10	509	380	2	4	15.2	60.7
2SCG9-60	PL10	681	185	1	2	9.9	19.8
2SCG9-61	PL8	158	135	8	16	1.3	21.4
2SCG9-70	PL8	500	100	1	2	3.1	6.3
2SCG9-71	UNP120	50		2	4	0.7	2.7
2SCG9-72	L60*60*6	844		2	4	4.6	18.3
2SCG9-73	L60*60*6	892		2	4	4.8	19.3
2SCG9-74	PL10	425	110	8	16	3.7	58.7
2SCG9-75	L100*100*10	425		4	8	6.4	51.3
2SCG9-76	PL10	485	90	16	32	3.4	109.6
2SCG9-77	L100*100*10	485		8	16	7.3	117.2
2SCG9-78	PL10	475	90	8	16	3.4	53.7
2SCG9-79	L80*80*8	475		4	8	4.6	36.7
2SCG9-79F	PL2	235	60	8	16	0.2	3.5
2SCG9-90	PL25	420	420	4	8	34.6	276.9
2SCG9-91	PL12	460	300	4	8	13.0	104.0
2SCG9-92	PL12	370	300	4	8	10.5	83.6
2SCG9-93	PL12	300	148	12	24	4.2	100.4
2SCG9-94	PL12	300	148	8	16	4.2	66.9
2SCG9-95	PL12	300	99	4	8	2.8	22.4
2SCG9-96	PL12	300	125	8	16	3.5	56.5
FPL8	PL8	50	50	45	90	0.2	14.1
					TOTAL WEIGHT (Kg)		7612.1
					WEIGHT		3806.1

2SCG8		
SIZE	QTY	TOTALQ
M16*45	680	8160
M16*50	197	2364
M16*60	272	3264
M16*180	94	1128

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ...)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC, SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG9"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

PROJECT CODE: –

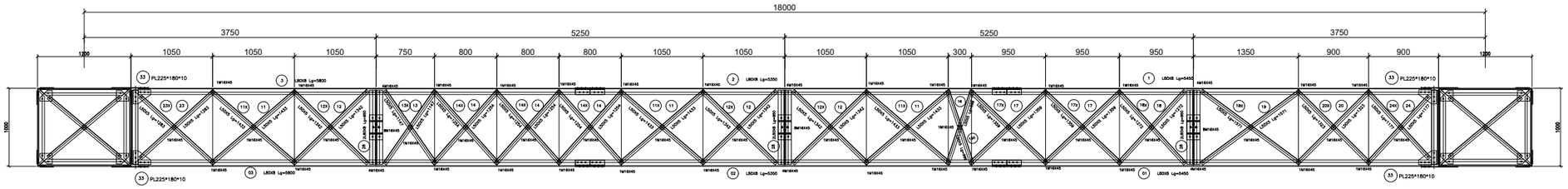
SCALE: –

SIZE: A1

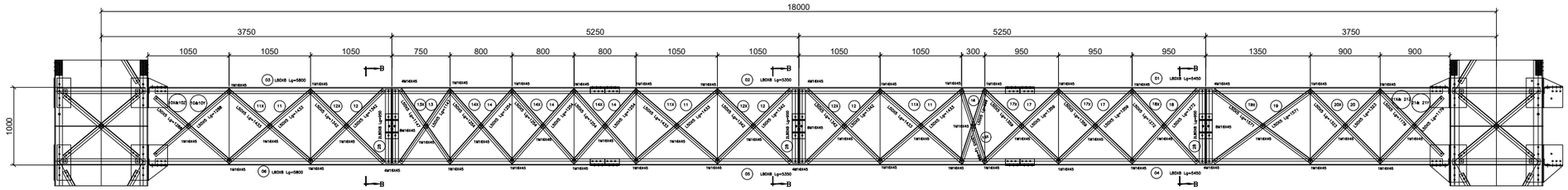
COMPUTER NO. : –

DRAWING NO. : –

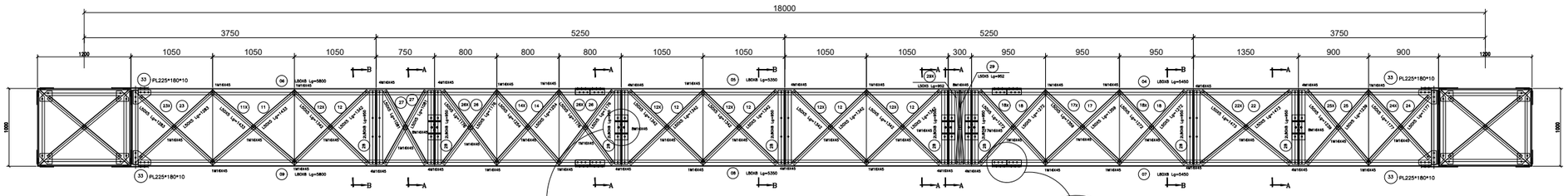
NO : 2



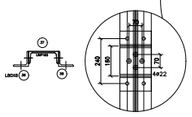
TOP VIEW

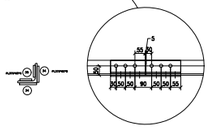


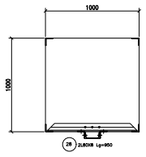
FRONT & BACK VIEW



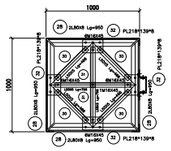
BOTTOM VIEW







SECTION A-A



SECTION B-B

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SBG5-1	L80*80*8	5450		1	2	52.6	105.3
2SBG5-2	L80*80*8	5350		1	2	51.7	103.4
2SBG5-3	L80*80*8	5800		1	2	56.0	112.1
2SBG5-4	L80*80*8	5450		1	2	52.6	105.3
2SBG5-5	L80*80*8	5350		1	2	51.7	103.4
2SBG5-6	L80*80*8	5800		1	2	56.0	112.1
2SBG5-7	L80*80*8	5450		1	2	52.6	105.3
2SBG5-8	L80*80*8	5350		1	2	51.7	103.4
2SBG5-9	L80*80*8	5800		1	2	56.0	112.1
2SBG5-10	L80*80*8	5450		1	2	52.6	105.3
2SBG5-11	L80*80*8	5350		1	2	51.7	103.4
2SBG5-12	L80*80*8	5800		1	2	56.0	112.1
2SBG5-10	L50*50*5	1288		2	4	4.9	19.4
2SBG5-10X	L50*50*5	1288		2	4	4.9	19.4
2SBG5-11	L50*50*5	1433		4	8	5.4	43.2
2SBG5-11X	L50*50*5	1433		4	8	5.4	43.2
2SBG5-12	L50*50*5	1342		13	26	5.1	131.5
2SBG5-12X	L50*50*5	1342		13	26	5.1	131.5
2SBG5-13	L50*50*5	1147		3	6	4.3	25.9
2SBG5-13X	L50*50*5	1147		3	6	4.3	25.9
2SBG5-14	L50*50*5	1254		10	20	4.7	94.6
2SBG5-14X	L50*50*5	1254		10	20	4.7	94.6
2SBG5-15	L50*50*5	1433		6	12	5.4	64.8
2SBG5-15X	L50*50*5	1433		6	12	5.4	64.8
2SBG5-16	L50*50*5	999		3	6	3.8	22.6
2SBG5-16X	L50*50*5	999		3	6	3.8	22.6
2SBG5-17	L50*50*5	1359		7	14	5.1	71.7
2SBG5-17X	L50*50*5	1359		7	14	5.1	71.7
2SBG5-18	L50*50*5	1273		5	10	4.8	48.0
2SBG5-18X	L50*50*5	1273		5	10	4.8	48.0
2SBG5-19	L50*50*5	1571		3	6	5.9	35.5
2SBG5-19X	L50*50*5	1571		3	6	5.9	35.5
2SBG5-20	L50*50*5	1323		3	6	5.0	29.9
2SBG5-20X	L50*50*5	1323		3	6	5.0	29.9
2SBG5-21	L50*50*5	1179		2	4	4.4	17.8
2SBG5-21X	L50*50*5	1179		2	4	4.4	17.8
2SBG5-22	L50*50*5	1473		1	2	5.6	11.1
2SBG5-22X	L50*50*5	1473		1	2	5.6	11.1
2SBG5-23	L50*50*5	1283		2	4	4.8	19.3
2SBG5-23X	L50*50*5	1283		2	4	4.8	19.3
2SBG5-24	L50*50*5	1177		2	4	4.4	17.7
2SBG5-24X	L50*50*5	1177		2	4	4.4	17.7
2SBG5-25	L50*50*5	1239		1	2	4.7	9.3
2SBG5-25X	L50*50*5	1239		1	2	4.7	9.3
2SBG5-26	L50*50*5	1176		2	4	4.4	17.7
2SBG5-26X	L50*50*5	1176		2	4	4.4	17.7
2SBG5-27	L50*50*5	1081		1	2	4.1	8.2
2SBG5-27X	L50*50*5	1081		1	2	4.1	8.2
2SBG5-28	L80*80*8	950		1	2	9.2	18.4
2SBG5-29	L50*50*5	952		1	2	3.6	7.2
2SBG5-29X	L50*50*5	952		1	2	3.6	7.2
2SBG5-30	L50*50*5	466		12	24	1.8	42.2
2SBG5-31	L50*50*5	796		6	12	3.0	36.0
2SBG5-32	PL8	218	139	12	24	1.9	45.7
2SBG5-33	PL10	225	180	8	16	3.2	50.9
2SBG5-34	PL6	375	60	16	32	1.8	56.5
2SBG5-35	PL6	375	60	16	32	1.8	56.5
2SBG5-36	L80*80*8	168		28	56	1.6	90.9
2SBG5-37	UNP160	168		14	28	3.2	88.4
					TOTAL WEIGHT (Kg)		3159.6
					WEIGHT		1579.8

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC, SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "4SBG5"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

PROJECT CODE: –

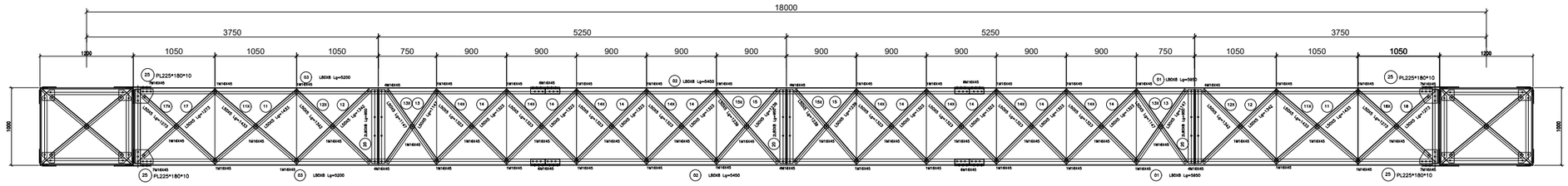
COMPUTER NO. : –

SCALE: –

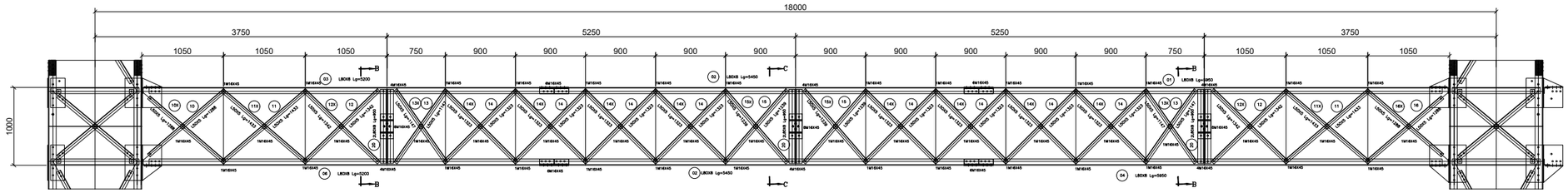
SIZE: A1

DRAWING NO. : –

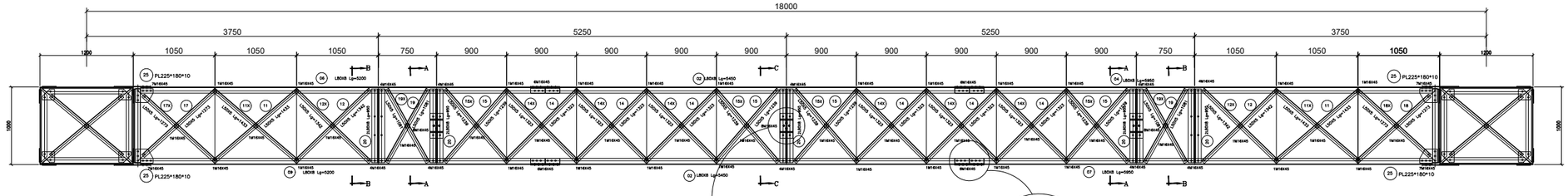
NO : 2



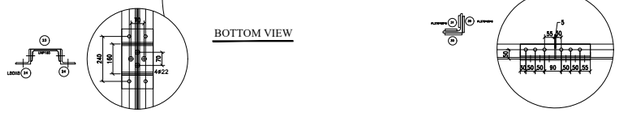
TOP VIEW

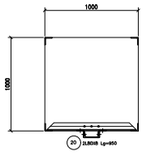


FRONT & BACK VIEW

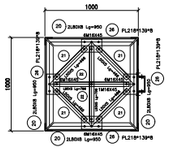


BOTTOM VIEW

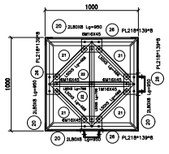




SECTION A-A



SECTION B-B



SECTION C-C

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SBG1-1	L80*80*8	5950		1	12	57.5	689.7
2SBG1-2	L80*80*8	5450		1	12	52.6	631.8
2SBG1-3	L80*80*8	5200		1	12	50.2	602.8
2SBG1-4	L80*80*8	5950		1	12	57.5	689.7
2SBG1-5	L80*80*8	5500		1	12	53.1	637.6
2SBG1-6	L80*80*8	5200		1	12	50.2	602.8
2SBG1-7	L80*80*8	5950		1	12	57.5	689.7
2SBG1-8	L80*80*8	5450		1	12	52.6	631.8
2SBG1-9	L80*80*8	5200		1	12	50.2	602.8
2SBG1-10	L80*80*8	5950		1	12	57.5	689.7
2SBG1-11	L80*80*8	5450		1	12	52.6	631.8
2SBG1-12	L80*80*8	5200		1	12	50.2	602.8
2SBG1-10	L50*50*5	1288		2	24	4.9	116.5
2SBG1-10X	L50*50*5	1288		2	24	4.9	116.5
2SBG1-11	L50*50*5	1433		8	96	5.4	518.6
2SBG1-11X	L50*50*5	1433		8	96	5.4	518.6
2SBG1-12	L50*50*5	1342		8	96	5.1	485.7
2SBG1-12X	L50*50*5	1342		8	96	5.1	485.7
2SBG1-13	L50*50*5	1147		6	72	4.3	311.3
2SBG1-13X	L50*50*5	1147		6	72	4.3	311.3
2SBG1-14	L50*50*5	1323		30	360	5.0	1795.6
2SBG1-14X	L50*50*5	1323		30	360	5.0	1795.6
2SBG1-15	L50*50*5	1239		10	120	4.7	560.5
2SBG1-15X	L50*50*5	1239		10	120	4.7	560.5
2SBG1-16	L50*50*5	1288		2	24	4.9	116.5
2SBG1-16X	L50*50*5	1288		2	24	4.9	116.5
2SBG1-17	L50*50*5	1273		2	24	4.8	115.2
2SBG1-17X	L50*50*5	1273		2	24	4.8	115.2
2SBG1-18	L50*50*5	1273		2	24	4.8	115.2
2SBG1-18X	L50*50*5	1273		2	24	4.8	115.2
2SBG1-19	L50*50*5	1081		2	24	4.1	97.8
2SBG1-19X	L50*50*5	1081		2	24	4.1	97.8
2SBG1-20	L80*80*8	950		28	336	9.2	3083.5
2SBG1-21	L50*50*5	466		12	144	1.8	253.0
2SBG1-22	L50*50*5	796		6	72	3.0	216.1
2SBG1-23	UNP160	168		9	108	3.2	341.1
2SBG1-24	L80*80*8	168		18	216	1.6	350.5
2SBG1-25	PL10	225	180	8	96	3.2	305.2
2SBG1-26	PL8	218	139	12	144	1.9	274.0
2SBG1-30	PL6	375	60	16	192	1.1	203.5
2SBG1-31	PL6	375	60	16	192	1.1	203.5
FPL8	PL8	50	50	75	900	0.2	141.3
					TOTAL WEIGHT (Kg)		21540.6
					WEIGHT		1795.0

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC, SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SBG3"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

PROJECT CODE: —

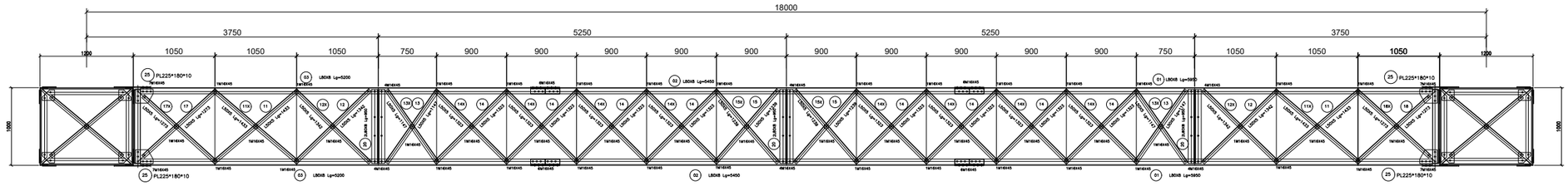
COMPUTER NO. : —

SCALE: –

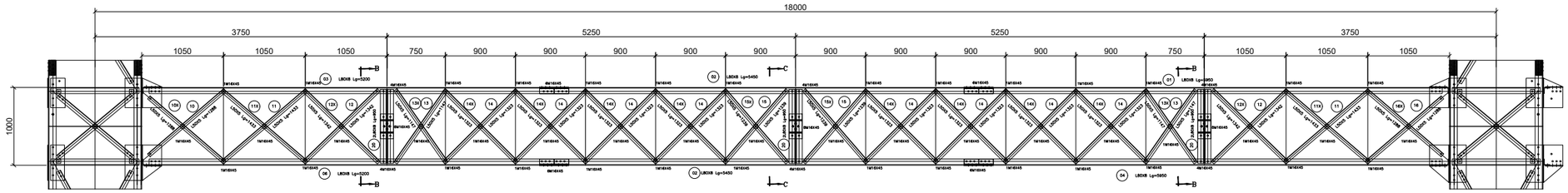
SIZE: A1

DRAWING NO. : —

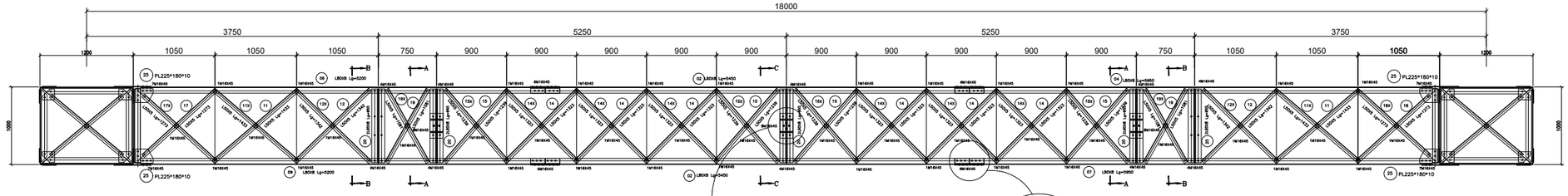
NO : 12



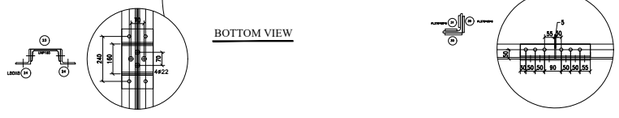
TOP VIEW

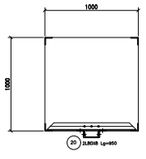


FRONT & BACK VIEW

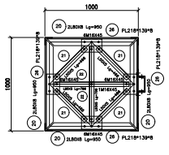


BOTTOM VIEW

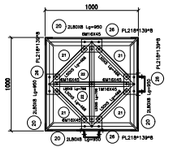




SECTION A-A



SECTION B-B



SECTION C-C

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SBG1-1	L80*80*8	5950		1	12	57.5	689.7
2SBG1-2	L80*80*8	5450		1	12	52.6	631.8
2SBG1-3	L80*80*8	5200		1	12	50.2	602.8
2SBG1-4	L80*80*8	5950		1	12	57.5	689.7
2SBG1-5	L80*80*8	5500		1	12	53.1	637.6
2SBG1-6	L80*80*8	5200		1	12	50.2	602.8
2SBG1-7	L80*80*8	5950		1	12	57.5	689.7
2SBG1-8	L80*80*8	5450		1	12	52.6	631.8
2SBG1-9	L80*80*8	5200		1	12	50.2	602.8
2SBG1-10	L80*80*8	5950		1	12	57.5	689.7
2SBG1-11	L80*80*8	5450		1	12	52.6	631.8
2SBG1-12	L80*80*8	5200		1	12	50.2	602.8
2SBG1-10	L50*50*5	1288		2	24	4.9	116.5
2SBG1-10X	L50*50*5	1288		2	24	4.9	116.5
2SBG1-11	L50*50*5	1433		8	96	5.4	518.6
2SBG1-11X	L50*50*5	1433		8	96	5.4	518.6
2SBG1-12	L50*50*5	1342		8	96	5.1	485.7
2SBG1-12X	L50*50*5	1342		8	96	5.1	485.7
2SBG1-13	L50*50*5	1147		6	72	4.3	311.3
2SBG1-13X	L50*50*5	1147		6	72	4.3	311.3
2SBG1-14	L50*50*5	1323		30	360	5.0	1795.6
2SBG1-14X	L50*50*5	1323		30	360	5.0	1795.6
2SBG1-15	L50*50*5	1239		10	120	4.7	560.5
2SBG1-15X	L50*50*5	1239		10	120	4.7	560.5
2SBG1-16	L50*50*5	1288		2	24	4.9	116.5
2SBG1-16X	L50*50*5	1288		2	24	4.9	116.5
2SBG1-17	L50*50*5	1273		2	24	4.8	115.2
2SBG1-17X	L50*50*5	1273		2	24	4.8	115.2
2SBG1-18	L50*50*5	1273		2	24	4.8	115.2
2SBG1-18X	L50*50*5	1273		2	24	4.8	115.2
2SBG1-19	L50*50*5	1081		2	24	4.1	97.8
2SBG1-19X	L50*50*5	1081		2	24	4.1	97.8
2SBG1-20	L80*80*8	950		28	336	9.2	3083.5
2SBG1-21	L50*50*5	466		12	144	1.8	253.0
2SBG1-22	L50*50*5	796		6	72	3.0	216.1
2SBG1-23	UNP160	168		9	108	3.2	341.1
2SBG1-24	L80*80*8	168		18	216	1.6	350.5
2SBG1-25	PL10	225	180	8	96	3.2	305.2
2SBG1-26	PL8	218	139	12	144	1.9	274.0
2SBG1-30	PL6	375	60	16	192	1.1	203.5
2SBG1-31	PL6	375	60	16	192	1.1	203.5
FPL8	PL8	50	50	75	900	0.2	141.3
					TOTAL WEIGHT (Kg)		21540.6
					WEIGHT		1795.0

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC, SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

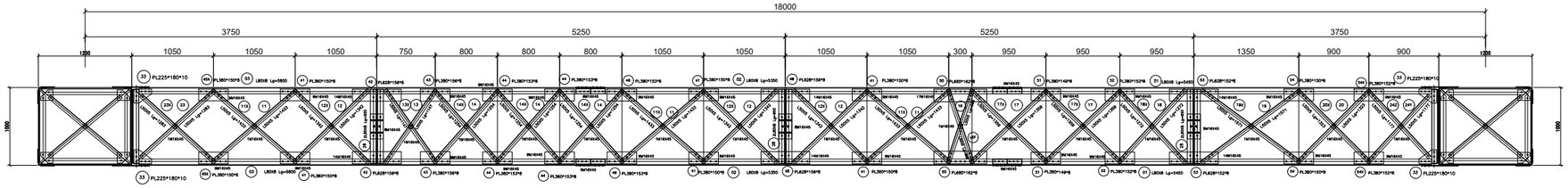
Pars dakal gostar

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

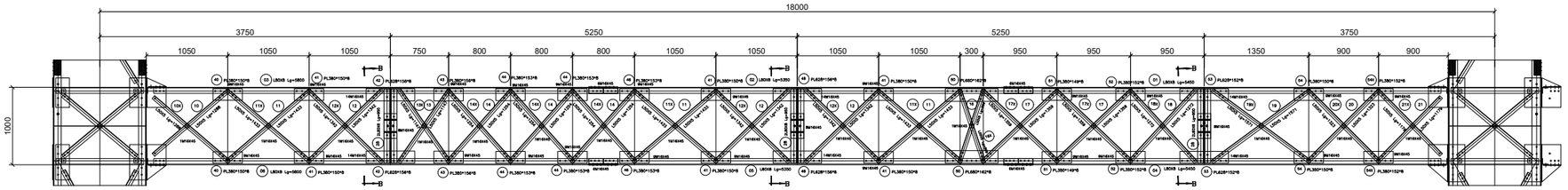
TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SBG2"

	NAME	PROJECT CODE:		COMPUTER NO. :
DESIGNED:	–	—		—
DRAWN:	–			
CHECKED:	Z.KH	SCALE: –	SIZE: A1	DRAWING NO. : —
APPROVED:	–			

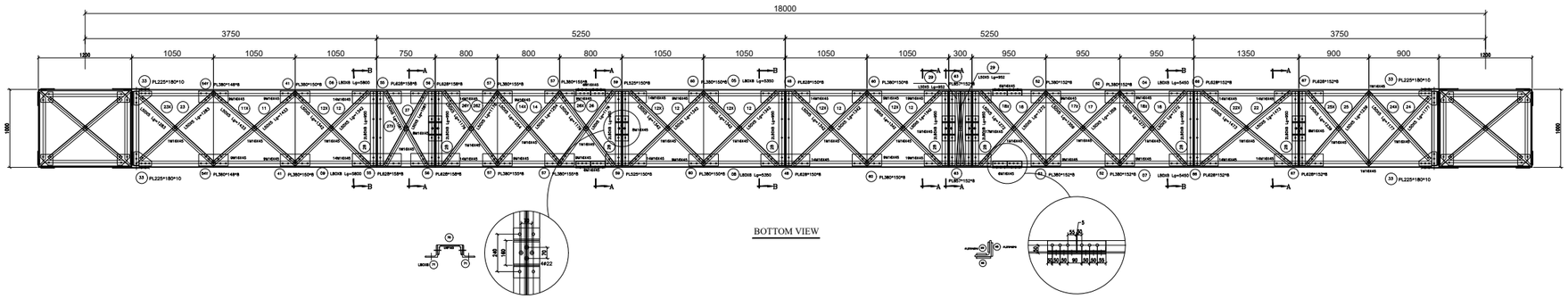
NO : 12



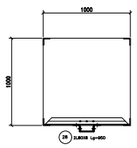
TOP VIEW



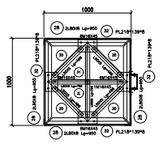
FRONT & BACK VIEW



BOTTOM VIEW



SECTION A-A



SECTION B-B

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SBG4-1	L80*80*8	5450		1	2	52.6	105.3
2SBG4-2	L80*80*8	5350		1	2	51.7	103.4
2SBG4-3	L80*80*8	5800		1	2	56.0	112.1
2SBG4-4	L80*80*8	5450		1	2	52.6	105.3
2SBG4-5	L80*80*8	5350		1	2	51.7	103.4
2SBG4-6	L80*80*8	5800		1	2	56.0	112.1
2SBG4-7	L80*80*8	5450		1	2	52.6	105.3
2SBG4-8	L80*80*8	5350		1	2	51.7	103.4
2SBG4-9	L80*80*8	5800		1	2	56.0	112.1
2SBG4-10	L80*80*8	5450		1	2	52.6	105.3
2SBG4-11	L80*80*8	5350		1	2	51.7	103.4
2SBG4-12	L80*80*8	5800		1	2	56.0	112.1
2SBG4-10	L50*50*5	1288		2	4	4.9	19.4
2SBG4-10X	L50*50*5	1288		2	4	4.9	19.4
2SBG4-11	L50*50*5	1433		4	8	5.4	43.2
2SBG4-11X	L50*50*5	1433		4	8	5.4	43.2
2SBG4-12	L50*50*5	1342		13	26	5.1	131.5
2SBG4-12X	L50*50*5	1342		13	26	5.1	131.5
2SBG4-13	L50*50*5	1147		3	6	4.3	25.9
2SBG4-13X	L50*50*5	1147		3	6	4.3	25.9
2SBG4-14	L50*50*5	1254		10	20	4.7	94.6
2SBG4-14X	L50*50*5	1254		10	20	4.7	94.6
2SBG4-15	L50*50*5	1433		6	12	5.4	64.8
2SBG4-15X	L50*50*5	1433		6	12	5.4	64.8
2SBG4-16	L50*50*5	999		3	6	3.8	22.6
2SBG4-16X	L50*50*5	999		3	6	3.8	22.6
2SBG4-17	L50*50*5	1359		7	14	5.1	71.7
2SBG4-17X	L50*50*5	1359		7	14	5.1	71.7
2SBG4-18	L50*50*5	1273		5	10	4.8	48.0
2SBG4-18X	L50*50*5	1273		5	10	4.8	48.0
2SBG4-19	L50*50*5	1571		3	6	5.9	35.5
2SBG4-19X	L50*50*5	1571		3	6	5.9	35.5
2SBG4-20	L50*50*5	1323		3	6	5.0	29.9
2SBG4-20X	L50*50*5	1323		3	6	5.0	29.9
2SBG4-21	L50*50*5	1179		2	4	4.4	17.8
2SBG4-21X	L50*50*5	1179		2	4	4.4	17.8
2SBG4-22	L50*50*5	1473		1	2	5.6	11.1
2SBG4-22X	L50*50*5	1473		1	2	5.6	11.1
2SBG4-23	L50*50*5	1283		2	4	4.8	19.3
2SBG4-23X	L50*50*5	1283		2	4	4.8	19.3
2SBG4-24	L50*50*5	1177		2	4	4.4	17.7
2SBG4-24X	L50*50*5	1177		2	4	4.4	17.7
2SBG4-25	L50*50*5	1239		1	2	4.7	9.3
2SBG4-25X	L50*50*5	1239		1	2	4.7	9.3
2SBG4-26	L50*50*5	1176		2	4	4.4	17.7
2SBG4-26X	L50*50*5	1176		2	4	4.4	17.7
2SBG4-27	L50*50*5	1081		1	2	4.1	8.2
2SBG4-27X	L50*50*5	1081		1	2	4.1	8.2
2SBG4-28	L80*80*8	950		34	68	3.6	243.5
2SBG4-29	L50*50*5	952		1	2	3.6	7.2
2SBG4-29X	L50*50*5	952		1	2	3.6	7.2
2SBG4-30	L50*50*5	466		12	24	1.8	42.2
2SBG4-31	L50*50*5	796		6	12	3.0	36.0
2SBG4-32	PL8	218	139	12	24	1.9	45.7
2SBG4-33	PL10	225	180	8	16	3.2	50.9
2SBG4-40	PL8	380	150	6	12	3.6	43.0
2SBG4-41	PL8	380	150	6	12	3.6	43.0
2SBG4-42	PL8	628	156	6	12	6.2	73.8
2SBG4-43	PL8	380	156	6	12	3.7	44.7
2SBG4-44	PL8	380	153	6	12	3.7	43.8
2SBG4-45	PL8	380	153	6	12	3.7	43.8
2SBG4-46	PL8	380	153	6	12	3.7	43.8
2SBG4-47	PL8	380	150	6	12	3.6	43.0
2SBG4-48	PL8	628	156	6	12	6.2	73.8
2SBG4-49	PL8	380	150	6	12	3.6	43.0
2SBG4-50	PL8	680	162	6	12	6.9	83.0
2SBG4-51	PL8	380	149	6	12	3.6	42.7
2SBG4-52	PL8	380	152	6	12	3.6	43.5
2SBG4-53	PL8	628	152	6	12	6.0	71.9
2SBG4-54	PL8	380	150	16	32	3.6	114.5
2SBG4-55	PL8	628	158	2	4	6.2	24.9
2SBG4-56	PL8	628	158	2	4	6.2	24.9
2SBG4-57	PL8	380	155	2	4	3.7	14.8
2SBG4-58	PL8	380	155	2	4	3.7	14.8
2SBG4-59	PL8	525	150	2	4	4.9	19.8
2SBG4-60	PL8	380	150	2	4	3.6	14.3
2SBG4-61	PL8	628	150	2	4	5.9	23.7
2SBG4-62	PL8	380	150	2	4	3.6	14.3
2SBG4-63	PL8	857	152	2	4	8.2	32.7
2SBG4-64	PL8	380	152	2	4	3.6	14.5
2SBG4-65	PL8	380	152	2	4	3.6	14.5
2SBG4-66	PL8	628	152	2	4	6.0	24.0
2SBG4-67	PL8	628	152	2	4	6.0	24.0
2SBG4-68	PL6	375	60	16	32	1.1	33.9
2SBG4-69	PL6	375	60	16	32	1.1	33.9
2SBG4-70	UNP160	168		14	28	3.2	88.4
2SBG4-71	L80*80*8	168		28	56	1.6	90.9
FPL	PL8	50	50	75	150	0.2	23.6
					TOTAL WEIGHT (Kg)		4475.7
					WEIGHT		2237.8

NOTES:

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ACCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1"M16 (HOLE #18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUIARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC. SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN L8X8 , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

NO : 2

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		—	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "4SBG4"

	NAME
DESIGNED:	—
DRAWN:	—
CHECKED:	Z.KH
APPROVED:	—

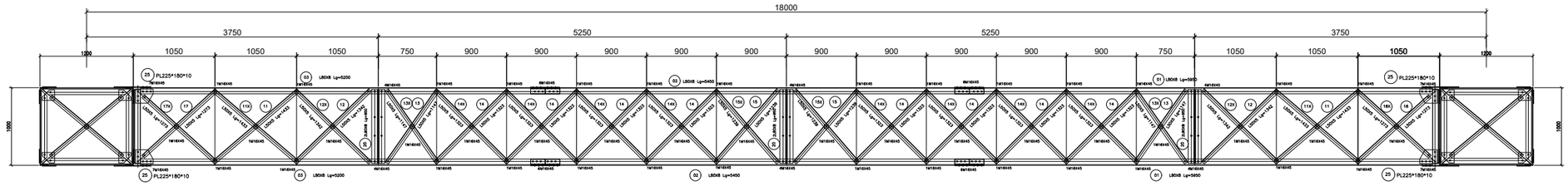
PROJECT CODE: —

SCALE: —

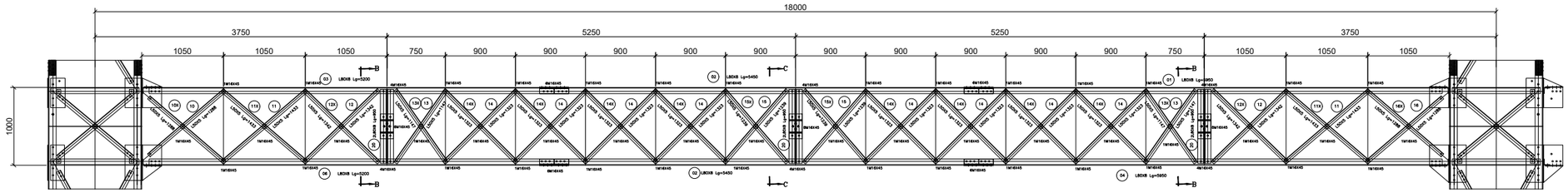
SIZE: A1

COMPUTER NO. : —

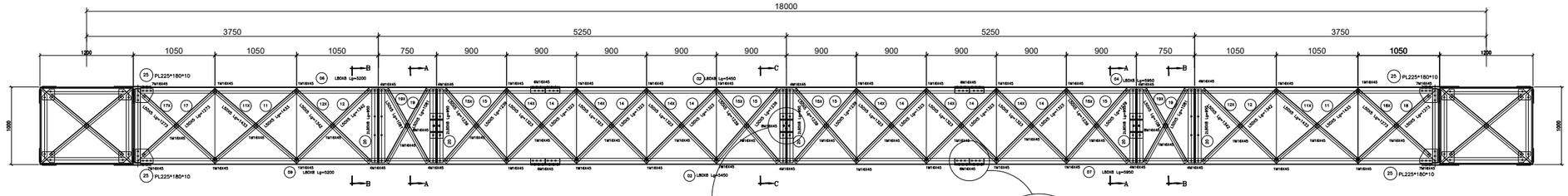
DRAWING NO. : —



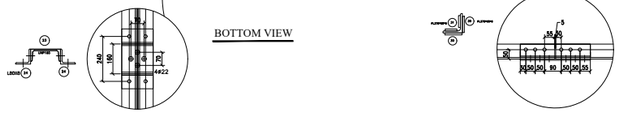
TOP VIEW

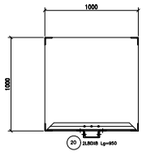


FRONT & BACK VIEW

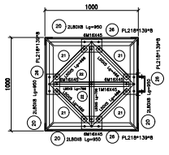


BOTTOM VIEW

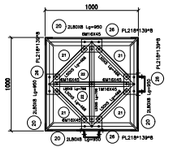




SECTION A-A



SECTION B-B



SECTION C-C

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SBG1-1	L80*80*8	5950		1	12	57.5	689.7
2SBG1-2	L80*80*8	5450		1	12	52.6	631.8
2SBG1-3	L80*80*8	5200		1	12	50.2	602.8
2SBG1-4	L80*80*8	5950		1	12	57.5	689.7
2SBG1-5	L80*80*8	5500		1	12	53.1	637.6
2SBG1-6	L80*80*8	5200		1	12	50.2	602.8
2SBG1-7	L80*80*8	5950		1	12	57.5	689.7
2SBG1-8	L80*80*8	5450		1	12	52.6	631.8
2SBG1-9	L80*80*8	5200		1	12	50.2	602.8
2SBG1-10	L80*80*8	5950		1	12	57.5	689.7
2SBG1-11	L80*80*8	5450		1	12	52.6	631.8
2SBG1-12	L80*80*8	5200		1	12	50.2	602.8
2SBG1-10	L50*50*5	1288		2	24	4.9	116.5
2SBG1-10X	L50*50*5	1288		2	24	4.9	116.5
2SBG1-11	L50*50*5	1433		8	96	5.4	518.6
2SBG1-11X	L50*50*5	1433		8	96	5.4	518.6
2SBG1-12	L50*50*5	1342		8	96	5.1	485.7
2SBG1-12X	L50*50*5	1342		8	96	5.1	485.7
2SBG1-13	L50*50*5	1147		6	72	4.3	311.3
2SBG1-13X	L50*50*5	1147		6	72	4.3	311.3
2SBG1-14	L50*50*5	1323		30	360	5.0	1795.6
2SBG1-14X	L50*50*5	1323		30	360	5.0	1795.6
2SBG1-15	L50*50*5	1239		10	120	4.7	560.5
2SBG1-15X	L50*50*5	1239		10	120	4.7	560.5
2SBG1-16	L50*50*5	1288		2	24	4.9	116.5
2SBG1-16X	L50*50*5	1288		2	24	4.9	116.5
2SBG1-17	L50*50*5	1273		2	24	4.8	115.2
2SBG1-17X	L50*50*5	1273		2	24	4.8	115.2
2SBG1-18	L50*50*5	1273		2	24	4.8	115.2
2SBG1-18X	L50*50*5	1273		2	24	4.8	115.2
2SBG1-19	L50*50*5	1081		2	24	4.1	97.8
2SBG1-19X	L50*50*5	1081		2	24	4.1	97.8
2SBG1-20	L80*80*8	950		28	336	9.2	3083.5
2SBG1-21	L50*50*5	466		12	144	1.8	253.0
2SBG1-22	L50*50*5	796		6	72	3.0	216.1
2SBG1-23	UNP160	168		9	108	3.2	341.1
2SBG1-24	L80*80*8	168		18	216	1.6	350.5
2SBG1-25	PL10	225	180	8	96	3.2	305.2
2SBG1-26	PL8	218	139	12	144	1.9	274.0
2SBG1-30	PL6	375	60	16	192	1.1	203.5
2SBG1-31	PL6	375	60	16	192	1.1	203.5
FPL8	PL8	50	50	75	900	0.2	141.3
					TOTAL WEIGHT (Kg)		21540.6
					WEIGHT		1795.0

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC, SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

NO : 12

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

Pars dakal gostar

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SBG1"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

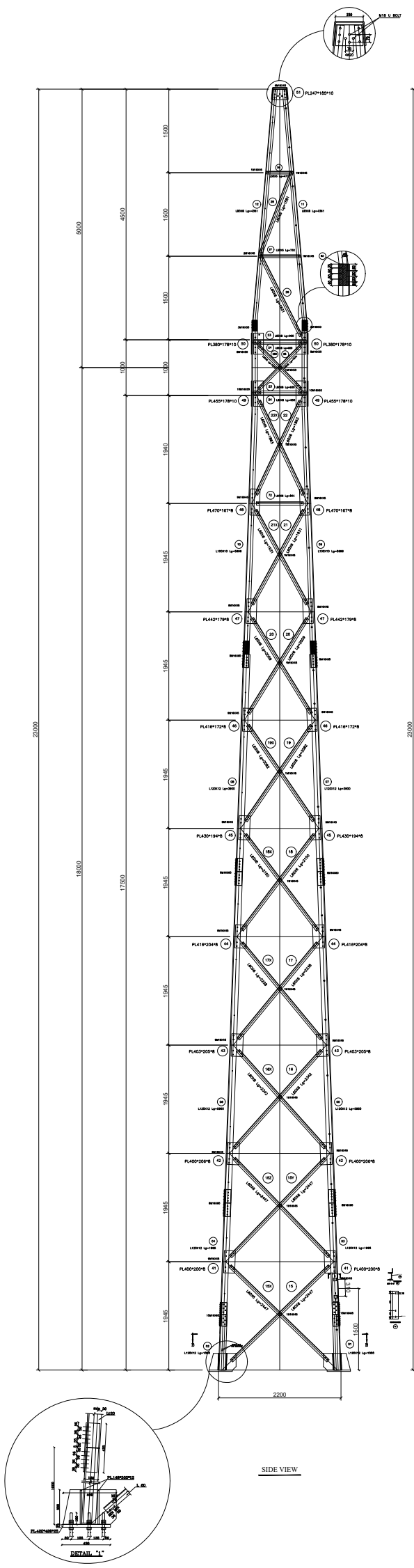
PROJECT CODE: —

COMPUTER NO. : —

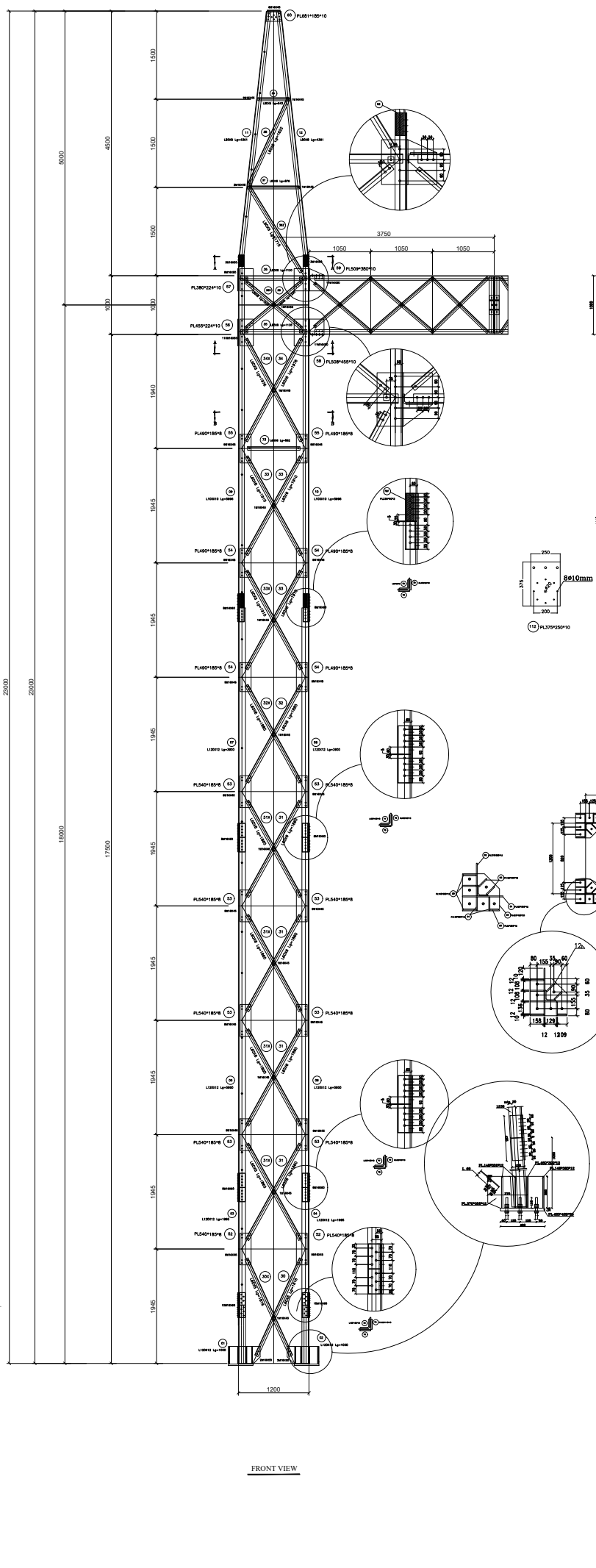
SCALE: –

SIZE: A1

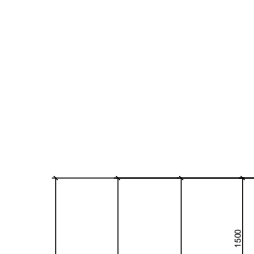
DRAWING NO. : —



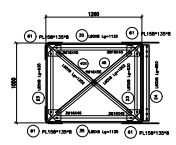
SIDE VIEW



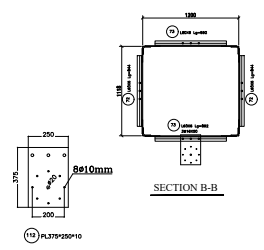
FRONT VIEW



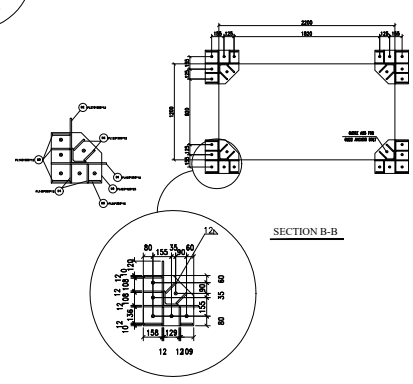
DETAIL "1"



SECTION A-A



SECTION B-B



SECTION B-B

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG3-1	L120*120*12	1000		2	8	21.6	172.8
2SCG3-2	L120*120*12	1000		2	8	21.6	172.8
2SCG3-3	L120*120*12	1995		2	8	43.1	344.7
2SCG3-4	L120*120*12	1995		2	8	43.1	344.7
2SCG3-5	L120*120*12	5950		2	8	128.5	1028.2
2SCG3-6	L120*120*12	5950		2	8	128.5	1028.2
2SCG3-7	L120*120*12	3900		2	8	84.2	673.9
2SCG3-8	L120*120*12	3900		2	8	84.2	673.9
2SCG3-9	L100*100*10	5996		2	8	90.5	724.3
2SCG3-10	L100*100*10	5996		2	8	90.5	724.3
2SCG3-11	L80*80*8	4361		2	8	42.1	337.0
2SCG3-12	L80*80*8	4361		2	8	42.1	337.0
2SCG3-15	L60*60*6	2447		4	16	13.3	212.2
2SCG3-15X	L60*60*6	2447		4	16	13.3	212.2
2SCG3-16	L60*60*6	2342		2	8	12.7	101.5
2SCG3-16X	L60*60*6	2342		2	8	12.7	101.5
2SCG3-17	L60*60*6	2238		2	8	12.1	97.0
2SCG3-17X	L60*60*6	2238		2	8	12.1	97.0
2SCG3-18	L60*60*6	2150		2	8	11.7	93.2
2SCG3-18X	L60*60*6	2150		2	8	11.7	93.2
2SCG3-19	L60*60*6	2082		2	8	11.3	90.3
2SCG3-19X	L60*60*6	2082		2	8	11.3	90.3
2SCG3-20	L60*60*6	2009		2	8	10.9	87.1
2SCG3-20X	L60*60*6	2009		2	8	10.9	87.1
2SCG3-21	L60*60*6	1931		2	8	10.5	83.7
2SCG3-21X	L60*60*6	1931		2	8	10.5	83.7
2SCG3-22	L60*60*6	1863		2	8	10.1	80.8
2SCG3-22X	L60*60*6	1863		2	8	10.1	80.8
2SCG3-23	L80*80*8	930		4	16	9.0	143.7
2SCG3-24	L80*80*8	950		2	8	9.2	73.4
2SCG3-25	L50*50*5	1073		2	8	4.0	32.4
2SCG3-25X	L50*50*5	1073		2	8	4.0	32.4
2SCG3-26	L60*60*6	1631		2	8	8.8	70.7
2SCG3-27	L50*50*5	732		2	8	2.8	22.1
2SCG3-28	L60*60*6	1581		2	8	8.6	68.6
2SCG3-29	L50*50*5	471		2	8	1.8	14.2
2SCG3-30	L60*60*6	1816		2	8	9.8	78.7
2SCG3-30X	L60*60*6	1816		2	8	9.8	78.7
2SCG3-31	L60*60*6	1860		8	32	10.1	322.6
2SCG3-31X	L60*60*6	1860		8	32	10.1	322.6
2SCG3-32	L60*60*6	1885		2	8	10.2	81.7
2SCG3-32X	L60*60*6	1885		2	8	10.2	81.7
2SCG3-33	L60*60*6	1910		4	16	10.4	165.6
2SCG3-33X	L60*60*6	1910		4	16	10.4	165.6
2SCG3-34	L60*60*6	1976		2	8	10.7	85.7
2SCG3-34X	L60*60*6	1976		2	8	10.7	85.7
2SCG3-35	L80*80*8	1130		4	16	10.9	174.7
2SCG3-36	L80*80*8	1230		2	8	11.9	95.1
2SCG3-36X	L80*80*8	1230		2	8	11.9	95.1
2SCG3-36Z	L60*60*6	1715		2	8	9.3	74.4
2SCG3-37	L50*50*5	876		2	8	3.3	26.4
2SCG3-38	L60*60*6	1622		2	8	8.8	70.3
2SCG3-39	L50*50*5	543		2	8	2.0	16.4
2SCG3-40	L60*60*6	1202		2	8	6.5	52.1
2SCG3-40X	L60*60*6	1202		2	8	6.5	52.1
2SCG3-41	PL8	400	200	4	16	5.0	80.4
2SCG3-42	PL8	400	206	4	16	5.2	82.8
2SCG3-43	PL8	40	205	4	16	0.5	8.2
2SCG3-44	PL8	416	204	4	16	5.3	85.3
2SCG3-45	PL8	430	194	4	16	5.2	83.8
2SCG3-46	PL8	416	172	4	16	4.5	71.9
2SCG3-47	PL8	442	179	4	16	5.0	79.5
2SCG3-48	PL8	470	167	4	16	4.9	78.9
2SCG3-49	PL10	455	178	4	16	6.4	101.7
2SCG3-50	PL10	380	178	4	16	5.3	85.0
2SCG3-51	PL10	247	185	2	8	3.6	28.7
2SCG3-52	PL8	540	185	4	16	6.3	100.4
2SCG3-53	PL8	540	185	16	64	6.3	401.5
2SCG3-54	PL8	490	185	8	32	5.7	182.2
2SCG3-55	PL8	490	185	4	16	5.7	91.1
2SCG3-56	PL10	455	224	2	8	8.0	64.0
2SCG3-57	PL10	380	224	2	8	6.7	53.5
2SCG3-58	PL10	508	455	2	8	18.1	145.2
2SCG3-59	PL10	509	380	2	8	15.2	121.5
2SCG3-60	PL10	681	185	1	4	9.9	39.6
2SCG3-61	PL8	158	135	8	32	1.3	42.9
2SCG3-70	PL8	500	100	1	4	3.1	12.6
2SCG3-71	UNP120	50		2	8	0.7	5.4
2SCG3-72	L60*60*6	844		2	8	4.6	36.6
2SCG3-73	L60*60*6	892		2	8	4.8	38.7
2SCG3-74	PL10	425	110	8	32	3.7	117.4
2SCG3-75	L100*100*10	425		4	16	6.4	102.7
2SCG3-76	PL10	485	90	16	64	3.4	219.3
2SCG3-77	L100*100*10	485		8	32	7.3	234.4
2SCG3-78	PL10	475	90	8	32	3.4	107.4
2SCG3-79	L80*80*8	475		4	16	4.6	73.4
2SCG3-79F	PL2	235	60	8	32	0.2	7.1
2SCG3-90	PL25	420	420	4	16	34.6	553.9
2SCG3-91	PL12	460	300	4	16	13.0	208.0
2SCG3-92	PL12	370	300	4	16	10.5	167.3
2SCG3-93	PL12	300	148	12	48	4.2	200.8
2SCG3-94	PL12	300	148	8	32	4.2	133.8
2SCG3-95	PL12	300	99	4	16	2.8	44.8
2SCG3-96	PL12	300	125	8	32	3.5	113.0
FPL8	PL8	50	50	45	180	0.2	42.4
					TOTAL WEIGHT (Kg)		15283.1
					WEIGHT		3820.8

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC, SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

NO : 4

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG3"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

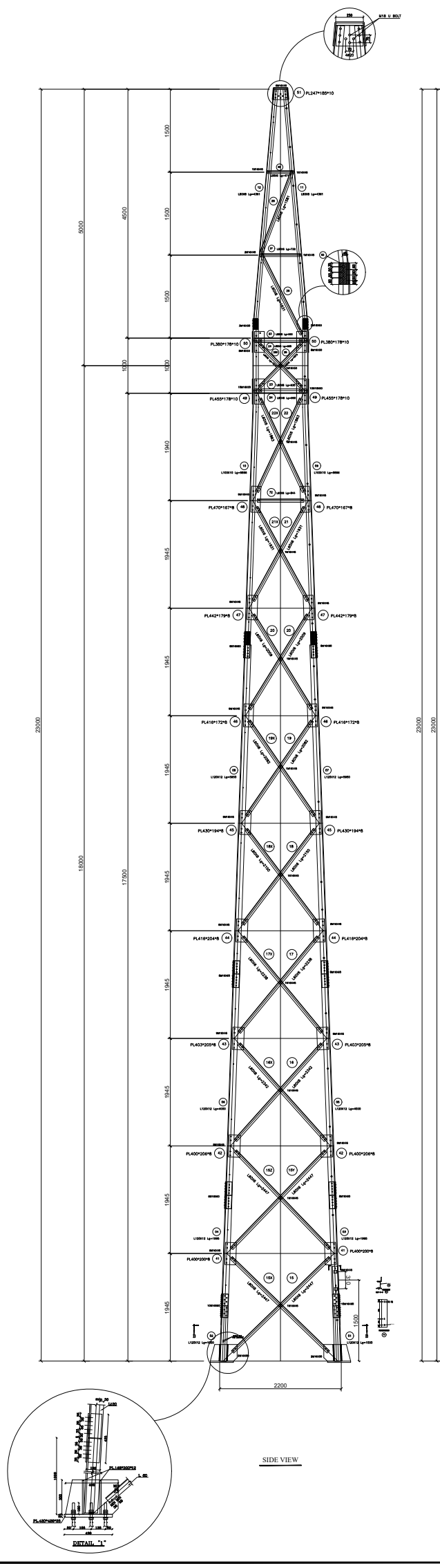
PROJECT CODE: –

SCALE: –

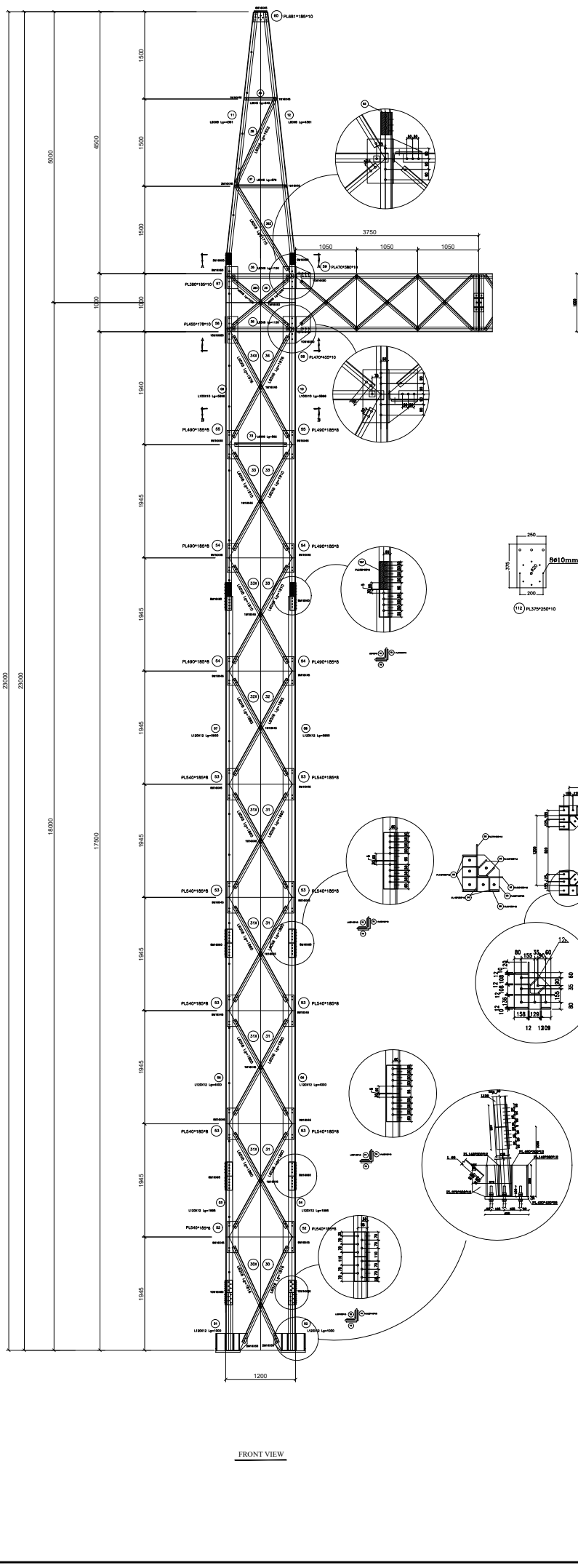
SIZE: A1

COMPUTER NO. : –

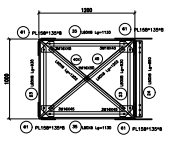
DRAWING NO. : –



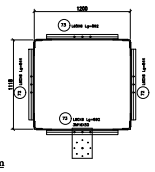
SIDE VIEW



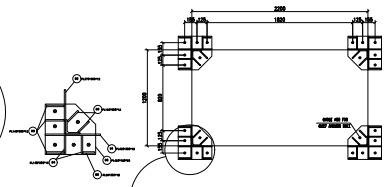
FRONT VIEW



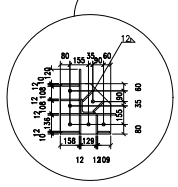
SECTION A-A



SECTION B-B



SECTION B-B



MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG8-1	L120*120*12	1000		2	8	21.6	172.8
2SCG8-2	L120*120*12	1000		2	8	21.6	172.8
2SCG8-3	L120*120*12	1995		2	8	43.1	344.7
2SCG8-4	L120*120*12	1995		2	8	43.1	344.7
2SCG8-5	L120*120*12	4000		2	8	86.4	691.2
2SCG8-6	L120*120*12	4000		2	8	86.4	691.2
2SCG8-7	L120*120*12	5950		2	8	128.5	1028.2
2SCG8-8	L120*120*12	5950		2	8	128.5	1028.2
2SCG8-9	L100*100*10	5896		2	8	89.0	712.2
2SCG8-10	L100*100*10	5896		2	8	89.0	712.2
2SCG8-11	L80*80*8	4361		2	8	42.1	337.0
2SCG8-12	L80*80*8	4361		2	8	42.1	337.0
2SCG8-15	L60*60*6	2447		4	16	13.3	212.2
2SCG8-15X	L60*60*6	2447		4	16	13.3	212.2
2SCG8-16	L60*60*6	2342		2	8	12.7	101.5
2SCG8-16X	L60*60*6	2342		2	8	12.7	101.5
2SCG8-17	L60*60*6	2238		2	8	12.1	97.0
2SCG8-17X	L60*60*6	2238		2	8	12.1	97.0
2SCG8-18	L60*60*6	2150		2	8	11.7	93.2
2SCG8-18X	L60*60*6	2150		2	8	11.7	93.2
2SCG8-19	L60*60*6	2082		2	8	11.3	90.3
2SCG8-19X	L60*60*6	2082		2	8	11.3	90.3
2SCG8-20	L60*60*6	2009		2	8	10.9	87.1
2SCG8-20X	L60*60*6	2009		2	8	10.9	87.1
2SCG8-21	L60*60*6	1931		2	8	10.5	83.7
2SCG8-21X	L60*60*6	1931		2	8	10.5	83.7
2SCG8-22	L60*60*6	1863		2	8	10.1	80.8
2SCG8-22X	L60*60*6	1863		2	8	10.1	80.8
2SCG8-23	L80*80*8	930		4	16	9.0	143.7
2SCG8-24	L80*80*8	950		2	8	9.2	73.4
2SCG8-25	L60*60*6	1073		2	8	5.8	46.5
2SCG8-25X	L60*60*6	1073		2	8	5.8	46.5
2SCG8-26	L60*60*6	1631		2	8	8.8	70.7
2SCG8-27	L50*50*5	732		2	8	2.8	22.1
2SCG8-28	L60*60*6	1581		2	8	8.6	68.6
2SCG8-29	L50*50*5	471		2	8	1.8	14.2
2SCG8-30	L60*60*6	1816		2	8	9.8	78.7
2SCG8-30X	L60*60*6	1816		2	8	9.8	78.7
2SCG8-31	L60*60*6	1860		8	32	10.1	322.6
2SCG8-31X	L60*60*6	1860		8	32	10.1	322.6
2SCG8-32	L60*60*6	1885		2	8	10.2	81.7
2SCG8-32X	L60*60*6	1885		2	8	10.2	81.7
2SCG8-33	L60*60*6	1910		4	16	10.4	165.6
2SCG8-33X	L60*60*6	1910		4	16	10.4	165.6
2SCG8-34	L60*60*6	1976		2	8	10.7	85.7
2SCG8-34X	L60*60*6	1976		2	8	10.7	85.7
2SCG8-35	L80*80*8	1130		4	16	10.9	174.7
2SCG8-36	L60*60*6	1230		2	8	6.7	53.3
2SCG8-36X	L60*60*6	1230		2	8	6.7	53.3
2SCG8-36Z	L60*60*6	1715		2	8	9.3	74.4
2SCG8-37	L50*50*5	876		2	8	3.3	26.4
2SCG8-38	L60*60*6	1622		2	8	8.8	70.3
2SCG8-39	L50*50*5	543		2	8	2.0	16.4
2SCG8-40	L60*60*6	1202		2	8	6.5	52.1
2SCG8-40X	L60*60*6	1202		2	8	6.5	52.1
2SCG8-41	PL8	400	200	4	16	5.0	80.4
2SCG8-42	PL8	400	206	4	16	5.2	82.8
2SCG8-43	PL8	40	205	4	16	0.5	8.2
2SCG8-44	PL8	416	204	4	16	5.3	85.3
2SCG8-45	PL8	430	194	4	16	5.2	83.8
2SCG8-46	PL8	416	172	4	16	4.5	71.9
2SCG8-47	PL8	442	179	4	16	5.0	79.5
2SCG8-48	PL8	470	167	4	16	4.9	78.9
2SCG8-49	PL10	455	178	4	16	6.4	101.7
2SCG8-50	PL10	380	178	4	16	5.3	85.0
2SCG8-51	PL10	247	185	2	8	3.6	28.7
2SCG8-52	PL8	540	185	4	16	6.3	100.4
2SCG8-53	PL8	540	185	16	64	6.3	401.5
2SCG8-54	PL8	490	185	8	32	5.7	182.2
2SCG8-55	PL8	490	185	4	16	5.7	91.1
2SCG8-56	PL10	455	224	2	8	8.0	64.0
2SCG8-57	PL10	380	224	2	8	6.7	53.5
2SCG8-58	PL10	508	455	2	8	18.1	145.2
2SCG8-59	PL10	509	380	2	8	15.2	121.5
2SCG8-60	PL10	681	185	1	4	9.9	39.6
2SCG8-61	PL8	158	135	8	32	1.3	42.9
2SCG8-70	PL8	500	100	1	4	3.1	12.6
2SCG8-71	UNP120	50		2	8	0.7	5.4
2SCG8-72	L60*60*6	844		2	8	4.6	36.6
2SCG8-73	L60*60*6	892		2	8	4.8	38.7
2SCG8-74	PL10	425	110	8	32	3.7	117.4
2SCG8-75	L100*100*10	425		4	16	6.4	102.7
2SCG8-76	PL10	485	90	16	64	3.4	219.3
2SCG8-77	L100*100*10	485		8	32	7.3	234.4
2SCG8-78	PL10	475	90	8	32	3.4	107.4
2SCG8-79	L80*80*8	475		4	16	4.6	73.4
2SCG8-79F	PL2	235	60	8	32	0.2	7.1
2SCG8-90	PL25	420	420	4	16	34.6	553.9
2SCG8-91	PL12	460	300	4	16	13.0	208.0
2SCG8-92	PL12	370	300	4	16	10.5	167.3
2SCG8-93	PL12	300	148	12	48	4.2	200.8
2SCG8-94	PL12	300	148	8	32	4.2	133.8
2SCG8-95	PL12	300	99	4	16	2.8	44.8
2SCG8-96	PL12	300	125	8	32	3.5	113.0
FPL8	PL8	50	50	45	180	0.2	28.3
					TOTAL WEIGHT (Kg)		15224.2
					WEIGHT		3806.1

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC, SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG8"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

PROJECT CODE: –

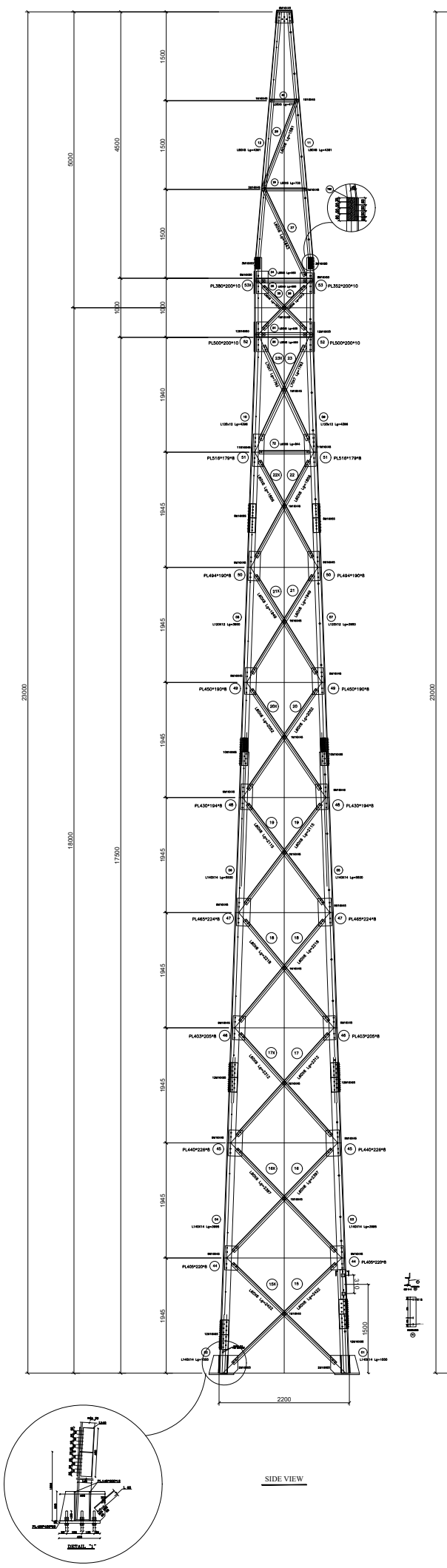
SCALE: –

SIZE: A1

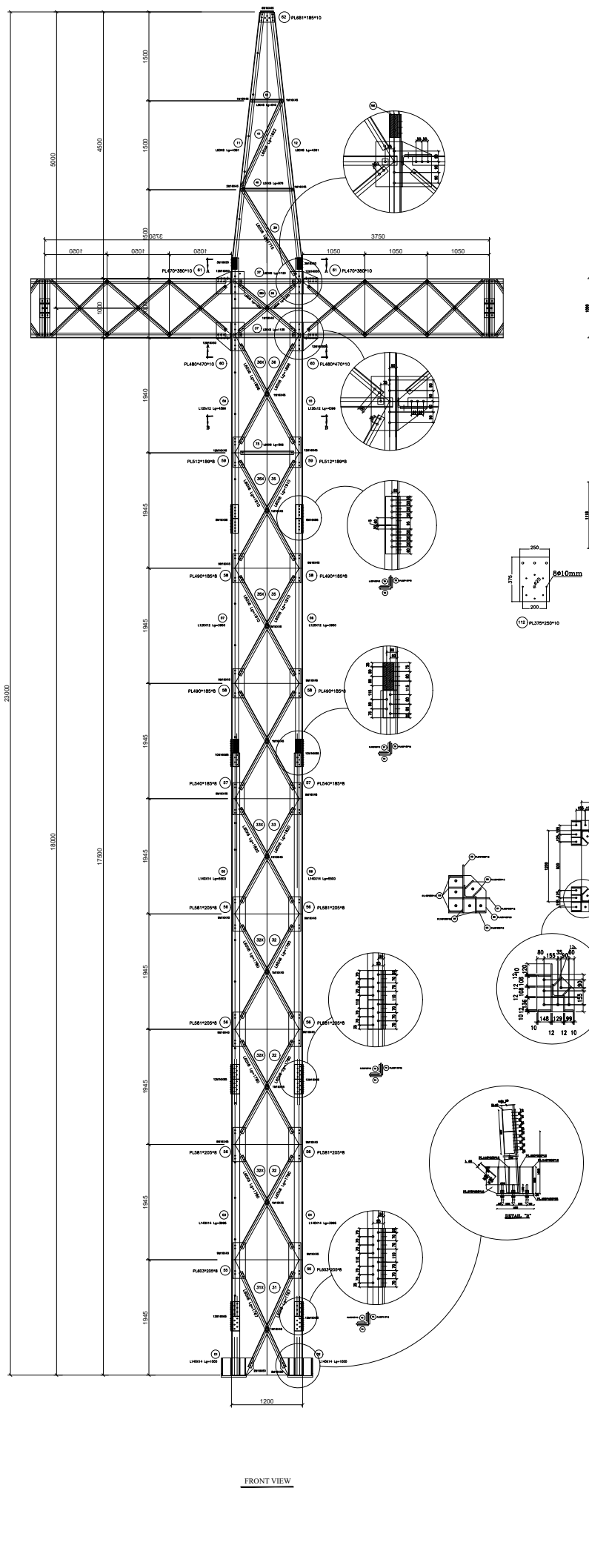
COMPUTER NO. : –

DRAWING NO. : –

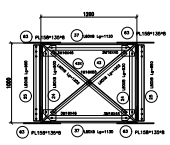
NO :4



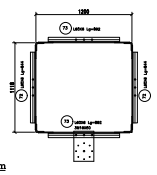
SIDE VIEW



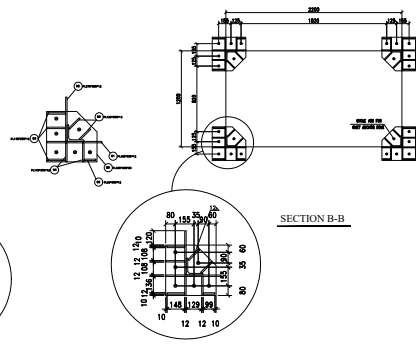
FRONT VIEW



SECTION A-A



SECTION B-B



SECTION B-B

DETAIL "A"

DETAIL "B"

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG7-1	L140*140*14	1000		2	2	29.4	58.8
2SCG7-2	L140*140*14	1000		2	2	29.4	58.8
2SCG7-3	L140*140*14	3995		2	2	117.5	234.9
2SCG7-4	L140*140*14	3995		2	2	117.5	234.9
2SCG7-5	L140*140*14	5500		2	2	161.7	323.4
2SCG7-6	L140*140*14	5500		2	2	161.7	323.4
2SCG7-7	L120*120*12	3950		2	2	85.3	170.6
2SCG7-8	L120*120*12	3950		2	2	85.3	170.6
2SCG7-9	L100*100*10	4396		2	2	66.4	132.8
2SCG7-10	L100*100*10	4396		2	2	66.4	132.8
2SCG7-11	L80*80*8	4361		2	2	42.1	84.3
2SCG7-12	L80*80*8	4361		2	2	42.1	84.3
2SCG7-15	L60*60*6	2422		2	2	13.1	26.3
2SCG7-15X	L60*60*6	2422		2	2	13.1	26.3
2SCG7-16	L60*60*6	2397		2	2	13.0	26.0
2SCG7-16X	L60*60*6	2397		2	2	13.0	26.0
2SCG7-17	L60*60*6	2312		2	2	12.5	25.1
2SCG7-17X	L60*60*6	2312		2	2	12.5	25.1
2SCG7-18	L60*60*6	2218		2	2	12.0	24.0
2SCG7-18X	L60*60*6	2218		2	2	12.0	24.0
2SCG7-19	L60*60*6	2115		2	2	11.5	22.9
2SCG7-19X	L60*60*6	2115		2	2	11.5	22.9
2SCG7-20	L60*60*6	2052		2	2	11.1	22.2
2SCG7-20X	L60*60*6	2052		2	2	11.1	22.2
2SCG7-21	L60*60*6	1949		2	2	10.6	21.1
2SCG7-21X	L60*60*6	1949		2	2	10.6	21.1
2SCG7-22	L60*60*6	1891		2	2	10.2	20.5
2SCG7-22X	L60*60*6	1891		2	2	10.2	20.5
2SCG7-23	L60*60*6	1863		4	4	10.1	40.4
2SCG7-23X	L60*60*6	1863		4	4	10.1	40.4
2SCG7-24	L80*80*8	950		4	4	9.2	36.7
2SCG7-25	L80*80*8	930		8	8	9.0	71.9
2SCG7-26	L60*60*6	1073		2	2	5.8	11.6
2SCG7-26X	L60*60*6	1073		2	2	5.8	11.6
2SCG7-26	L60*60*6	1631		2	2	8.8	17.7
2SCG7-27	L50*50*5	1631		2	2	6.1	12.3
2SCG7-28	L60*60*6	732		2	2	4.0	7.9
2SCG7-29	L50*50*5	1581		2	2	6.0	11.9
2SCG7-30	L50*50*5	471		2	2	1.8	3.6
2SCG7-31	L70*70*7	1767		2	2	13.0	26.1
2SCG7-31X	L70*70*7	1767		2	2	9.6	19.2
2SCG7-32	L60*60*6	1780		6	6	9.6	57.9
2SCG7-32X	L60*60*6	1780		6	6	9.6	57.9
2SCG7-33	L60*60*6	1820		2	2	9.9	19.7
2SCG7-33X	L60*60*6	1820		2	2	9.9	19.7
2SCG7-34	L60*60*6	1885		2	2	10.2	20.4
2SCG7-34X	L60*60*6	1885		2	2	10.2	20.4
2SCG7-35	L60*60*6	1910		4	4	10.4	41.4
2SCG7-35X	L60*60*6	1910		4	4	10.4	41.4
2SCG7-36	L60*60*6	1976		4	4	10.7	42.8
2SCG7-36X	L60*60*6	1976		4	4	10.7	42.8
2SCG7-37	L80*80*8	1130		4	4	10.9	43.7
2SCG7-38	L60*60*6	1230		2	2	6.7	13.3
2SCG7-38X	L60*60*6	1230		2	2	6.7	13.3
2SCG7-39	L50*50*5	1715		2	2	6.5	12.9
2SCG7-40	L50*50*5	876		2	2	3.3	6.6
2SCG7-41	L50*50*5	1622		2	2	6.1	12.2
2SCG7-42	L50*50*5	543		2	2	2.0	4.1
2SCG7-43	L60*60*6	1202		2	2	6.5	13.0
2SCG7-43X	L60*60*6	1202		2	2	6.5	13.0
2SCG7-44	PL8	400	220	4	4	5.5	22.1
2SCG7-45	PL8	440	226	4	4	6.2	25.0
2SCG7-46	PL8	403	205	4	4	5.2	20.8
2SCG7-47	PL8	465	224	4	4	6.5	26.2
2SCG7-48	PL8	430	194	4	4	5.2	21.0
2SCG7-49	PL8	450	190	4	4	5.4	21.5
2SCG7-50	PL8	494	190	4	4	5.9	23.6
2SCG7-51	PL8	516	179	4	4	5.8	23.2
2SCG7-52	PL10	500	178	4	4	7.0	27.9
2SCG7-53	PL10	380	178	4	4	5.3	21.2
2SCG7-54	PL10	247	185	2	2	3.6	7.2
2SCG7-55	PL8	603	205	4	4	7.8	31.1
2SCG7-56	PL8	581	205	12	12	7.5	89.8
2SCG7-57	PL8	540	185	4	4	6.3	25.1
2SCG7-58	PL8	490	185	8	8	5.7	45.5
2SCG7-59	PL8	512	189	4	4	6.1	24.3
2SCG7-60	PL10	480	470	4	4	17.7	70.8
2SCG7-61	PL10	470	380	4	4	14.0	56.1
2SCG7-62	PL10	681	185	1	1	9.9	9.9
2SCG7-63	PL10	158	135	8	8	1.7	13.4
2SCG7-72	L60*60*6	844		2	2	4.6	9.1
2SCG7-73	L60*60*6	892		2	2	4.8	9.7
2SCG7-74	PL12	495	110	16	16	5.1	82.1
2SCG7-75	PL12	495	90	8	8	4.2	33.6
2SCG7-76	PL12	465	100	8	8	4.4	35.0
2SCG7-77	PL12	465	80	8	8	3.5	28.0
2SCG7-77F	PL2	230	80	8	8	0.3	2.3
2SCG7-78	PL10	475	90	8	8	3.4	26.8
2SCG7-79	L80*80*8	475		4	4	4.6	18.4
2SCG7-79F	PL2	235	60	8	8	0.2	1.8
2SCG7-90	PL25	420	420	4	4	34.6	138.5
2SCG7-91	PL12	460	300	4	4	13.0	52.0
2SCG7-92	PL12	370	300	4	4	10.5	41.8
2SCG7-93	PL12	300	148	12	12	4.2	50.2
2SCG7-94	PL12	300	148	8	8	4.2	33.5
2SCG7-95	PL12	300	99	4	4	2.8	11.2
2SCG7-96	PL12	300	125	8	8	3.5	28.3
FPL8	PL8	50	50	45	45	0.2	7.1
					TOTAL WEIGHT (Kg)		4408.7
					WEIGHT		2204.3

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC. SHALL BE MARKED WITH THE POLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

NO : 1

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

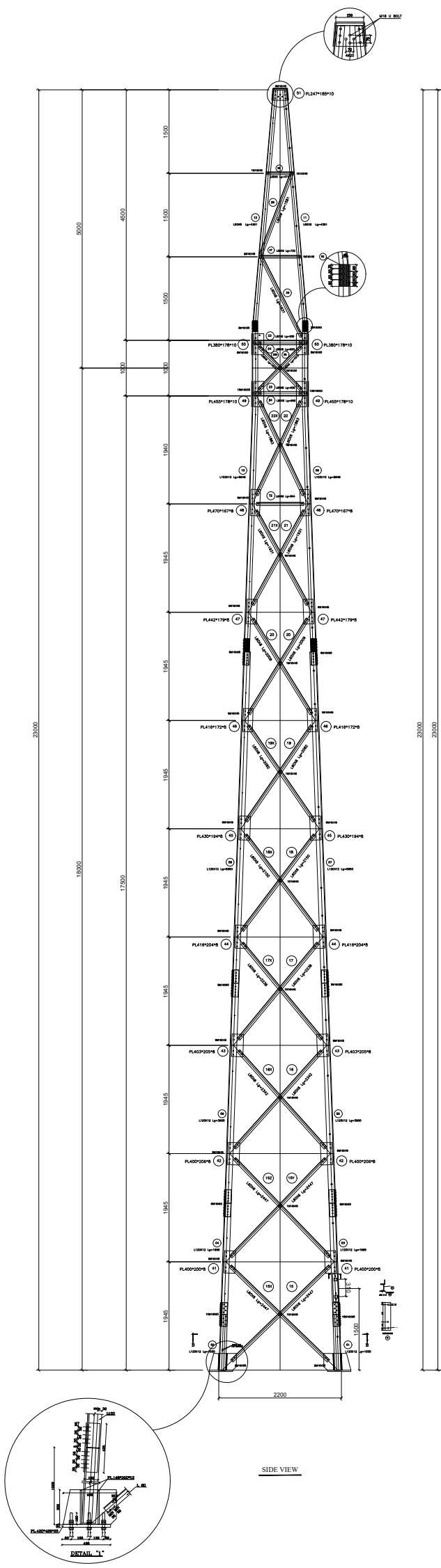
CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

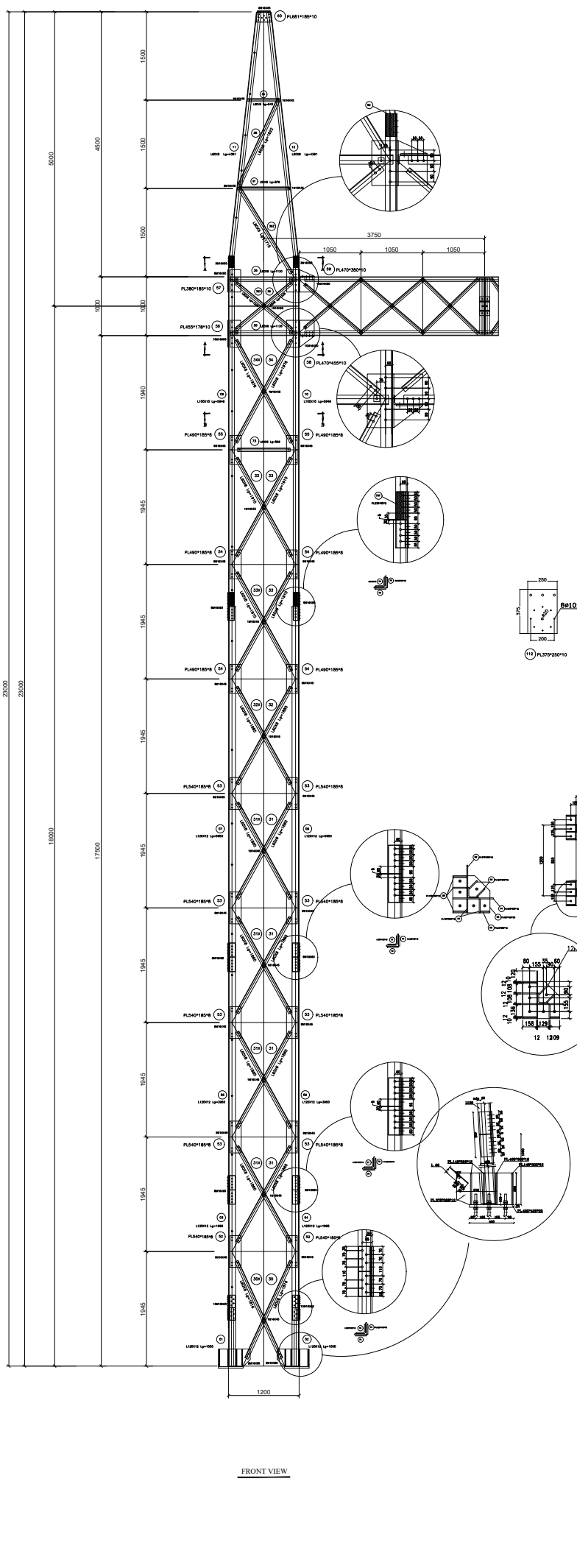
PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG7"

	NAME	PROJECT CODE:		COMPUTER NO. :
DESIGNED:	–	—		—
DRAWN:	–	SCALE: –	SIZE: A1	DRAWING NO. : —
CHECKED:	Z.KH			
APPROVED:	–			

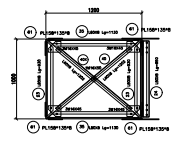


SIDE VIEW

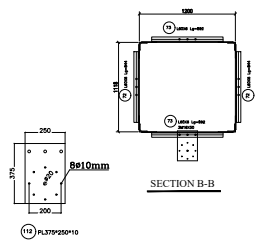


FRONT VIEW

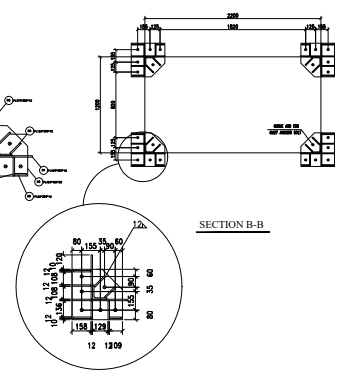
DETAIL "1"



SECTION A-A



SECTION B-B



SECTION B-B

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG6-1	L120*120*12	1000		2	4	21.6	86.4
2SCG6-2	L120*120*12	1000		2	4	21.6	86.4
2SCG6-3	L120*120*12	1995		2	4	43.1	172.4
2SCG6-4	L120*120*12	1995		2	4	43.1	172.4
2SCG6-5	L120*120*12	3950		2	4	85.3	341.3
2SCG6-6	L120*120*12	3950		2	4	85.3	341.3
2SCG6-7	L120*120*12	5950		2	4	128.5	514.1
2SCG6-8	L120*120*12	5950		2	4	128.5	514.1
2SCG6-9	L100*100*10	5946		2	4	89.8	359.1
2SCG6-10	L100*100*10	5946		2	4	89.8	359.1
2SCG6-11	L80*80*8	4361		2	4	42.1	168.5
2SCG6-12	L80*80*8	4361		2	4	42.1	168.5
2SCG6-15	L60*60*6	2447		4	8	13.3	106.1
2SCG6-15X	L60*60*6	2447		4	8	13.3	106.1
2SCG6-16	L60*60*6	2342		2	4	12.7	50.8
2SCG6-16X	L60*60*6	2342		2	4	12.7	50.8
2SCG6-17	L60*60*6	2238		2	4	12.1	48.5
2SCG6-17X	L60*60*6	2238		2	4	12.1	48.5
2SCG6-18	L60*60*6	2150		2	4	11.7	46.6
2SCG6-18X	L60*60*6	2150		2	4	11.7	46.6
2SCG6-19	L60*60*6	2082		2	4	11.3	45.1
2SCG6-19X	L60*60*6	2082		2	4	11.3	45.1
2SCG6-20	L60*60*6	2009		2	4	10.9	43.6
2SCG6-20X	L60*60*6	2009		2	4	10.9	43.6
2SCG6-21	L60*60*6	1931		2	4	10.5	41.9
2SCG6-21X	L60*60*6	1931		2	4	10.5	41.9
2SCG6-22	L60*60*6	1863		2	4	10.1	40.4
2SCG6-22X	L60*60*6	1863		2	4	10.1	40.4
2SCG6-23	L80*80*8	930		4	8	9.0	71.9
2SCG6-24	L80*80*8	950		2	4	9.2	36.7
2SCG6-25	L60*60*6	1073		2	4	5.8	23.3
2SCG6-25X	L60*60*6	1073		2	4	5.8	23.3
2SCG6-26	L60*60*6	1631		2	4	8.8	35.4
2SCG6-27	L50*50*5	732		2	4	2.8	11.0
2SCG6-28	L60*60*6	1581		2	4	8.6	34.3
2SCG6-29	L50*50*5	471		2	4	1.8	7.1
2SCG6-30	L60*60*6	1816		2	4	9.8	39.4
2SCG6-30X	L60*60*6	1816		2	4	9.8	39.4
2SCG6-31	L60*60*6	1860		8	16	10.1	161.3
2SCG6-31X	L60*60*6	1860		8	16	10.1	161.3
2SCG6-32	L60*60*6	1885		2	4	10.2	40.9
2SCG6-32X	L60*60*6	1885		2	4	10.2	40.9
2SCG6-33	L60*60*6	1910		4	8	10.4	82.8
2SCG6-33X	L60*60*6	1910		4	8	10.4	82.8
2SCG6-34	L60*60*6	1976		2	4	10.7	42.8
2SCG6-34X	L60*60*6	1976		2	4	10.7	42.8
2SCG6-35	L80*80*8	1130		4	8	10.9	87.3
2SCG6-36	L80*80*8	1230		2	4	11.9	47.5
2SCG6-36X	L80*80*8	1230		2	4	11.9	47.5
2SCG6-36Z	L60*60*6	1715		2	4	9.3	37.2
2SCG6-37	L50*50*5	876		2	4	3.3	13.2
2SCG6-38	L60*60*6	1622		2	4	8.8	35.2
2SCG6-39	L50*50*5	543		2	4	2.0	8.2
2SCG6-40	L60*60*6	1202		2	4	6.5	26.1
2SCG6-40X	L60*60*6	1202		2	4	6.5	26.1
2SCG6-41	PL8	400	200	4	8	5.0	40.2
2SCG6-42	PL8	400	206	4	8	5.2	41.4
2SCG6-43	PL8	40	205	4	8	0.5	4.1
2SCG6-44	PL8	416	204	4	8	5.3	42.6
2SCG6-45	PL8	430	194	4	8	5.2	41.9
2SCG6-46	PL8	416	172	4	8	4.5	35.9
2SCG6-47	PL8	442	179	4	8	5.0	39.7
2SCG6-48	PL8	470	167	4	8	4.9	39.4
2SCG6-49	PL10	455	178	4	8	6.4	50.9
2SCG6-50	PL10	380	178	4	8	5.3	42.5
2SCG6-51	PL10	247	185	2	4	3.6	14.3
2SCG6-52	PL8	540	185	4	8	6.3	50.2
2SCG6-53	PL8	540	185	16	32	6.3	200.8
2SCG6-54	PL8	490	185	8	16	5.7	91.1
2SCG6-55	PL8	490	185	4	8	5.7	45.5
2SCG6-56	PL10	455	224	2	4	8.0	32.0
2SCG6-57	PL10	380	224	2	4	6.7	26.7
2SCG6-58	PL10	508	455	2	4	18.1	72.6
2SCG6-59	PL10	509	380	2	4	15.2	60.7
2SCG6-60	PL10	681	185	1	2	9.9	19.8
2SCG6-61	PL8	158	135	8	16	1.3	21.4
2SCG6-70	PL8	500	100	1	2	3.1	6.3
2SCG6-71	UNP120	50		2	4	0.7	2.7
2SCG6-72	L60*60*6	844		2	4	4.6	18.3
2SCG6-73	L60*60*6	892		2	4	4.8	19.3
2SCG6-74	PL10	425	110	8	16	3.7	58.7
2SCG6-75	L100*100*10	425		4	8	6.4	51.3
2SCG6-76	PL10	485	90	16	32	3.4	109.6
2SCG6-77	L100*100*10	485		8	16	7.3	117.2
2SCG6-78	PL10	475	90	8	16	3.4	53.7
2SCG6-79	L80*80*8	475		4	8	4.6	36.7
2SCG6-79F	PL2	235	60	8	16	0.2	3.5
2SCG6-90	PL25	420	420	4	8	34.6	276.9
2SCG6-91	PL12	460	300	4	8	13.0	104.0
2SCG6-92	PL12	370	300	4	8	10.5	83.6
2SCG6-93	PL12	300	148	12	24	4.2	100.4
2SCG6-94	PL12	300	148	8	16	4.2	66.9
2SCG6-95	PL12	300	99	4	8	2.8	22.4
2SCG6-96	PL12	300	125	8	16	3.5	56.5
FPL8	PL8	50	50	45	90	0.2	21.2
					TOTAL WEIGHT (Kg)		7658.3
					WEIGHT		3829.1

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC, SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG6"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

PROJECT CODE: –

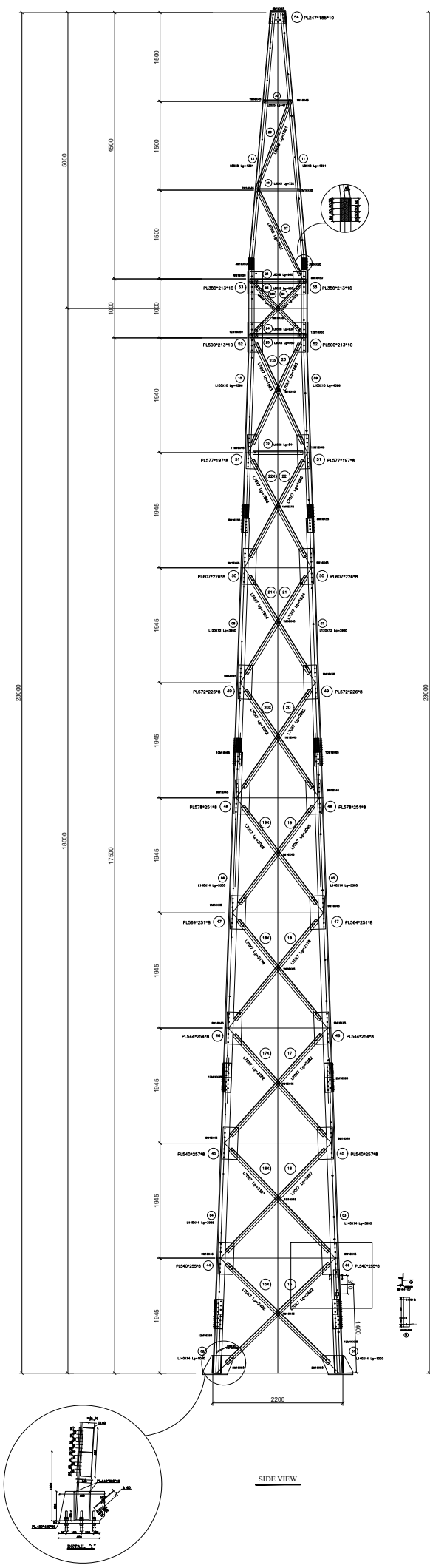
SCALE: –

SIZE: A1

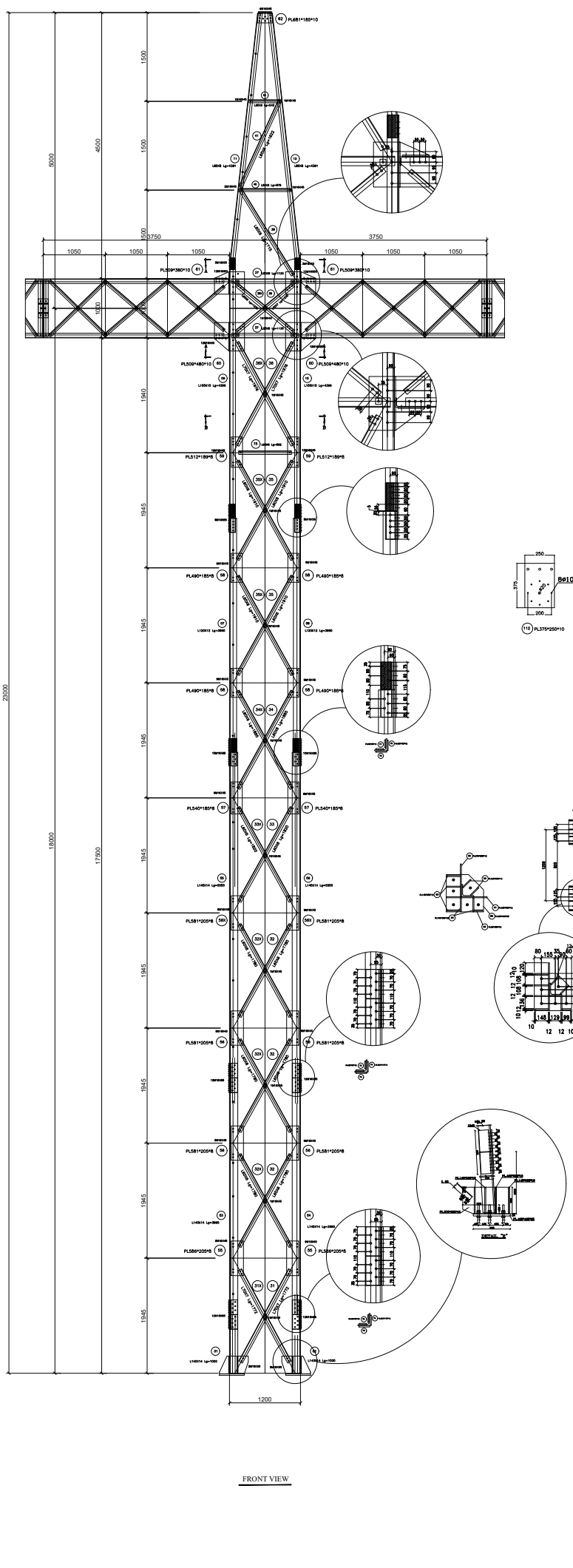
COMPUTER NO. : –

DRAWING NO. : –

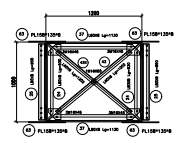
NO : 2



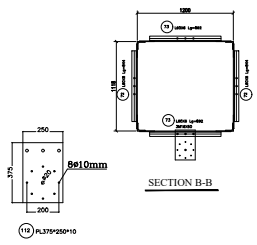
SIDE VIEW



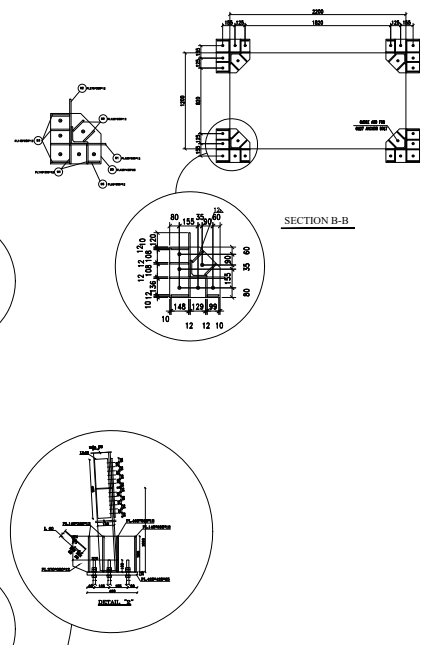
FRONT VIEW



SECTION A-A



SECTION B-B



SECTION B-B

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG5-1	L140*140*14	1000		2	4	29.4	117.6
2SCG5-2	L140*140*14	1000		2	4	29.4	117.6
2SCG5-3	L140*140*14	3995		2	4	117.5	469.8
2SCG5-4	L140*140*14	3995		2	4	117.5	469.8
2SCG5-5	L140*140*14	5500		2	4	161.7	646.8
2SCG5-6	L140*140*14	5500		2	4	161.7	646.8
2SCG5-7	L120*120*12	3950		2	4	85.3	341.3
2SCG5-8	L120*120*12	3950		2	4	85.3	341.3
2SCG5-9	L100*100*10	4396		2	4	66.4	265.5
2SCG5-10	L100*100*10	4396		2	4	66.4	265.5
2SCG5-11	L80*80*8	4361		2	4	42.1	168.5
2SCG5-12	L80*80*8	4361		2	4	42.1	168.5
2SCG5-15	L60*60*6	2422		2	4	13.1	52.5
2SCG5-15X	L60*60*6	2422		2	4	13.1	52.5
2SCG5-16	L60*60*6	2397		2	4	13.0	52.0
2SCG5-16X	L60*60*6	2397		2	4	13.0	52.0
2SCG5-17	L60*60*6	2312		2	4	12.5	50.1
2SCG5-17X	L60*60*6	2312		2	4	12.5	50.1
2SCG5-18	L60*60*6	2218		2	4	12.0	48.1
2SCG5-18X	L60*60*6	2218		2	4	12.0	48.1
2SCG5-19	L60*60*6	2115		2	4	11.5	45.9
2SCG5-19X	L60*60*6	2115		2	4	11.5	45.9
2SCG5-20	L60*60*6	2052		2	4	11.1	44.5
2SCG5-20X	L60*60*6	2052		2	4	11.1	44.5
2SCG5-21	L60*60*6	1949		2	4	10.6	42.3
2SCG5-21X	L60*60*6	1949		2	4	10.6	42.3
2SCG5-22	L60*60*6	1891		2	4	10.2	41.0
2SCG5-22X	L60*60*6	1891		2	4	10.2	41.0
2SCG5-23	L60*60*6	1863		4	8	10.1	80.8
2SCG5-23X	L60*60*6	1863		4	8	10.1	80.8
2SCG5-24	L80*80*8	950		4	8	9.2	73.4
2SCG5-25	L80*80*8	930		8	16	9.0	143.7
2SCG5-26	L60*60*6	1073		2	4	5.8	23.3
2SCG5-26X	L60*60*6	1073		2	4	5.8	23.3
2SCG5-26	L60*60*6	1631		2	4	8.8	35.4
2SCG5-27	L50*50*5	1631		2	4	6.1	24.6
2SCG5-28	L60*60*6	732		2	4	4.0	15.9
2SCG5-29	L50*50*5	1581		2	4	6.0	23.8
2SCG5-30	L50*50*5	471		2	4	1.8	7.1
2SCG5-31	L70*70*7	1767		2	4	13.0	52.2
2SCG5-31X	L70*70*7	1767		2	4	9.6	38.3
2SCG5-32	L60*60*6	1780		6	12	9.6	115.8
2SCG5-32X	L60*60*6	1780		6	12	9.6	115.8
2SCG5-33	L60*60*6	1820		2	4	9.9	39.5
2SCG5-33X	L60*60*6	1820		2	4	9.9	39.5
2SCG5-34	L60*60*6	1885		2	4	10.2	40.9
2SCG5-34X	L60*60*6	1885		2	4	10.2	40.9
2SCG5-35	L60*60*6	1910		4	8	10.4	82.8
2SCG5-35X	L60*60*6	1910		4	8	10.4	82.8
2SCG5-36	L60*60*6	1976		4	8	10.7	85.7
2SCG5-36X	L60*60*6	1976		4	8	10.7	85.7
2SCG5-37	L80*80*8	1130		4	8	10.9	87.3
2SCG5-38	L60*60*6	1230		2	4	6.7	26.7
2SCG5-38X	L60*60*6	1230		2	4	6.7	26.7
2SCG5-39	L50*50*5	1715		2	4	6.5	25.9
2SCG5-40	L50*50*5	876		2	4	3.3	13.2
2SCG5-41	L50*50*5	1622		2	4	6.1	24.5
2SCG5-42	L50*50*5	543		2	4	2.0	8.2
2SCG5-43	L60*60*6	1202		2	4	6.5	26.1
2SCG5-43X	L60*60*6	1202		2	4	6.5	26.1
2SCG5-44	PL8	400	220	4	8	5.5	44.2
2SCG5-45	PL8	440	226	4	8	6.2	50.0
2SCG5-46	PL8	403	205	4	8	5.2	41.5
2SCG5-47	PL8	465	224	4	8	6.5	52.3
2SCG5-48	PL8	430	194	4	8	5.2	41.9
2SCG5-49	PL8	450	190	4	8	5.4	43.0
2SCG5-50	PL8	494	190	4	8	5.9	47.2
2SCG5-51	PL8	516	179	4	8	5.8	46.4
2SCG5-52	PL10	500	178	4	8	7.0	55.9
2SCG5-53	PL10	380	178	4	8	5.3	42.5
2SCG5-54	PL10	247	185	2	4	3.6	14.3
2SCG5-55	PL8	603	205	4	8	7.8	62.1
2SCG5-56	PL8	581	205	12	24	7.5	179.5
2SCG5-57	PL8	540	185	4	8	6.3	50.2
2SCG5-58	PL8	490	185	8	16	5.7	91.1
2SCG5-59	PL8	512	189	4	8	6.1	48.6
2SCG5-60	PL10	480	470	4	8	17.7	141.7
2SCG5-61	PL10	470	380	4	8	14.0	112.2
2SCG5-62	PL10	681	185	1	2	9.9	19.8
2SCG5-63	PL10	158	135	8	16	1.7	26.8
2SCG5-72	L60*60*6	844		2	4	4.6	18.3
2SCG5-73	L60*60*6	892		2	4	4.8	19.3
2SCG5-74	PL12	495	110	16	32	5.1	164.1
2SCG5-75	PL12	495	90	8	16	4.2	67.1
2SCG5-76	PL12	465	100	8	16	4.4	70.1
2SCG5-77	PL12	465	80	8	16	3.5	56.1
2SCG5-77F	PL2	230	80	8	16	0.3	4.6
2SCG5-78	PL10	475	90	8	16	3.4	53.7
2SCG5-79	L80*80*8	475		4	8	4.6	36.7
2SCG5-79F	PL2	235	60	8	16	0.2	3.5
2SCG5-90	PL25	420	420	4	8	34.6	276.9
2SCG5-91	PL12	460	300	4	8	13.0	104.0
2SCG5-92	PL12	370	300	4	8	10.5	83.6
2SCG5-93	PL12	300	148	12	24	4.2	100.4
2SCG5-94	PL12	300	148	8	16	4.2	66.9
2SCG5-95	PL12	300	99	4	8	2.8	22.4
2SCG5-96	PL12	300	125	8	16	3.5	56.5
FPL8	PL8	50	50	45	90	0.2	14.1
							8817.4
							4408.7

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC, SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

NO : 2

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

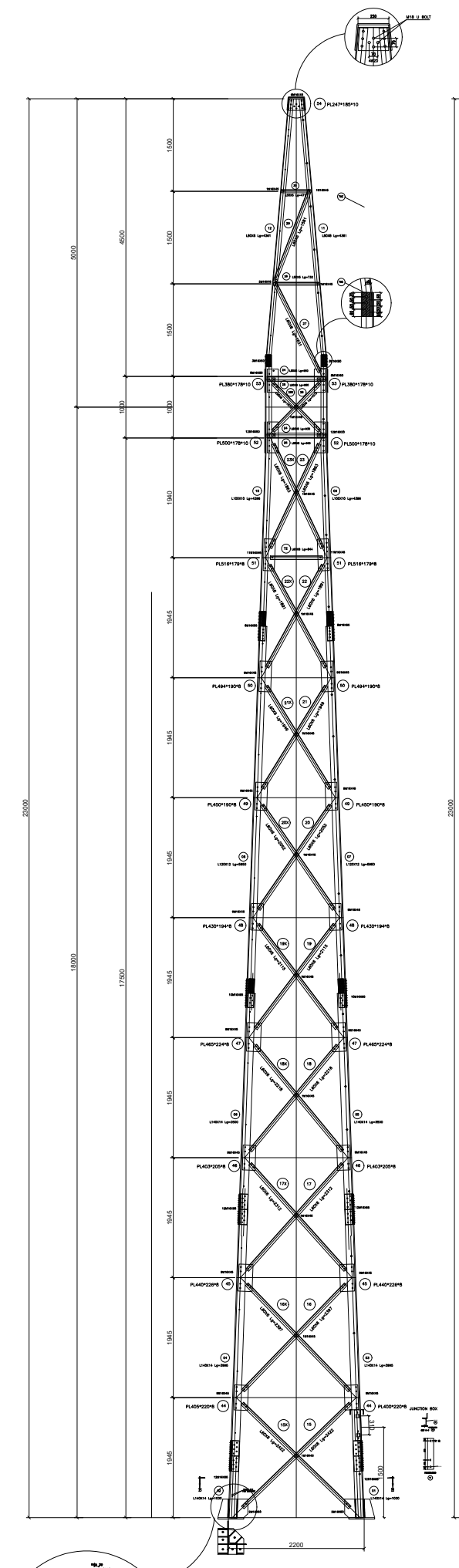
Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

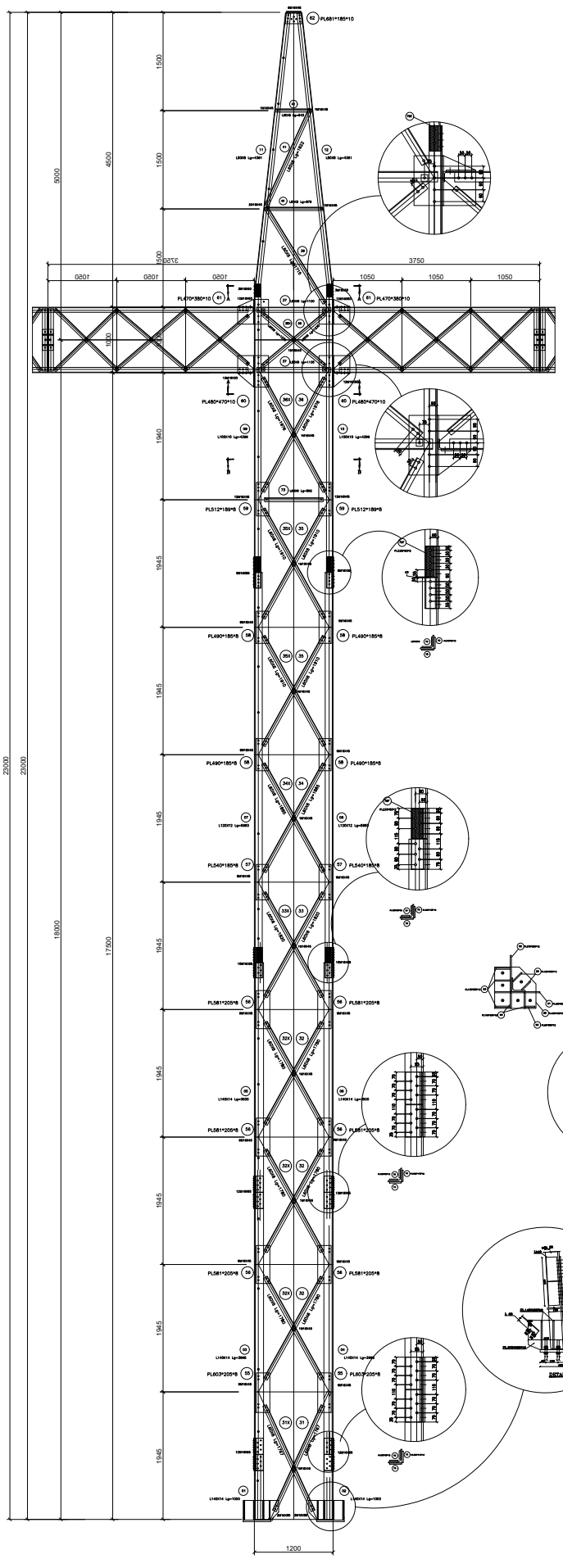
TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG5"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

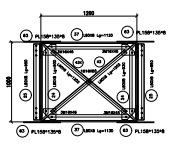
PROJECT CODE: — | COMPUTER NO. : — | SCALE: – | SIZE: A1 | DRAWING NO. : —



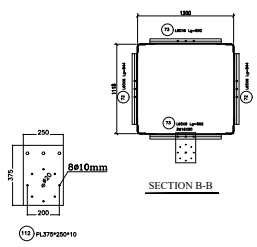
SIDE VIEW



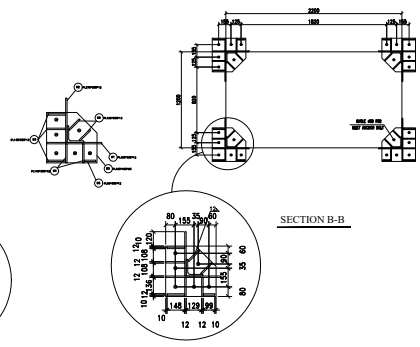
FRONT VIEW



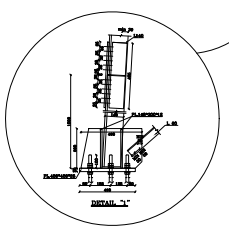
SECTION A-A



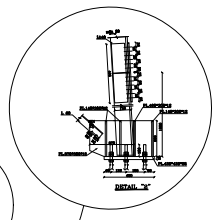
SECTION B-B



SECTION B-B



DETAIL "L"



DETAIL "N"

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG2-1	L140*140*14	1000		2	12	29.4	352.8
2SCG2-2	L140*140*14	1000		2	12	29.4	352.8
2SCG2-3	L140*140*14	3995		2	12	117.5	1409.4
2SCG2-4	L140*140*14	3995		2	12	117.5	1409.4
2SCG2-5	L140*140*14	3500		2	12	102.9	1234.8
2SCG2-6	L140*140*14	3500		2	12	102.9	1234.8
2SCG2-7	L120*120*12	5950		2	12	128.5	1542.2
2SCG2-8	L120*120*12	5950		2	12	128.5	1542.2
2SCG2-9	L100*100*10	4396		2	12	66.4	796.6
2SCG2-10	L100*100*10	4396		2	12	66.4	796.6
2SCG2-11	L80*80*8	4361		2	12	42.1	505.5
2SCG2-12	L80*80*8	4361		2	12	42.1	505.5
2SCG2-15	L60*60*6	2422		2	12	13.1	157.5
2SCG2-15X	L60*60*6	2422		2	12	13.1	157.5
2SCG2-16	L60*60*6	2397		2	12	13.0	155.9
2SCG2-16X	L60*60*6	2397		2	12	13.0	155.9
2SCG2-17	L60*60*6	2312		2	12	12.5	150.4
2SCG2-17X	L60*60*6	2312		2	12	12.5	150.4
2SCG2-18	L60*60*6	2218		2	12	12.0	144.3
2SCG2-18X	L60*60*6	2218		2	12	12.0	144.3
2SCG2-19	L60*60*6	2115		2	12	11.5	137.6
2SCG2-19X	L60*60*6	2115		2	12	11.5	137.6
2SCG2-20	L60*60*6	2052		2	12	11.1	133.5
2SCG2-20X	L60*60*6	2052		2	12	11.1	133.5
2SCG2-21	L60*60*6	1949		2	12	10.6	126.8
2SCG2-21X	L60*60*6	1949		2	12	10.6	126.8
2SCG2-22	L60*60*6	1891		2	12	10.2	123.0
2SCG2-22X	L60*60*6	1891		2	12	10.2	123.0
2SCG2-23	L60*60*6	1863		4	24	10.1	242.3
2SCG2-23X	L60*60*6	1863		4	24	10.1	242.3
2SCG2-24	L80*80*8	950		4	24	9.2	220.2
2SCG2-25	L80*80*8	930		8	48	9.0	431.2
2SCG2-26	L60*60*6	1073		2	12	5.8	69.8
2SCG2-26X	L60*60*6	1073		2	12	5.8	69.8
2SCG2-26	L60*60*6	1631		2	12	8.8	106.1
2SCG2-27	L50*50*5	1631		2	12	6.1	73.8
2SCG2-28	L60*60*6	732		2	12	4.0	47.6
2SCG2-29	L50*50*5	1581		2	12	6.0	71.5
2SCG2-30	L50*50*5	471		2	12	1.8	21.3
2SCG2-31	L60*60*6	1767		2	12	9.6	114.9
2SCG2-31X	L60*60*6	1767		2	12	9.6	114.9
2SCG2-32	L60*60*6	1780		6	36	9.6	347.3
2SCG2-32X	L60*60*6	1780		6	36	9.6	347.3
2SCG2-33	L60*60*6	1820		2	12	9.9	118.4
2SCG2-33X	L60*60*6	1820		2	12	9.9	118.4
2SCG2-34	L60*60*6	1885		2	12	10.2	122.6
2SCG2-34X	L60*60*6	1885		2	12	10.2	122.6
2SCG2-35	L60*60*6	1910		4	24	10.4	248.5
2SCG2-35X	L60*60*6	1910		4	24	10.4	248.5
2SCG2-36	L60*60*6	1976		4	24	10.7	257.0
2SCG2-36X	L60*60*6	1976		4	24	10.7	257.0
2SCG2-37	L80*80*8	1130		4	24	10.9	262.0
2SCG2-38	L60*60*6	1230		2	12	6.7	80.0
2SCG2-38X	L60*60*6	1230		2	12	6.7	80.0
2SCG2-39	L50*50*5	1715		2	12	6.5	77.6
2SCG2-40	L50*50*5	876		2	12	3.3	39.6
2SCG2-41	L50*50*5	1622		2	12	6.1	73.4
2SCG2-42	L50*50*5	543		2	12	2.0	24.6
2SCG2-43	L60*60*6	1202		2	12	6.5	78.2
2SCG2-43X	L60*60*6	1202		2	12	6.5	78.2
2SCG2-44	PL8	400	220	4	24	5.5	132.6
2SCG2-45	PL8	440	226	4	24	6.2	149.9
2SCG2-46	PL8	403	205	4	24	5.2	124.5
2SCG2-47	PL8	465	224	4	24	6.5	157.0
2SCG2-48	PL8	430	194	4	24	5.2	125.7
2SCG2-49	PL8	450	190	4	24	5.4	128.9
2SCG2-50	PL8	494	190	4	24	5.9	141.5
2SCG2-51	PL8	516	179	4	24	5.8	139.2
2SCG2-52	PL10	500	178	4	24	7.0	167.7
2SCG2-53	PL10	380	178	4	24	5.3	127.4
2SCG2-54	PL10	247	185	2	12	3.6	43.0
2SCG2-55	PL8	603	205	4	24	7.8	186.3
2SCG2-56	PL8	581	205	12	72	7.5	538.5
2SCG2-57	PL8	540	185	4	24	6.3	150.6
2SCG2-58	PL8	490	185	8	48	5.7	273.3
2SCG2-59	PL8	512	189	4	24	6.1	145.8
2SCG2-60	PL10	480	470	4	24	17.7	425.0
2SCG2-61	PL10	470	380	4	24	14.0	336.5
2SCG2-62	PL10	681	185	1	6	9.9	59.3
2SCG2-63	PL10	158	135	8	48	1.7	80.4
2SCG2-72	L60*60*6	844		2	12	4.6	54.9
2SCG2-73	L60*60*6	892		2	12	4.8	58.0
2SCG2-74	PL12	495	110	16	96	5.1	492.4
2SCG2-75	PL12	495	90	8	48	4.2	201.4
2SCG2-76	PL12	465	100	8	48	4.4	210.3
2SCG2-77	PL12	465	80	8	48	3.5	168.2
2SCG2-77F	PL2	230	80	8	48	0.3	13.9
2SCG2-78	PL10	475	90	8	48	3.4	161.1
2SCG2-79	L80*80*8	475		4	24	4.6	110.1
2SCG2-79F	PL2	235	60	8	48	0.2	10.6
2SCG2-90	PL25	420	420	4	24	34.6	830.8
2SCG2-91	PL12	460	300	4	24	13.0	312.0
2SCG2-92	PL12	370	300	4	24	10.5	250.9
2SCG2-93	PL12	300	148	12	72	4.2	301.1
2SCG2-94	PL12	300	148	8	48	4.2	200.8
2SCG2-95	PL12	300	99	4	24	2.8	67.1
2SCG2-96	PL12	300	125	8	48	3.5	169.6
FPL8	PL8	50	50	45	270	0.2	42.4
					TOTAL WEIGHT (Kg)		26036.2
					WEIGHT		4339.4

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE PLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC, SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

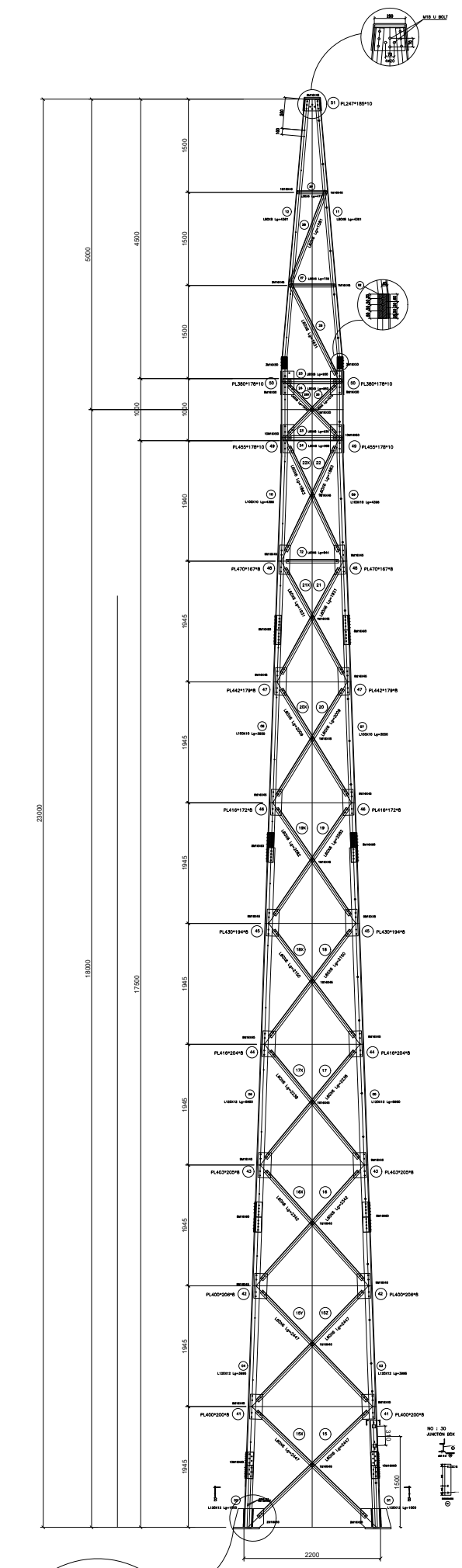
Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

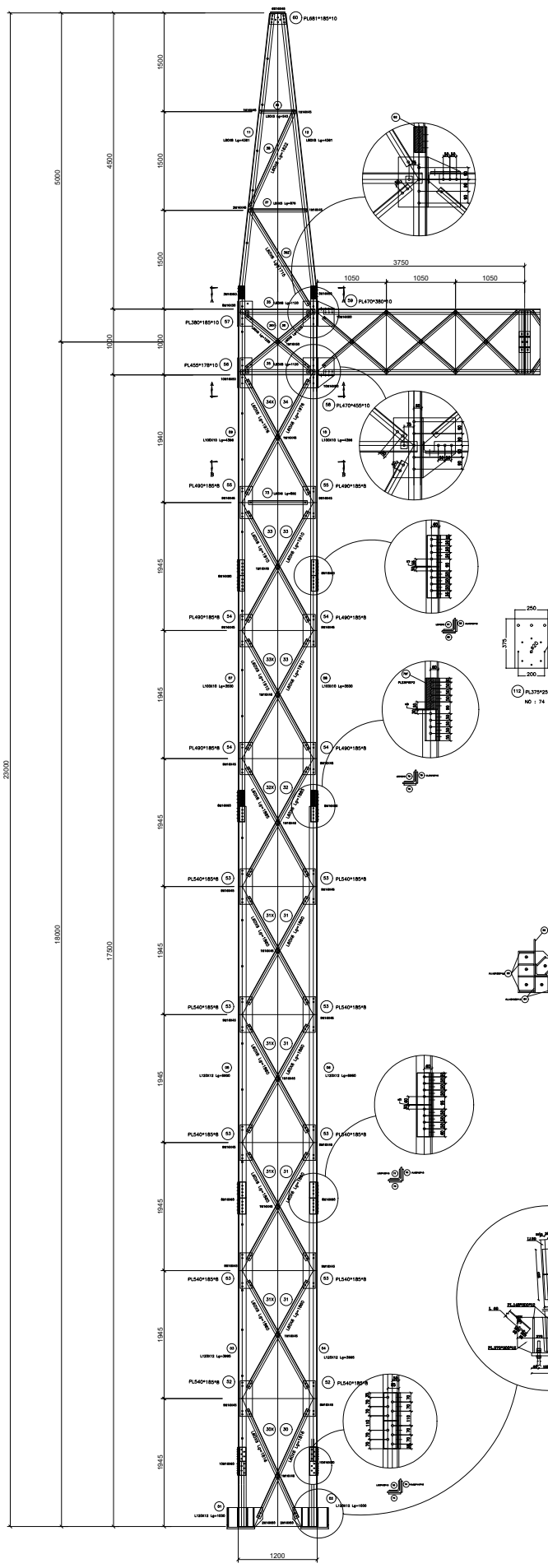
TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG2"

	NAME	PROJECT CODE:		COMPUTER NO. :
DESIGNED:	–	—		—
DRAWN:	–			
CHECKED:	Z.A	SCALE: –	SIZE: A1	DRAWING NO. : —
APPROVED:	–			

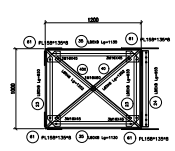
NO : 6



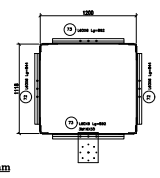
SIDE VIEW



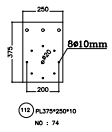
FRONT VIEW

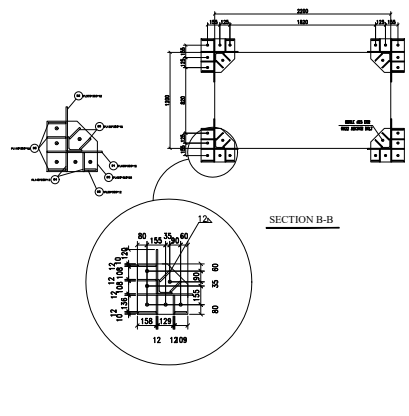


SECTION A-A

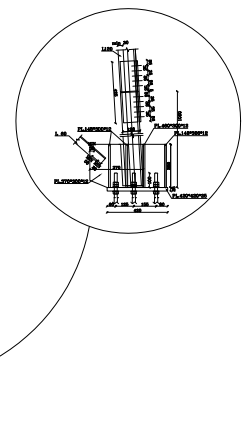


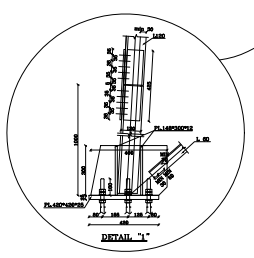
SECTION B-B





SECTION B-B





DETAIL "1"

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG1-1	L120*120*12	1000		2	24	21.6	518.4
2SCG1-2	L120*120*12	1000		2	24	21.6	518.4
2SCG1-3	L120*120*12	3995		2	24	86.3	2071.0
2SCG1-4	L120*120*12	3995		2	24	86.3	2071.0
2SCG1-5	L120*120*12	5950		2	24	128.5	3084.5
2SCG1-6	L120*120*12	5950		2	24	128.5	3084.5
2SCG1-7	L100*100*10	3500		2	24	52.9	1268.4
2SCG1-8	L100*100*10	3500		2	24	52.9	1268.4
2SCG1-9	L100*100*10	4396		2	24	66.4	1593.1
2SCG1-10	L100*100*10	4396		2	24	66.4	1593.1
2SCG1-11	L80*80*8	4361		2	24	42.1	1011.1
2SCG1-12	L80*80*8	4361		2	24	42.1	1011.1
2SCG1-15	L60*60*6	2447		4	48	13.3	636.6
2SCG1-15X	L60*60*6	2447		4	48	13.3	636.6
2SCG1-16	L60*60*6	2342		2	24	12.7	304.6
2SCG1-16X	L60*60*6	2342		2	24	12.7	304.6
2SCG1-17	L60*60*6	2238		2	24	12.1	291.1
2SCG1-17X	L60*60*6	2238		2	24	12.1	291.1
2SCG1-18	L60*60*6	2150		2	24	11.7	279.7
2SCG1-18X	L60*60*6	2150		2	24	11.7	279.7
2SCG1-19	L60*60*6	2082		2	24	11.3	270.8
2SCG1-19X	L60*60*6	2082		2	24	11.3	270.8
2SCG1-20	L60*60*6	2009		2	24	10.9	261.3
2SCG1-20X	L60*60*6	2009		2	24	10.9	261.3
2SCG1-21	L60*60*6	1931		2	24	10.5	251.2
2SCG1-21X	L60*60*6	1931		2	24	10.5	251.2
2SCG1-22	L60*60*6	1863		2	24	10.1	242.3
2SCG1-22X	L60*60*6	1863		2	24	10.1	242.3
2SCG1-23	L80*80*8	930		4	48	9.0	431.2
2SCG1-24	L80*80*8	950		2	24	9.2	220.2
2SCG1-25	L60*60*6	1073		2	24	5.8	139.6
2SCG1-25X	L60*60*6	1073		2	24	5.8	139.6
2SCG1-26	L60*60*6	1631		2	24	8.8	212.2
2SCG1-27	L50*50*5	732		2	24	2.8	66.2
2SCG1-28	L60*60*6	1581		2	24	8.6	205.7
2SCG1-29	L50*50*5	471		2	24	1.8	42.6
2SCG1-30	L60*60*6	1816		2	24	9.8	236.2
2SCG1-30X	L60*60*6	1816		2	24	9.8	236.2
2SCG1-31	L60*60*6	1860		8	96	10.1	967.8
2SCG1-31X	L60*60*6	1860		8	96	10.1	967.8
2SCG1-32	L60*60*6	1885		2	24	10.2	245.2
2SCG1-32X	L60*60*6	1885		2	24	10.2	245.2
2SCG1-33	L60*60*6	1910		4	48	10.4	496.9
2SCG1-33X	L60*60*6	1910		4	48	10.4	496.9
2SCG1-34	L60*60*6	1976		2	24	10.7	257.0
2SCG1-34X	L60*60*6	1976		2	24	10.7	257.0
2SCG1-35	L80*80*8	1130		4	48	10.9	524.0
2SCG1-36	L60*60*6	1230		2	24	6.7	160.0
2SCG1-36X	L60*60*6	1230		2	24	6.7	160.0
2SCG1-36Z	L60*60*6	1715		2	24	9.3	223.1
2SCG1-37	L50*50*5	876		2	24	3.3	79.3
2SCG1-38	L60*60*6	1622		2	24	8.8	211.0
2SCG1-39	L50*50*5	543		2	24	2.0	49.1
2SCG1-40	L60*60*6	1202		2	24	6.5	156.4
2SCG1-40X	L60*60*6	1202		2	24	6.5	156.4
2SCG1-41	PL8	400	200	4	48	5.0	241.2
2SCG1-42	PL8	400	206	4	48	5.2	248.4
2SCG1-43	PL8	40	205	4	48	0.5	24.7
2SCG1-44	PL8	416	204	4	48	5.3	255.8
2SCG1-45	PL8	430	194	4	48	5.2	251.5
2SCG1-46	PL8	416	172	4	48	4.5	215.7
2SCG1-47	PL8	442	179	4	48	5.0	238.5
2SCG1-48	PL8	470	167	4	48	4.9	236.6
2SCG1-49	PL10	455	178	4	48	6.4	305.2
2SCG1-50	PL10	380	178	4	48	5.3	254.9
2SCG1-51	PL10	247	185	2	24	3.6	86.1
2SCG1-52	PL8	540	185	4	48	6.3	301.1
2SCG1-53	PL8	540	185	16	192	6.3	1204.6
2SCG1-54	PL8	490	185	8	96	5.7	546.5
2SCG1-55	PL8	490	185	4	48	5.7	273.3
2SCG1-56	PL10	455	178	2	24	6.4	152.6
2SCG1-57	PL10	380	185	2	24	5.5	132.4
2SCG1-58	PL10	470	455	2	24	16.8	402.9
2SCG1-59	PL10	470	380	2	24	14.0	336.5
2SCG1-60	PL10	681	185	1	12	9.9	118.7
2SCG1-61	PL8	158	135	8	96	1.3	128.6
2SCG1-70	PL8	500	100	1	12	3.1	37.7
2SCG1-71	UNP120	50		2	24	0.7	16.1
2SCG1-72	L60*60*6	844		2	24	4.6	109.8
2SCG1-73	L60*60*6	892		2	24	4.8	116.0
2SCG1-74	PL10	425	110	8	96	3.7	352.3
2SCG1-75	L100*100*10	425		4	48	6.4	308.0
2SCG1-76	PL10	485	90	8	96	3.4	328.9
2SCG1-77	L100*100*10	485		4	48	7.3	351.5
2SCG1-78	PL10	475	90	8	96	3.4	322.2
2SCG1-79	L80*80*8	475		4	48	4.6	220.2
2SCG1-79F	PL2	235	60	8	96	0.2	21.3
2SCG1-80	PL10	475	80	8	96	3.0	286.4
2SCG1-81	L80*80*8	475		4	48	4.6	220.2
2SCG1-90	PL25	420	420	4	48	34.6	1661.7
2SCG1-91	PL12	460	300	4	48	13.0	624.0
2SCG1-92	PL12	370	300	4	48	10.5	501.9
2SCG1-93	PL12	300	148	12	144	4.2	602.3
2SCG1-94	PL12	300	148	8	96	4.2	401.5
2SCG1-95	PL12	300	99	4	48	2.8	134.3
2SCG1-96	PL12	300	125	8	96	3.5	339.1
FPL8	PL8	50	50	45	540	0.2	84.8
					TOTAL WEIGHT (Kg)		44746.9
					WEIGHT		3728.9

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTOREKAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC, SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

NO : 12

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG1"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.A
APPROVED:	–

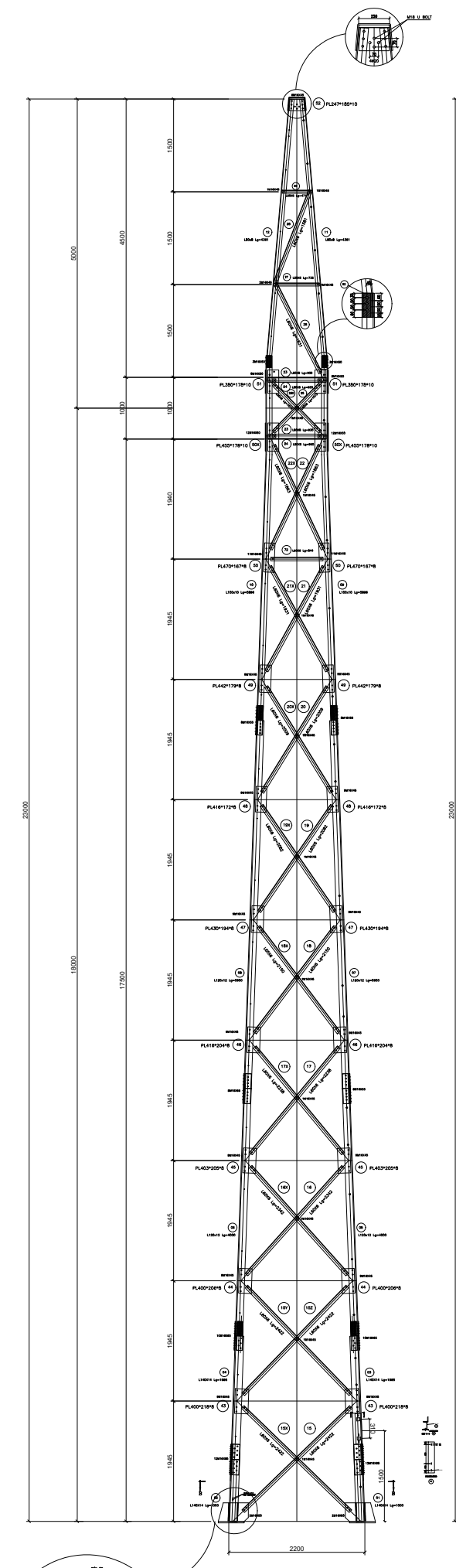
PROJECT CODE: –

SCALE: –

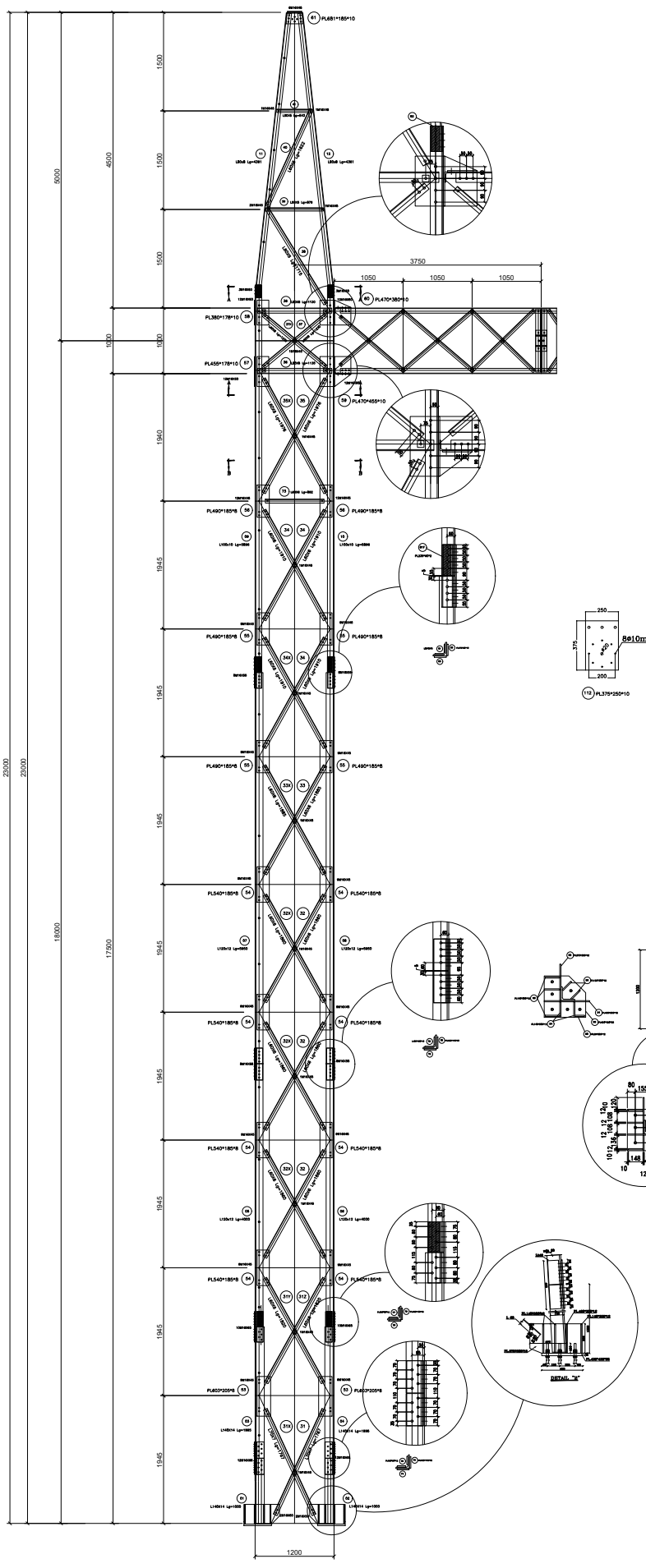
SIZE: A1

COMPUTER NO. : –

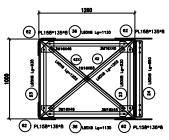
DRAWING NO. : –



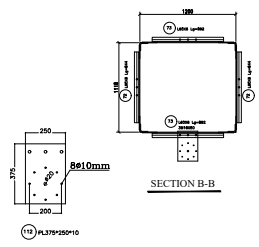
SIDE VIEW



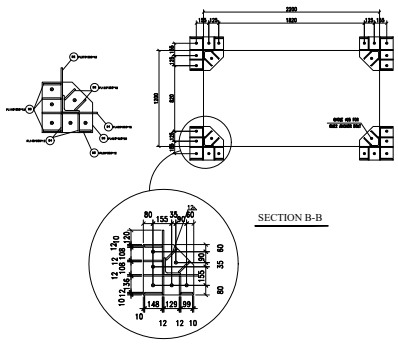
FRONT VIEW



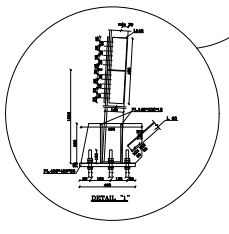
SECTION A-A



SECTION B-B



SECTION B-B



DETAIL "A"

MARK	SIZE	LENGTH	WIDTH	QTY	TOTAL QTY	UNIT W.	TOTAL W.
2SCG4-1	L140*140*14	1000		2	8	29.4	235.2
2SCG4-2	L140*140*14	1000		2	8	29.4	235.2
2SCG4-3	L140*140*14	1995		2	8	58.7	469.2
2SCG4-4	L140*140*14	1995		2	8	58.7	469.2
2SCG4-5	L120*120*12	4000		2	8	117.6	940.8
2SCG4-6	L120*120*12	4000		2	8	117.6	940.8
2SCG4-7	L120*120*12	5950		2	8	128.5	1028.2
2SCG4-8	L120*120*12	5950		2	8	128.5	1028.2
2SCG4-9	L100*100*10	5896		2	8	89.0	712.2
2SCG4-10	L100*100*10	5896		2	8	89.0	712.2
2SCG4-11	L80*80*8	4361		2	8	42.1	337.0
2SCG4-12	L80*80*8	4361		2	8	42.1	337.0
2SCG4-15	L60*60*6	2422		2	8	13.1	105.0
2SCG4-15X	L60*60*6	2422		2	8	13.1	105.0
2SCG4-16	L60*60*6	2397		2	8	13.0	103.9
2SCG4-16X	L60*60*6	2397		2	8	13.0	103.9
2SCG4-17	L60*60*6	2312		2	8	12.5	100.2
2SCG4-17X	L60*60*6	2312		2	8	12.5	100.2
2SCG4-18	L60*60*6	2218		2	8	12.0	96.2
2SCG4-18X	L60*60*6	2218		2	8	12.0	96.2
2SCG4-19	L60*60*6	2115		2	8	11.5	91.7
2SCG4-19X	L60*60*6	2115		2	8	11.5	91.7
2SCG4-20	L60*60*6	2052		2	8	11.1	89.0
2SCG4-20X	L60*60*6	2052		2	8	11.1	89.0
2SCG4-21	L60*60*6	1949		2	8	10.6	84.5
2SCG4-21X	L60*60*6	1949		2	8	10.6	84.5
2SCG4-22	L60*60*6	1891		2	8	10.2	82.0
2SCG4-22X	L60*60*6	1891		2	8	10.2	82.0
2SCG4-23	L60*60*6	1863		4	16	10.1	161.6
2SCG4-23X	L60*60*6	1863		4	16	10.1	161.6
2SCG4-24	L80*80*8	950		4	16	9.2	146.8
2SCG4-25	L80*80*8	930		8	32	9.0	287.5
2SCG4-26	L60*60*6	1073		2	8	5.8	46.5
2SCG4-26X	L60*60*6	1073		2	8	5.8	46.5
2SCG4-26	L60*60*6	1631		2	8	8.8	70.7
2SCG4-27	L50*50*5	1631		2	8	6.1	49.2
2SCG4-28	L60*60*6	732		2	8	4.0	31.7
2SCG4-29	L50*50*5	1581		2	8	6.0	47.7
2SCG4-30	L50*50*5	471		2	8	1.8	14.2
2SCG4-31	L70*70*7	1767		2	8	13.0	104.3
2SCG4-31X	L70*70*7	1767		2	8	9.6	76.6
2SCG4-32	L60*60*6	1780		6	24	9.6	231.5
2SCG4-32X	L60*60*6	1780		6	24	9.6	231.5
2SCG4-33	L60*60*6	1820		2	8	9.9	78.9
2SCG4-33X	L60*60*6	1820		2	8	9.9	78.9
2SCG4-34	L60*60*6	1885		2	8	10.2	81.7
2SCG4-34X	L60*60*6	1885		2	8	10.2	81.7
2SCG4-35	L60*60*6	1910		4	16	10.4	165.6
2SCG4-35X	L60*60*6	1910		4	16	10.4	165.6
2SCG4-36	L60*60*6	1976		4	16	10.7	171.4
2SCG4-36X	L60*60*6	1976		4	16	10.7	171.4
2SCG4-37	L80*80*8	1130		4	16	10.9	174.7
2SCG4-38	L60*60*6	1230		2	8	6.7	53.3
2SCG4-38X	L60*60*6	1230		2	8	6.7	53.3
2SCG4-39	L50*50*5	1715		2	8	6.5	51.7
2SCG4-40	L50*50*5	876		2	8	3.3	26.4
2SCG4-41	L50*50*5	1622		2	8	6.1	48.9
2SCG4-42	L50*50*5	543		2	8	2.0	16.4
2SCG4-43	L60*60*6	1202		2	8	6.5	52.1
2SCG4-43X	L60*60*6	1202		2	8	6.5	52.1
2SCG4-44	PL8	400	220	4	16	5.5	88.4
2SCG4-45	PL8	440	226	4	16	6.2	99.9
2SCG4-46	PL8	403	205	4	16	5.2	83.0
2SCG4-47	PL8	465	224	4	16	6.5	104.7
2SCG4-48	PL8	430	194	4	16	5.2	83.8
2SCG4-49	PL8	450	190	4	16	5.4	85.9
2SCG4-50	PL8	494	190	4	16	5.9	94.3
2SCG4-51	PL8	516	179	4	16	5.8	92.8
2SCG4-52	PL10	500	178	4	16	7.0	111.8
2SCG4-53	PL10	380	178	4	16	5.3	85.0
2SCG4-54	PL10	247	185	2	8	3.6	28.7
2SCG4-55	PL8	603	205	4	16	7.8	124.2
2SCG4-56	PL8	581	205	12	48	7.5	359.0
2SCG4-57	PL8	540	185	4	16	6.3	100.4
2SCG4-58	PL8	490	185	8	32	5.7	182.2
2SCG4-59	PL8	512	189	4	16	6.1	97.2
2SCG4-60	PL10	480	470	4	16	17.7	283.4
2SCG4-61	PL10	470	380	4	16	14.0	224.3
2SCG4-62	PL10	681	185	1	4	9.9	39.6
2SCG4-63	PL10	158	135	8	32	1.7	53.6
2SCG4-72	L60*60*6	844		2	8	4.6	36.6
2SCG4-73	L60*60*6	892		2	8	4.8	38.7
2SCG4-74	PL12	495	110	16	64	5.1	328.3
2SCG4-75	PL12	495	90	8	32	4.2	134.3
2SCG4-76	PL12	465	100	8	32	4.4	140.2
2SCG4-77	PL12	465	80	8	32	3.5	112.1
2SCG4-77F	PL2	230	80	8	32	0.3	9.2
2SCG4-78	PL10	475	90	8	32	3.4	107.4
2SCG4-79	L80*80*8	475		4	16	4.6	73.4
2SCG4-79F	PL2	235	60	8	32	0.2	7.1
2SCG4-90	PL25	420	420	4	16	34.6	553.9
2SCG4-91	PL12	460	300	4	16	13.0	208.0
2SCG4-92	PL12	370	300	4	16	10.5	167.3
2SCG4-93	PL12	300	148	12	48	4.2	200.8
2SCG4-94	PL12	300	148	8	32	4.2	133.8
2SCG4-95	PL12	300	99	4	16	2.8	44.8
2SCG4-96	PL12	300	125	8	32	3.5	113.0
FPL8	PL8	50	50	45	180	0.2	28.3
				TOTAL WEIGHT (Kg)			17042.0
				WEIGHT			4260.5

NOTES

1- ALL DIMENTION ARE IN mm.
2- ALL MATERIALS (MEMBERS & BRACES ....)SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING THICKNESS FOR STRACTURE (ACC.TO.ASTM A123)
3- ALL DIMENTIONS AND DISTANSES SHALL BE CHECKED BY MANUFACTORERAND WORK-SHOP DWG. SHOULD BE BASED ON CHECKED VALUE.
4-CUTTING THE FLANGS ARE NOT ACCEPTABLE.
5-ALL PLATES ARE MADE OF MILD STEEL WITH ST 37 (DIN 17100) : Fy =2400kg/cm2 AND SHOULD BE PROVIDED ECCORDING TO STAHL BOOK.
6- LEG DISTANCES AT BASE OF GANTRY ARE FROM BACK TO BACK OF LEG ANGLES.
7- "S" IS SHIELDWIRE ATTACHMENT POINT TO COLUMN OF GANTRY. SUSPENSION INSULATORS ATTACHMENT POINTS TO BEAM OF GANTRY
8- USE BOLT M16 GRADE 8.8 ,Fu=8000 kg/cm2 & Fy=6400 kg/cm2 FOR CONNECTIONS.
9- NUMBER OF BOLTS IN OTHER CONNECTIONS THAT ARE NOT SHOWN IN THIS DRAWING ARE 1*M16 (HOLE ø18 FOR M16).
10- S.S :SINGLE SHEAR D.S : DOUBLE SHEAR
11- IN ADDITION TO MARKINGS REQUARED FOR SHIPPING PURPOSES ALL CONTAINERS , BOXES, ETC, SHALL BE MARKED WITH THE FOLLOWING:
12- ANGLE USED IN LEGS , BEAMS AND BRACES UP TO L140 ST37
13- THE COATING OF THE BOLTS , NUTS & WASHERS OF THE CONNECTIONS SHOULD BE OF THE DACROMET TYPE.

NO : 4

REV.	VERIFIED BY:	DATE:	DESCRIPTION
00		–	

CLIENT: P.G.M.I.S.E.Z

Consulting: GHODS NIROO ENGINEERING COMPANY (G.N.E.C)

PROJECT: *NORTHERN SITE INTERFACE 400/230 KV SUBSTATION*

TITLE: STEEL STRUCTURE FOR COLUMN TYPE "2SCG4"

	NAME
DESIGNED:	–
DRAWN:	–
CHECKED:	Z.KH
APPROVED:	–

PROJECT CODE: –

SCALE: –

SIZE: A1

COMPUTER NO. : –

DRAWING NO. : –