Construction of

220 kV Loop in Loop out Paliastomi- into Ozurgeti Substation and

110 kV Double Circuit (D/C) Overhead Line from Ozurgeti Substation to Zoti HPP

Foundation Drawings of Tower Type "12B-LA"

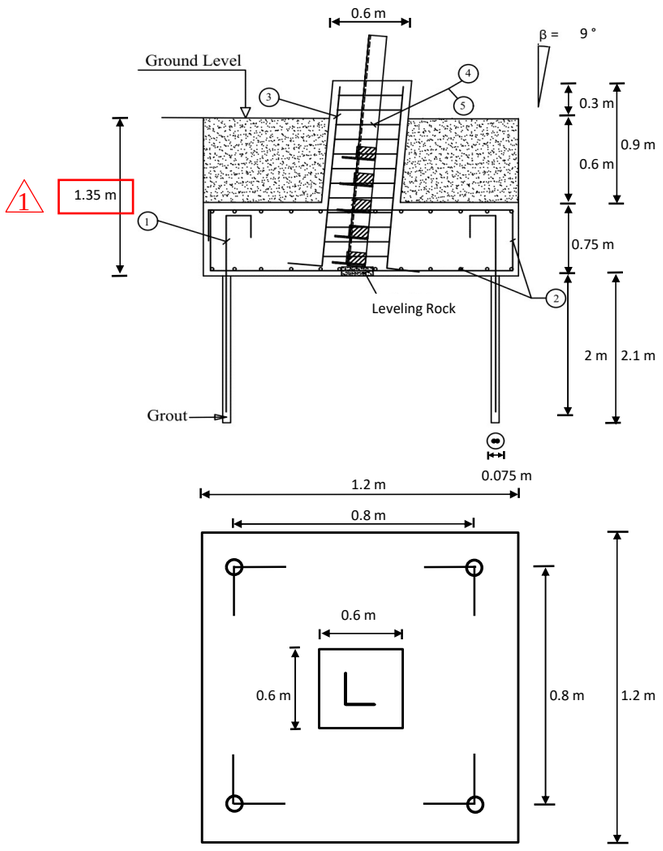
(for all soil types)

Rev. No.	Date	Description	Designed by	Checked by	Approved by
1	7/10/2022	Revised as per Consultant Comments	D. Nezamolmolki	H.O.Bulut	K. Karagoz
0	21/07/22	First Submission	D. Nezamolmolki	H.O.Bulut	K. Karagoz

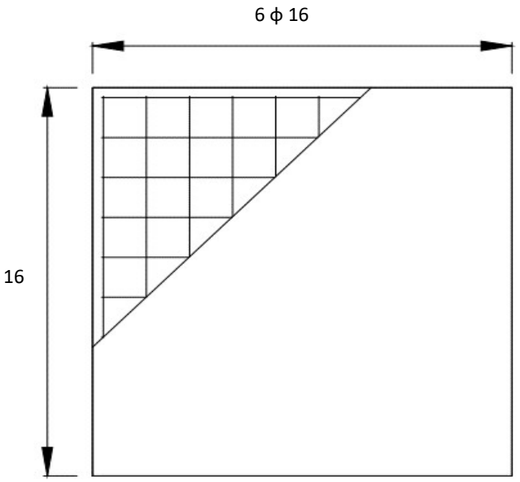
Employer Logo and Business Name	Project Name
GEORGIAN STATE ELECTROSYSTEM 2 Baratashvili Street Tbilisi 0105 Georgia	Open Programme Extension of the Transmission Network II BMZ No. 2015 68 286
Engineer logo and business name	**Contract Identification Number**
Fichtner GmbH & Co. KG Sarweystrasse 3 70191 Stuttgart / Germany	KfW/DSI/OHL-TD-Lot 2
Contractor logo and business name	**Document Number**
MITAS Energy & Metal Construction Inc. Eski Güvercinlik Yolu No: 113 Gazi 06560 Ankara / Turkey	7145A07-EG-FND-DWG-0613_01

Document Title	Scale	Sheet of Sheets
Foundation Drawings of Tower Type "12B-LA" (for all soil types)	**n.a.**	Page 1 of 10

Soil Type:	Type 1-Sound Rock
Foundation Type:	Rock Anchor
Tower Type:	12B-LA

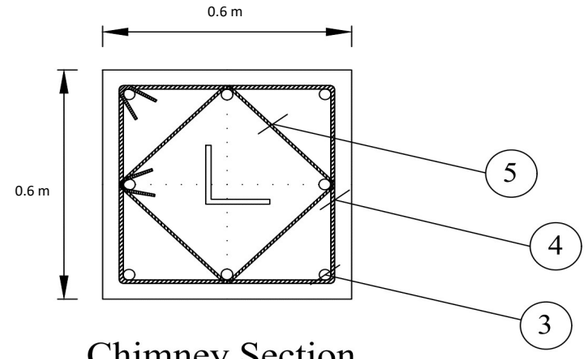


Mark	Pattern	Length (cm)	Diameter (mm)	Unit Weight (kg)	QTY	Total Weight
1	265, 30, 20	315	20	7.78	8	62.2
2	35, 105, 60	365	16	5.77	12	69.2
3	150, 35	185	16	2.92	8	23.4
4	47, 47	210	8	0.828	12	9.9
5	33	153	8	0.60	12	7.2
				SUM		172.0

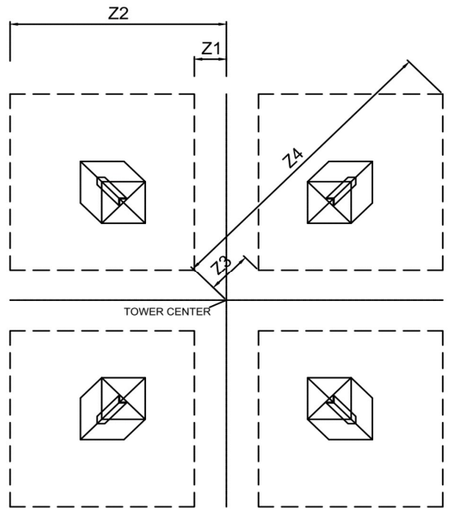


Pad Rebars

* The foundation is in direct contact with undisturbed soil. 1



Chimney Section



PLAN VIEW

Dimensions (m)

Width of Pad	bp =	1.20
Height of Pad	hp =	0.75
Width of Chimney	bc =	0.60
Height of Chimney above ground level	hc1 =	0.30
Height of Chimney under ground level	hc2 =	0.60
Total Height of Chimney	hc =	0.90
No. of Anchor Hole Rows	n =	2
No. of Anchor in one hole	m =	2
Total No. of Anchor Holes	i =	4
Distance of Anchor Rows	C =	0.800
Embeded Length of Anchors in Ground	L =	2.00
Anchor Hole Diameter (Minimum Value)	Dh =	0.075
Anchor Hole Length	Lh =	2.10
Depth of Pad	H =	1.35

Quantities

Item	Volumes		
	Unit	Per Leg	Per Tower
Concrete	m3	1.40	5.62
Excavation (Rock)	m3	1.94	7.78
Backfill	m3	0.54	2.16
Formwork	m2	2.16	8.64
Grout	m3	0.04	0.15
Drilling	m3	0.04	0.15
Reinforcement	kg	172	688

Material Specifications

Characteristic Compressive Strength of Concrete	20	Mpa
Characteristic Strength of Steel Rebar	500	Mpa
Grout and Steel Bond Stress	2.00	Mpa
Grout and Rock Bond Stress	0.90	Mpa
Concrete and Rebar Bond Stress	2.30	Mpa
Soil Density	2.55	ton/m3
Bearing Capacity of Soils	10.19	kg/cm2

1

NOTES :
1- Concrete Class : C20/25
2- Steel Reinforcement Class : S500
3- Concrete Cover : 75 mm
4- Soil Layer Shall Be Compacted To Maintain Soil Density.
5- Sulphate resistant concrete shall be used in case of aggressive soil conditions.
6- In case of high soil resistance, filling shall be done using soil with low resistance.
7- Concrete surface shall be covered with bitumen in case of aggressive soil conditions
8- Expanding Grout to be used as per Technical Specification or Manufacturer Instruction.

BODY	LEG EXTENSIONS	Z1	Z2	Z3	Z4
		mm	mm	mm	mm
BE-3	-3	2951	4151	4173	5870
	-1.5	3188	4388	4508	6205
	+0	3425	4625	4844	6541
	+1.5	3663	4863	5180	6877
	+3	3900	5100	5516	7213
	+4.5	4137	5337	5851	7548
	+6	4375	5575	6187	7884
BE+0	-3	3425	4625	4844	6541
	-1.5	3663	4863	5180	6877
	+0	3900	5100	5516	7213
	+1.5	4137	5337	5851	7548
	+3	4375	5575	6187	7884
	+4.5	4612	5812	6523	8220
	+6	4850	6050	6858	8556
BE+3	-3	3900	5100	5516	7213
	-1.5	4137	5337	5851	7548
	+0	4375	5575	6187	7884
	+1.5	4612	5812	6523	8220
	+3	4850	6050	6858	8556
	+4.5	5087	6287	7194	8891
	+6	5324	6524	7530	9227
BE+6	-3	4375	5575	6187	7884
	-1.5	4612	5812	6523	8220
	+0	4850	6050	6858	8556
	+1.5	5087	6287	7194	8891
	+3	5324	6524	7530	9227
	+4.5	5562	6762	7866	9563
	+6	5799	6999	8201	9898
BE+9	-3	4850	6050	6858	8556
	-1.5	5087	6287	7194	8891
	+0	5324	6524	7530	9227
	+1.5	5562	6762	7866	9563
	+3	5799	6999	8201	9898
	+4.5	6037	7237	8537	10234
	+6	6274	7474	8873	10570

* All dimensions and quantities shall be checked prior to construction

REV./ რედაქცია	DESCRIPTION/ აღწერილობა	DATE/ თარიღი	BY/ ვის მიერ
1	Revised as per Consultant Comments	07.10.22	D.Nz
0	First Submission	21.07.22	D.Nz

PROJECT NAME / პროექტის დასახელება:
Open Programme Extension of the Transmission Network II
BMZ No. 2015 68 286
Contract Identification No. KfW/DSI/OHL-TD-Lot 2

EMPLOYER / დამკვეთი:
JSC Georgian State Electrosystem (GSE)
Baratashvili Street, Tbilisi, Georgia, 0105
info@gse.com.ge

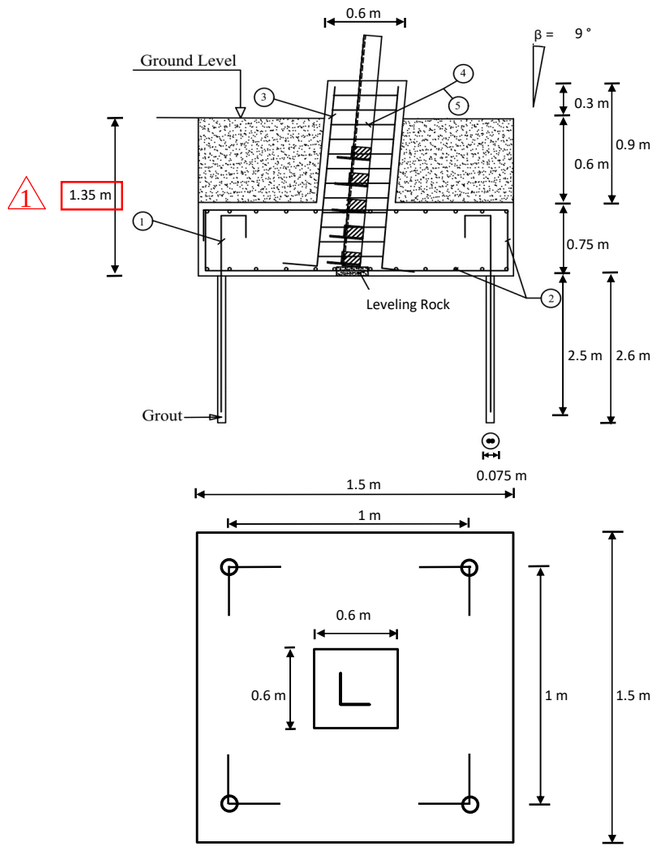
ENGINEER / ინჟინერი :
Fichtner GmbH & Co. KG
Sarweystrasse 370191 Stuttgart / Germany
info@fichtner.de

CONTRACTOR / კონტრაქტორი :
Mitas Energy and Metal Constuction Inc.
Eski Güvercinlik Yolu No: 113 - Gazi Ankara / Turkey
info@mitastower.com

APPROVAL AREA / შეთანხმებულია		STATUS / სტატუსი AP ☐ AC ☐ NA ☐	STAMP / ბეჭედი:
REVIEWED BY / განხილულია:			
DATE OF REVIEW / განხილვის თარიღი:			
APPROVED BY / დამტკიცებულია:	K.KARAGOZ		
CHECKED BY / შემოწმებულია:	H.O.BULUT	Foundation Drawings of Tower Type	
DESIGNED BY / ავტორი:	D. Nezamolmolki	" 12B-LA "	
DRAWN BY / შემსრულებელი:	D. Nezamolmolki	Soil Type 1-Sound Rock	
DATE OF ISSUE / გამოცემის თარიღი:	21.07.22	Rock Anchor Foundation	

SCALE/ მასშტაბი	DOC NO./ დოკუმენტის ნომერი	REV./ რედაქცია	PAGE/ გვერდი
N.A.	7145A07-EG-FND-DWG-0613_01	1	2 of 10

Soil Type:	Type 2-Deleterious Rock
Foundation Type:	Rock Anchor
Tower Type:	12B-LA



Mark	Pattern	Length (cm)	Diameter (mm)	Unit Weight (kg)	QTY	Total Weight
1	315, 30, 20	365	20	9.02	8	72.1
2	35, 135, 60	425	16	6.72	16	107.5
3	150, 35	185	16	2.92	8	23.4
4	47, 47	210	8	0.828	12	9.9
5	33	153	8	0.60	12	7.2
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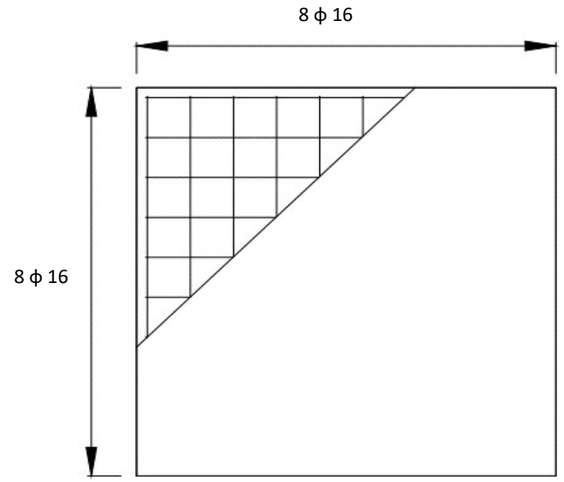
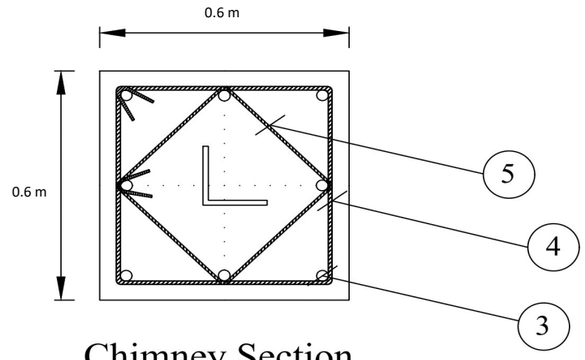
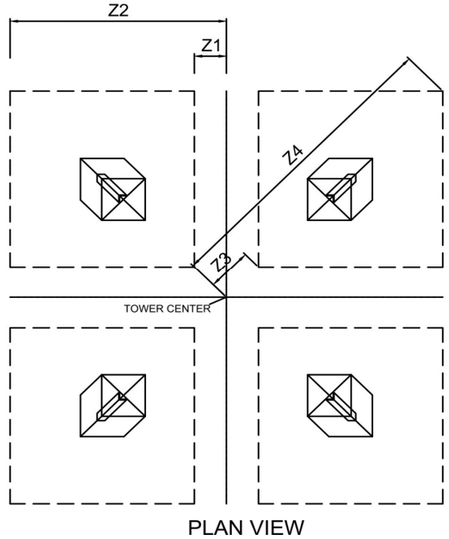


Pad Rebars

* The foundation is in direct contact with undisturbed soil. 1



Chimney Section



PLAN VIEW

Dimensions (m)

Width of Pad	bp =	1.50
Height of Pad	hp =	0.75
Width of Chimney	bc =	0.60
Height of Chimney above ground level	hc1 =	0.30
Height of Chimney under ground level	hc2 =	0.60
Total Height of Chimney	hc =	0.90
No. of Anchor Hole Rows	n =	2
No. of Anchor in one hole	m =	2
Total No. of Anchor Holes	i =	4
Distance of Anchor Rows	C =	1.000
Embeded Length of Anchors in Ground	L =	2.50
Anchor Hole Diameter (Minimum Value)	Dh =	0.075
Anchor Hole Length	Lh =	2.60
Depth of Pad	H =	1.35

Quantities

Item	Volumes		
	Unit	Per Leg	Per Tower
Concrete	m3	2.01	8.05
Excavation (Rock)	m3	3.04	12.15
Backfill	m3	1.03	4.10
Formwork	m2	2.16	8.64
Grout	m3	0.05	0.18
Drilling	m3	0.05	0.18
Reinforcement	kg	220	881

Material Specifications

Characteristic Compressive Strength of Concrete	20	Mpa
Characteristic Strength of Steel Rebar	500	Mpa
Grout and Steel Bond Stress	2.00	Mpa
Grout and Rock Bond Stress	0.60	Mpa
Concrete and Rebar Bond Stress	2.30	Mpa
Soil Density	2.04	ton/m3
Bearing Capacity of Soils	5.10	kg/cm2

1

NOTES :
1- Concrete Class : C20/25
2- Steel Reinforcement Class : S500
3- Concrete Cover : 75 mm
4- Soil Layer Shall Be Compacted To Maintain Soil Density.
5- Sulphate resistant concrete shall be used in case of aggressive soil conditions.
6- In case of high soil resistance, filling shall be done using soil with low resistance.
7- Concrete surface shall be covered with bitumen in case of aggressive soil conditions
8- Expanding Grout to be used as per Technical Specification or Manufacturer Instruction.

BODY	LEG EXTENSIONS	Z1	Z2	Z3	Z4
		mm	mm	mm	mm
BE-3	-3	2801	4301	3961	6082
	-1.5	3038	4538	4296	6418
	+0	3275	4775	4632	6753
	+1.5	3513	5013	4968	7089
	+3	3750	5250	5303	7425
	+4.5	3987	5487	5639	7761
	+6	4225	5725	5975	8096
BE+0	-3	3275	4775	4632	6753
	-1.5	3513	5013	4968	7089
	+0	3750	5250	5303	7425
	+1.5	3987	5487	5639	7761
	+3	4225	5725	5975	8096
	+4.5	4462	5962	6311	8432
	+6	4700	6200	6646	8768
BE+3	-3	3750	5250	5303	7425
	-1.5	3987	5487	5639	7761
	+0	4225	5725	5975	8096
	+1.5	4462	5962	6311	8432
	+3	4700	6200	6646	8768
	+4.5	4937	6437	6982	9103
	+6	5174	6674	7318	9439
BE+6	-3	4225	5725	5975	8096
	-1.5	4462	5962	6311	8432
	+0	4700	6200	6646	8768
	+1.5	4937	6437	6982	9103
	+3	5174	6674	7318	9439
	+4.5	5412	6912	7654	9775
	+6	5649	7149	7989	10111
BE+9	-3	4700	6200	6646	8768
	-1.5	4937	6437	6982	9103
	+0	5174	6674	7318	9439
	+1.5	5412	6912	7654	9775
	+3	5649	7149	7989	10111
	+4.5	5887	7387	8325	10446
	+6	6124	7624	8661	10782

* All dimensions and quantities shall be checked prior to construction

REV./ რედაქცია	DESCRIPTION/ აღწერილობა	DATE/ თარიღი	BY/ ვის მიერ
1	Revised as per Consultant Comments	07.10.22	D.Nz
0	First Submission	21.07.22	D.Nz

PROJECT NAME / პროექტის დასახელება:
Open Programme Extension of the Transmission Network II
BMZ No. 2015 68 286
Contract Identification No. KfW/DSI/OHL-TD-Lot 2

EMPLOYER / დამკვეთი:
JSC Georgian State Electrosystem (GSE)
Baratashvili Street, Tbilisi, Georgia, 0105
info@gse.com.ge

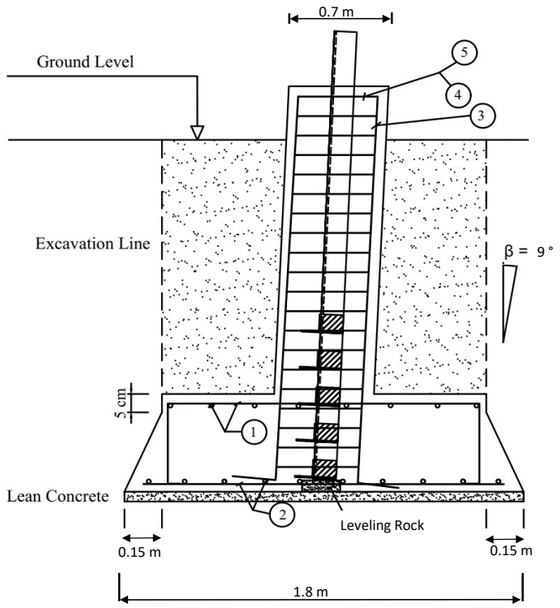
ENGINEER / ინჟინერი :
Fichtner GmbH & Co. KG
Sarweystrasse 370191 Stuttgart / Germany
info@fichtner.de

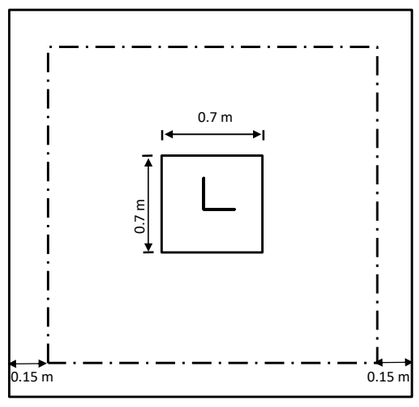
CONTRACTOR / კონტრაქტორი :
Mitas Energy and Metal Constuction Inc.
Eski Güvercinlik Yolu No: 113 - Gazi Ankara / Turkey
info@mitastower.com

APPROVAL AREA / შეთანხმებულია		STATUS / სტატუსი AP ☐ AC ☐ NA ☐	STAMP / ბეჭედი:
REVIEWED BY / განხილულია:			
DATE OF REVIEW / განხილვის თარიღი:			
APPROVED BY / დამტკიცებულია:	K.KARAGOZ		
CHECKED BY / შემოწმებულია:	H.O.BULUT	Foundation Drawings of Tower Type	
DESIGNED BY / ავტორი:	D. Nezamolmolki	" 12B-LA "	
DRAWN BY / შემსრულებელი:	D. Nezamolmolki	Soil Type 2-Deleterious Rock	
DATE OF ISSUE / გამოცემის თარიღი:	21.07.22	Rock Anchor Foundation	

SCALE/ მასშტაბი	DOC NO./ დოკუმენტის ნომერი	REV./ რედაქცია	PAGE/ გვერდი
N.A.	7145A07-EG-FND-DWG-0613_01	1	3 of 10

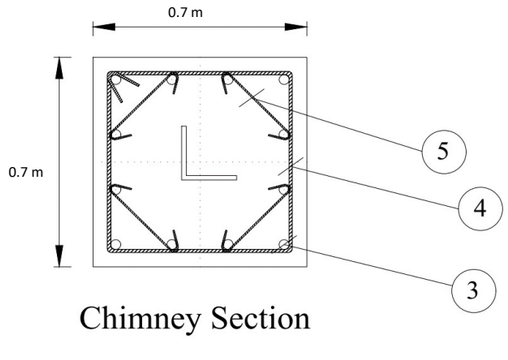
Soil Type:	Type 2-Deleterious Rock
Foundation Type:	Semi-Auger
Tower Type:	12B-LA



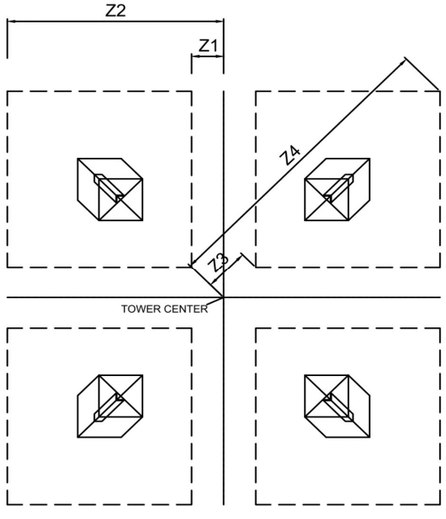


Mark	Pattern	Length cm	Diameter mm	Unit Weight (kg)	QTY	Total Weight (kg)
1	135, 25, 15	215	12	1.91	14	26.7
2	165	165	12	1.47	16	23.4
3	50, 375	425	16	6.72	12	80.6
4	57, 57	250	8	0.99	26	25.6
5	27	42	8	0.17	104	17.2
					SUM	173.6

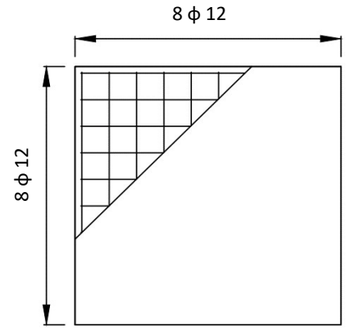
* The foundation is in direct contact with undisturbed soil. 1



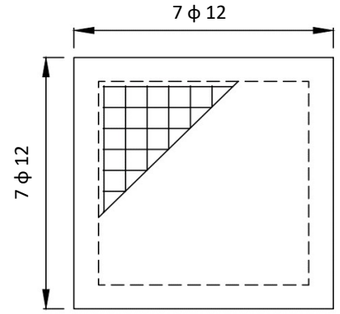
Chimney Section



PLAN VIEW



Bottom of Pad



Top of Pad

Dimensions (m)		
Width of Pad	bp =	1.80
Height of Pad	hp =	0.40
Width of Chimney	bc =	0.70
Height of Chimney above ground level	hc1 =	0.30
Height of Chimney under ground level	hc2 =	3.20
Depth of Pad	H =	3.60

Quantities			
Item	Volumes		
	Unit	Per Leg	Per Tower
Concrete	m3	2.8	11.2
Excavation	m3	8.3	33.3
Backfill	m3	5.5	22.1
Lean Concrete	m3	0.3	1.3
Formwork	m2	9.8	39.2
Reinforcement	kg	173.6	694.2

Material and Soil Specifications		
Characteristic Compressive Strength of Concrete	20	Mpa
Characteristic Strength of Steel Rebar	500	Mpa
Natual Soil Density	2.04	ton/m3
Backfill Density	2.04	ton/m3
Bearing Capacity of Soils	5.10	kg/cm2

1

NOTES :
1- Concrete Class : C20/25
2- Steel Reinforcement Class : S500
3- Concrete Cover : 75 mm
4- Soil Layer Shall Be Compacted To Maintain Soil Density.
5- Sulphate resistant concrete shall be used in case of aggressive soil conditions.
6- In case of high soil resistance, filling shall be done using soil with low resistance.
7- Concrete surface shall be covered with bitumen in case of aggressive soil conditions

BODY	LEG EXTENSIONS	Z1	Z2	Z3	Z4
		mm	mm	mm	mm
BE-3	**-3**	3157	4657	4464	6586
	-1.5	3394	4894	4800	6921
	+0	3631	5131	5136	7257
	+1.5	3869	5369	5471	7593
	+3	4106	5606	5807	7929
	+4.5	4344	5844	6143	8264
	+6	4581	6081	6479	8600
BE+0	**-3**	3631	5131	5136	7257
	-1.5	3869	5369	5471	7593
	+0	4106	5606	5807	7929
	+1.5	4344	5844	6143	8264
	+3	4581	6081	6479	8600
	+4.5	4818	6318	6814	8936
	+6	5056	6556	7150	9271
BE+3	**-3**	4106	5606	5807	7929
	-1.5	4344	5844	6143	8264
	+0	4581	6081	6479	8600
	+1.5	4818	6318	6814	8936
	+3	5056	6556	7150	9271
	+4.5	5293	6793	7486	9607
	+6	5531	7031	7822	9943
BE+6	**-3**	4581	6081	6479	8600
	-1.5	4818	6318	6814	8936
	+0	5056	6556	7150	9271
	+1.5	5293	6793	7486	9607
	+3	5531	7031	7822	9943
	+4.5	5768	7268	8157	10279
	+6	6005	7505	8493	10614
BE+9	**-3**	5056	6556	7150	9271
	-1.5	5293	6793	7486	9607
	+0	5531	7031	7822	9943
	+1.5	5768	7268	8157	10279
	+3	6005	7505	8493	10614
	+4.5	6243	7743	8829	10950
	+6	6480	7980	9164	11286

* All dimensions and quantities shall be checked prior to construction

1	Revised as per Consultant Comments	07.10.22	D.Nz
0	First Submission	21.07.22	D.Nz
REV./ რედაქცია	DESCRIPTION/ აღწერილობა	DATE/ თარიღი	BY/ ვის მიერ

PROJECT NAME / პროექტის დასახელება:
Open Programme Extension of the Transmission Network II
BMZ No. 2015 68 286
Contract Identification No. KfW/DSI/OHL-TD-Lot 2

EMPLOYER / დამკვეთი:
JSC Georgian State Electrosystem (GSE)
Baratashvili Street, Tbilisi, Georgia, 0105
info@gse.com.ge

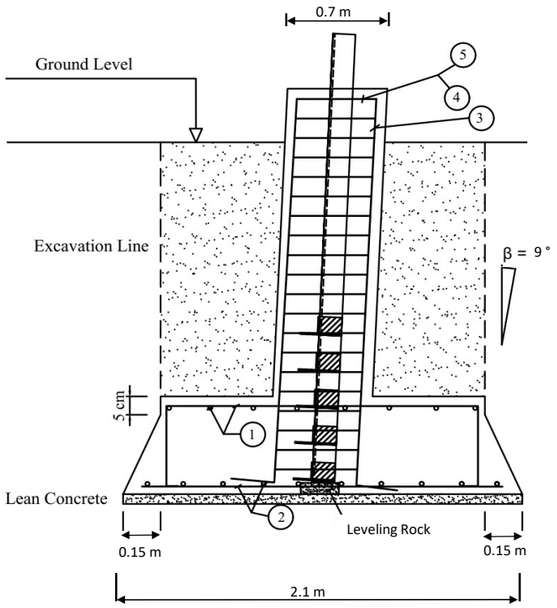
ENGINEER / ინჟინერი :
Fichtner GmbH & Co. KG
Sarweystrasse 370191 Stuttgart / Germany
info@fichtner.de

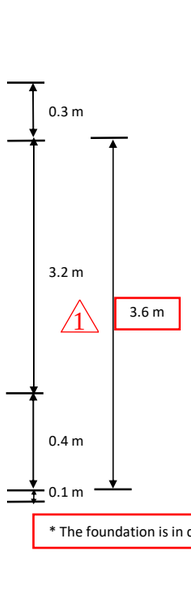
CONTRACTOR / კონტრაქტორი :
Mitas Energy and Metal Constuction Inc.
Eski Güvercinlik Yolu No: 113 - Gazi Ankara / Turkey
info@mitastower.com

APPROVAL AREA / შეთანხმებულია		STATUS / სტატუსი AP ☐ AC ☐ NA ☐	STAMP / ბეჭედი:
REVIEWED BY / განხილულია:			
DATE OF REVIEW / განხილვის თარიღი:			
APPROVED BY / დამტკიცებულია:	K.KARAGOZ		
CHECKED BY / შემოწმებულია:	H.O.BULUT	Foundation Drawings of Tower Type	
DESIGNED BY / ავტორი:	D. Nezamolmolki	'' 12B-LA ''	
DRAWN BY / შემსრულებელი:	D. Nezamolmolki	Soil Type 2-Deleterious Rock	
DATE OF ISSUE / გამოცემის თარიღი:	21.07.22	Semi-Auger Foundation	

SCALE/ მასშტაბი	DOC NO./ დოკუმენტის ნომერი	REV./ რედაქცია	PAGE/ გვერდი
N.A.	7145A07-EG-FND-DWG-0613_01	1	4 of 10

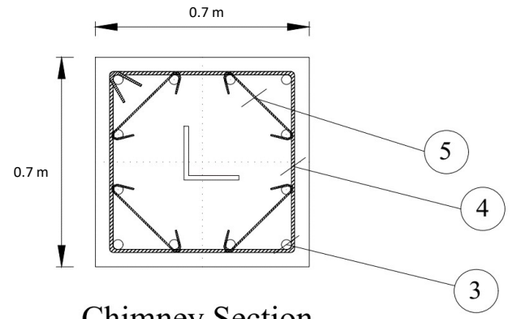
Soil Type:	Type 3-Good Soil
Foundation Type:	Semi-Auger
Tower Type:	12B-LA



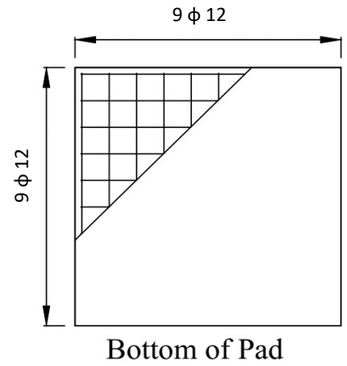


Mark	Pattern	Length cm	Diameter mm	Unit Weight (kg)	QTY	Total Weight (kg)
1	165, 25, 15	245	12	2.18	16	34.8
2	195	195	12	1.73	18	31.2
3	50, 375	425	16	6.72	12	80.6
4	57, 57	250	8	0.99	26	25.6
5	27	42	8	0.17	104	17.2
					SUM	189.4

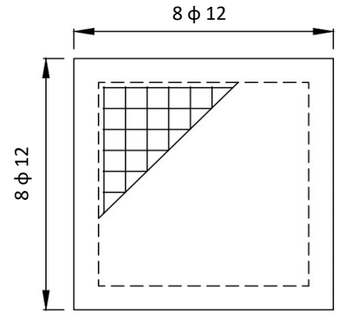
1 * The foundation is in direct contact with undisturbed soil.



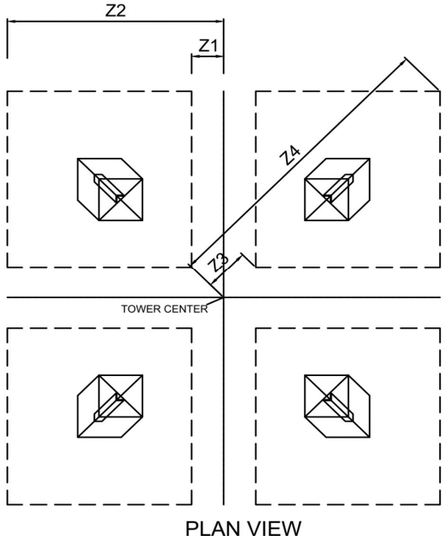
Chimney Section



Bottom of Pad



Top of Pad



PLAN VIEW

Dimensions (m)		
Width of Pad	bp =	2.10
Height of Pad	hp =	0.40
Width of Chimney	bc =	0.70
Height of Chimney above ground level	hc1 =	0.30
Height of Chimney under ground level	hc2 =	3.20
Depth of Pad	H =	3.60

Quantities			
Item	Volumes		
	Unit	Per Leg	Per Tower
Concrete	m3	3.2	12.9
Excavation	m3	12.0	48.0
Backfill	m3	8.8	35.0
Lean Concrete	m3	0.4	1.8
Formwork	m2	9.8	39.2
Reinforcement	kg	189.4	757.4

Material and Soil Specifications		
Characteristic Compressive Strength of Concrete	20	Mpa
Characteristic Strength of Steel Rebar	500	Mpa
Natual Soil Density	1.73	ton/m3
Backfill Density	1.73	ton/m3
Bearing Capacity of Soils	3.06	kg/cm2

1

NOTES :
1- Concrete Class : C20/25
2- Steel Reinforcement Class : S500
3- Concrete Cover : 75 mm
4- Soil Layer Shall Be Compacted To Maintain Soil Density.
5- Sulphate resistant concrete shall be used in case of aggressive soil conditions.
6- In case of high soil resistance, filling shall be done using soil with low resistance.
7- Concrete surface shall be covered with bitumen in case of aggressive soil conditions

BODY	LEG EXTENSIONS	Z1	Z2	Z3	Z4
		mm	mm	mm	mm
BE-3	-3	3007	4807	4252	6798
	-1.5	3244	5044	4588	7133
	+0	3481	5281	4924	7469
	+1.5	3719	5519	5259	7805
	+3	3956	5756	5595	8141
	+4.5	4194	5994	5931	8476
	+6	4431	6231	6266	8812
BE+0	-3	3481	5281	4924	7469
	-1.5	3719	5519	5259	7805
	+0	3956	5756	5595	8141
	+1.5	4194	5994	5931	8476
	+3	4431	6231	6266	8812
	+4.5	4668	6468	6602	9148
	+6	4906	6706	6938	9484
BE+3	-3	3956	5756	5595	8141
	-1.5	4194	5994	5931	8476
	+0	4431	6231	6266	8812
	+1.5	4668	6468	6602	9148
	+3	4906	6706	6938	9484
	+4.5	5143	6943	7274	9819
	+6	5381	7181	7609	10155
BE+6	-3	4431	6231	6266	8812
	-1.5	4668	6468	6602	9148
	+0	4906	6706	6938	9484
	+1.5	5143	6943	7274	9819
	+3	5381	7181	7609	10155
	+4.5	5618	7418	7945	10491
	+6	5855	7655	8281	10826
BE+9	-3	4906	6706	6938	9484
	-1.5	5143	6943	7274	9819
	+0	5381	7181	7609	10155
	+1.5	5618	7418	7945	10491
	+3	5855	7655	8281	10826
	+4.5	6093	7893	8617	11162
	+6	6330	8130	8952	11498

* All dimensions and quantities shall be checked prior to construction

1	Revised as per Consultant Comments	07.10.22	D.Nz
0	First Submission	21.07.22	D.Nz
REV./ რედაქცია	DESCRIPTION/ აღწერილობა	DATE/ თარიღი	BY/ ვის მიერ

PROJECT NAME / პროექტის დასახელება:
Open Programme Extension of the Transmission Network II
BMZ No. 2015 68 286
Contract Identification No. KfW/DSI/OHL-TD-Lot 2

EMPLOYER / დამკვეთი:
JSC Georgian State Electrosystem (GSE)
Baratashvili Street, Tbilisi, Georgia, 0105
info@gse.com.ge

ENGINEER / ინჟინერი :
Fichtner GmbH & Co. KG
Sarweystrasse 370191 Stuttgart / Germany
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CONTRACTOR / კონტრაქტორი :
Mitas Energy and Metal Constuction Inc.
Eski Güvercinlik Yolu No: 113 - Gazi Ankara / Turkey
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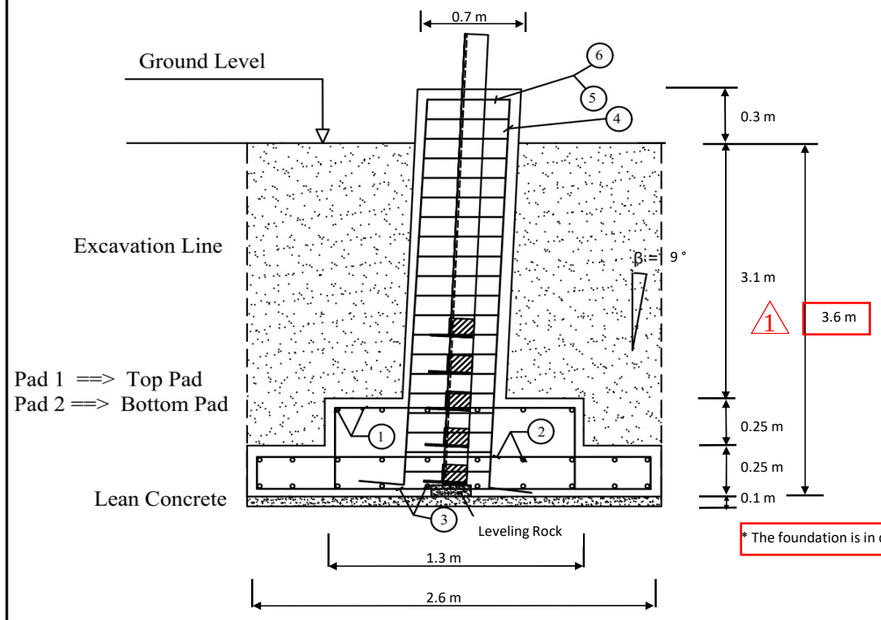
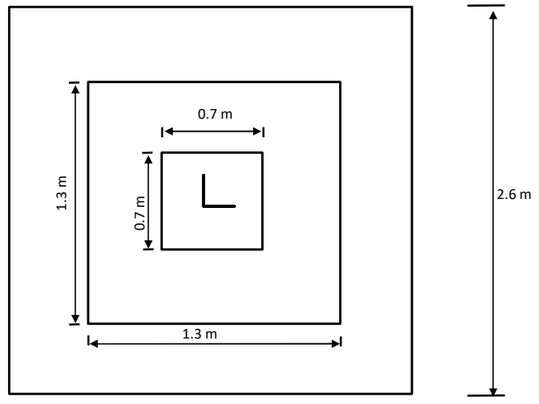
APPROVAL AREA / შეთანხმებულია		STATUS / სტატუსი AP ☐ AC ☐ NA ☐	STAMP / ბეჭედი:
REVIEWED BY / განხილულია:			
DATE OF REVIEW / განხილვის თარიღი:			
APPROVED BY / დამტკიცებულია:	K.KARAGOZ		
CHECKED BY / შემოწმებულია:	H.O.BULUT	Foundation Drawings of Tower Type	
DESIGNED BY / ავტორი:	D. Nezamolmolki	'' 12B-LA ''	
DRAWN BY / შემსრულებელი:	D. Nezamolmolki	Soil Type 3-Good Soil	
DATE OF ISSUE / გამოცემის თარიღი:	21.07.22	Semi-Auger Foundation	

SCALE/ მასშტაბი	DOC NO./ დოკუმენტის ნომერი	REV./ რედაქცია	PAGE/ გვერდი
N.A.	7145A07-EG-FND-DWG-0613_01	1	5 of 10

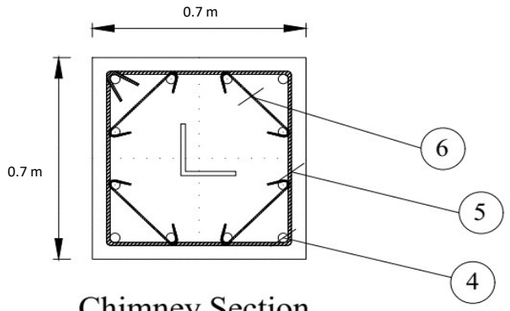
Soil Type:	Type 3-Good Soil
Foundation Type:	Pad & Chimney
Tower Type:	12B-LA



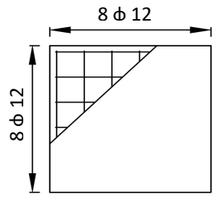
1 * The foundation is in direct contact with undisturbed soil.



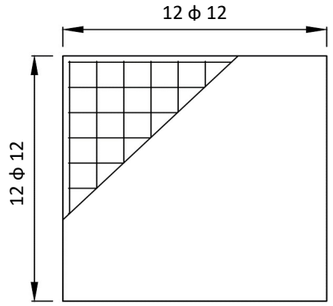
Mark	Pattern	Length cm	Diameter mm	Unit Weight (kg)	QTY	Total Weight (kg)
1	115, 35, 15	215	12	1.91	16	30.5
2	245, 10, 15	295	12	2.62	22	57.6
3	245	245	12	2.18	24	52.2
4	40, 375	415	16	6.56	12	78.7
5	57, 57	250	8	0.99	26	25.6
6	27	42	8	0.17	104	17.2
					SUM	261.9



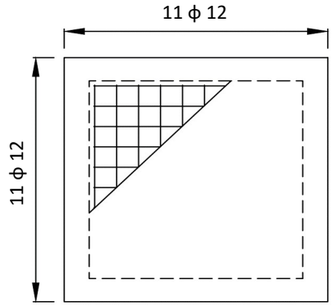
Chimney Section



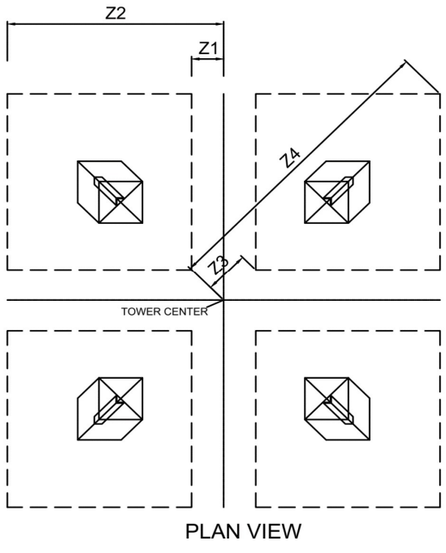
Top of Pad 1



Bottom of Pad 2



Top of Pad 2



PLAN VIEW

Dimensions (m)		
Width of Pad1	bp1 =	1.30
Width of Pad2	bp2 =	2.60
Height of Pad1	hp1 =	0.25
Height of Pad2	hp2 =	0.25
Width of Chimney	bc =	0.70
Height of Chimney above ground level	hc1 =	0.30
Height of Chimney under ground level	hc2 =	3.10
Depth of Pad	H =	3.60

Quantities			
Item	**Volumes**		
	Unit	**Per Leg**	**Per Tower**
Concrete	m3	3.8	15.1
Excavation	m3	25.0	100.0
Backfill	m3	21.2	84.9
Lean Concrete	m3	0.7	2.7
Formwork	m2	10.8	43.3
Reinforcement	kg	261.9	1047.5

Material and Soil Specifications		
Characteristic Compressive Strength of Concrete	20	Mpa
Characteristic Strength of Steel Rebar	500	Mpa
Natual Soil Density	1.73	ton/m3
Backfill Density	1.73	ton/m3
Bearing Capacity of Soils	3.06	kg/cm2

1

NOTES :
1- Concrete Class : C20/25
2- Steel Reinforcement Class : S500
3- Concrete Cover : 75 mm
4- Soil Layer Shall Be Compacted To Maintain Soil Density.
5- Sulphate resistant concrete shall be used in case of aggressive soil conditions.
6- In case of high soil resistance, filling shall be done using soil with low resistance.
7- Concrete surface shall be covered with bitumen in case of aggressive soil conditions

BODY	LEG EXTENSIONS	Z1	Z2	Z3	Z4
		mm	mm	mm	mm
BE-3	**-3**	2607	5207	3686	7363
	-1.5	2844	5444	4022	7699
	+0	3081	5681	4358	8035
	+1.5	3319	5919	4694	8371
	+3	3556	6156	5029	8706
	+4.5	3794	6394	5365	9042
	+6	4031	6631	5701	9378
BE+0	**-3**	3081	5681	4358	8035
	-1.5	3319	5919	4694	8371
	+0	3556	6156	5029	8706
	+1.5	3794	6394	5365	9042
	+3	4031	6631	5701	9378
	+4.5	4268	6868	6037	9714
	+6	4506	7106	6372	10049
BE+3	**-3**	3556	6156	5029	8706
	-1.5	3794	6394	5365	9042
	+0	4031	6631	5701	9378
	+1.5	4268	6868	6037	9714
	+3	4506	7106	6372	10049
	+4.5	4743	7343	6708	10385
	+6	4981	7581	7044	10721
BE+6	**-3**	4031	6631	5701	9378
	-1.5	4268	6868	6037	9714
	+0	4506	7106	6372	10049
	+1.5	4743	7343	6708	10385
	+3	4981	7581	7044	10721
	+4.5	5218	7818	7379	11056
	+6	5455	8055	7715	11392
BE+9	**-3**	4506	7106	6372	10049
	-1.5	4743	7343	6708	10385
	+0	4981	7581	7044	10721
	+1.5	5218	7818	7379	11056
	+3	5455	8055	7715	11392
	+4.5	5693	8293	8051	11728
	+6	5930	8530	8387	12064

* All dimensions and quantities shall be checked prior to construction

1	Revised as per Consultant Comments	07.10.22	D.Nz
0	First Submission	21.07.22	D.Nz
REV./ რედაქცია	DESCRIPTION/ აღწერილობა	DATE/ თარიღი	BY/ ვის მიერ

PROJECT NAME / პროექტის დასახელება:
Open Programme Extension of the Transmission Network II
BMZ No. 2015 68 286
Contract Identification No. KfW/DSI/OHL-TD-Lot 2

EMPLOYER / დამკვეთი:
JSC Georgian State Electrosystem (GSE)
Baratashvili Street, Tbilisi, Georgia, 0105
info@gse.com.ge

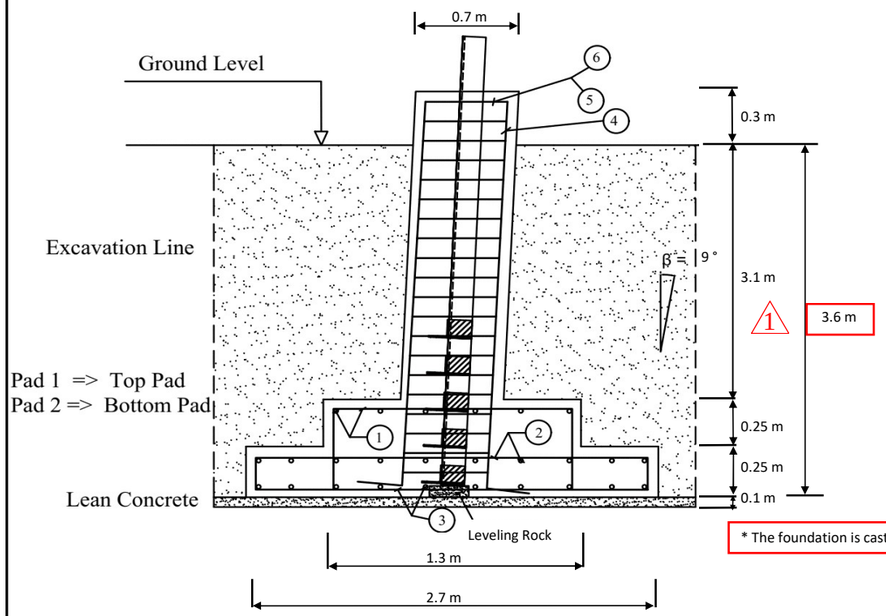
ENGINEER / ინჟინერი :
Fichtner GmbH & Co. KG
Sarweystrasse 370191 Stuttgart / Germany
info@fichtner.de

CONTRACTOR / კონტრაქტორი :
Mitas Energy and Metal Constuction Inc.
Eski Güvercinlik Yolu No: 113 - Gazi Ankara / Turkey
info@mitastower.com

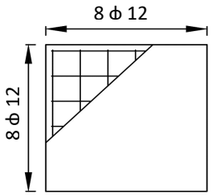
APPROVAL AREA / შეთანხმებულია		STATUS / სტატუსი AP ☐ AC ☐ NA ☐	STAMP / ბეჭედი:
REVIEWED BY / განხილულია:			
DATE OF REVIEW / განხილვის თარიღი:			
APPROVED BY / დამტკიცებულია:	K.KARAGOZ		
CHECKED BY / შემოწმებულია:	H.O.BULUT	Foundation Drawings of Tower Type	
DESIGNED BY / ავტორი:	D. Nezamolmolki	'' 12B-LA ''	
DRAWN BY / შემსრულებელი:	D. Nezamolmolki	Soil Type 3-Good Soil	
DATE OF ISSUE / გამოცემის თარიღი:	21.07.22	Pad & Chimney Foundation	

SCALE/ მასშტაბი	DOC NO./ დოკუმენტის ნომერი	REV./ რედაქცია	PAGE/ გვერდი
N.A.	7145A07-EG-FND-DWG-0613_01	1	6 of 10

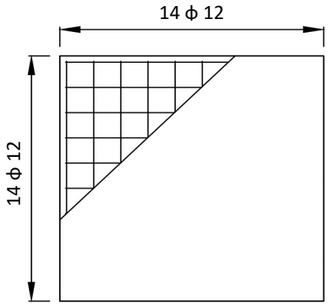
Soil Type:	Type 4-Normal Soil-Dry
Foundation Type:	Pad & Chimney
Tower Type:	12B-LA



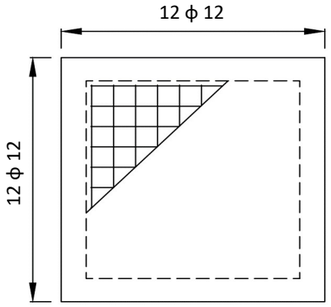
Mark	Pattern	Length cm	Diameter mm	Unit Weight (kg)	QTY	Total Weight (kg)
1	115 / 35 / 15	215	12	1.91	16	30.5
2	255 / 10 / 15	305	12	2.71	24	65.0
3	255	255	12	2.26	28	63.4
4	40 / 375	415	16	6.56	12	78.7
5	57 / 57	250	8	0.99	26	25.6
6	27	42	8	0.17	104	17.2
					SUM	280.4



Top of Pad 1

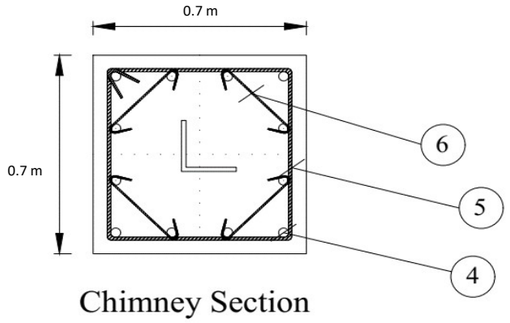


Bottom of Pad 2

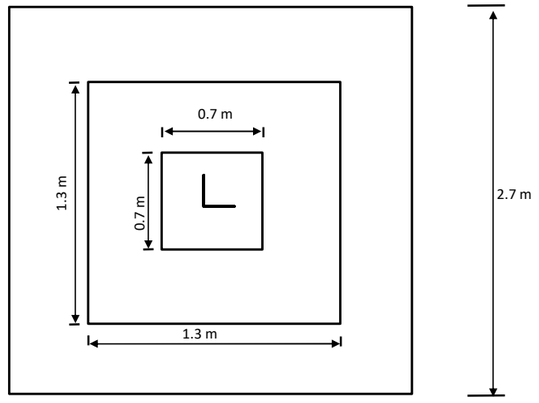


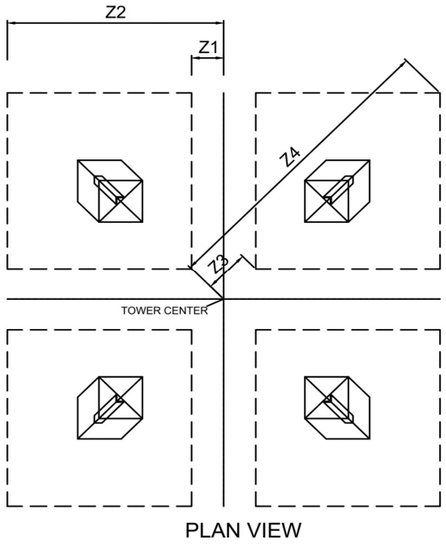
Top of Pad 2

* The foundation is cast inside formwork. 1



Chimney Section





PLAN VIEW

Dimensions (m)		
Width of Pad1	bp1 =	1.30
Width of Pad2	bp2 =	2.70
Height of Pad1	hp1 =	0.25
Height of Pad2	hp2 =	0.25
Width of Chimney	bc =	0.70
Height of Chimney above ground level	hc1 =	0.30
Height of Chimney under ground level	hc2 =	3.10
Depth of Pad	H =	3.60

Quantities			
Item	**Volumes**		
	Unit	**Per Leg**	**Per Tower**
Concrete	m3	3.9	15.6
Excavation	m3	50.7	202.6
Backfill	m3	46.7	187.0
Lean Concrete	m3	1.1	4.4
Formwork	m2	13.5	54.1
Reinforcement	kg	280.4	1121.7

Material and Soil Specifications		
Characteristic Compressive Strength of Concrete	20	Mpa
Characteristic Strength of Steel Rebar	500	Mpa
Natual Soil Density	1.83	ton/m3
Backfill Density	1.83	ton/m3
Bearing Capacity of Soils	2.04	kg/cm2

1

NOTES :
1- Concrete Class : C20/25
2- Steel Reinforcement Class : S500
3- Concrete Cover : 75 mm
4- Soil Layer Shall Be Compacted To Maintain Soil Density.
5- Sulphate resistant concrete shall be used in case of aggressive soil conditions.
6- In case of high soil resistance, filling shall be done using soil with low resistance.
7- Concrete surface shall be covered with bitumen in case of aggressive soil conditions

BODY	LEG EXTENSIONS	Z1	Z2	Z3	Z4
		mm	mm	mm	mm
BE-3	-3	2557	5257	3616	7434
	-1.5	2794	5494	3951	7770
	+0	3031	5731	4287	8106
	+1.5	3269	5969	4623	8441
	+3	3506	6206	4959	8777
	+4.5	3744	6444	5294	9113
	+6	3981	6681	5630	9448
BE+0	-3	3031	5731	4287	8106
	-1.5	3269	5969	4623	8441
	+0	3506	6206	4959	8777
	+1.5	3744	6444	5294	9113
	+3	3981	6681	5630	9448
	+4.5	4218	6918	5966	9784
	+6	4456	7156	6302	10120
BE+3	-3	3506	6206	4959	8777
	-1.5	3744	6444	5294	9113
	+0	3981	6681	5630	9448
	+1.5	4218	6918	5966	9784
	+3	4456	7156	6302	10120
	+4.5	4693	7393	6637	10456
	+6	4931	7631	6973	10791
BE+6	-3	3981	6681	5630	9448
	-1.5	4218	6918	5966	9784
	+0	4456	7156	6302	10120
	+1.5	4693	7393	6637	10456
	+3	4931	7631	6973	10791
	+4.5	5168	7868	7309	11127
	+6	5405	8105	7644	11463
BE+9	-3	4456	7156	6302	10120
	-1.5	4693	7393	6637	10456
	+0	4931	7631	6973	10791
	+1.5	5168	7868	7309	11127
	+3	5405	8105	7644	11463
	+4.5	5643	8343	7980	11799
	+6	5880	8580	8316	12134

* All dimensions and quantities shall be checked prior to construction

1	Revised as per Consultant Comments	07.10.22	D.Nz
0	First Submission	21.07.22	D.Nz
REV./ რედაქცია	DESCRIPTION/ აღწერილობა	DATE/ თარიღი	BY/ ვის მიერ

PROJECT NAME / პროექტის დასახელება:
Open Programme Extension of the Transmission Network II
BMZ No. 2015 68 286
Contract Identification No. KfW/DSI/OHL-TD-Lot 2

EMPLOYER / დამკვეთი:
JSC Georgian State Electrosystem (GSE)
Baratashvili Street, Tbilisi, Georgia, 0105
info@gse.com.ge

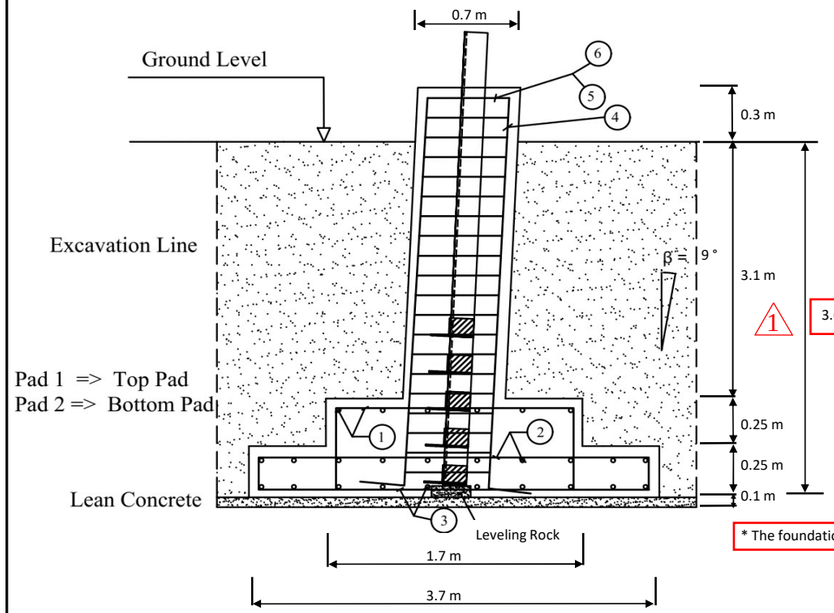
ENGINEER / ინჟინერი :
Fichtner GmbH & Co. KG
Sarweystrasse 370191 Stuttgart / Germany
info@fichtner.de

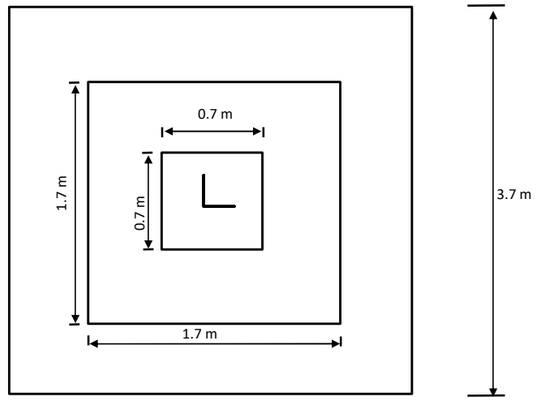
CONTRACTOR / კონტრაქტორი :
Mitas Energy and Metal Constuction Inc.
Eski Güvercinlik Yolu No: 113 - Gazi Ankara / Turkey
info@mitastower.com

APPROVAL AREA / მეთანხმებულია		STATUS / სტატუსი AP ☐ AC ☐ NA ☐	STAMP / ბეჭედი:
REVIEWED BY / განხილულია:			
DATE OF REVIEW / განხილვის თარიღი:			
APPROVED BY / დამტკიცებულია:	K.KARAGOZ		
CHECKED BY / შემოწმებულია:	H.O.BULUT	Foundation Drawings of Tower Type	
DESIGNED BY / ავტორი:	D. Nezamolmolki	'' 12B-LA ''	
DRAWN BY / შემსრულებელი:	D. Nezamolmolki	Soil Type 4-Normal Soil-Dry	
DATE OF ISSUE / გამოცემის თარიღი:	21.07.22	Pad & Chimney Foundation	

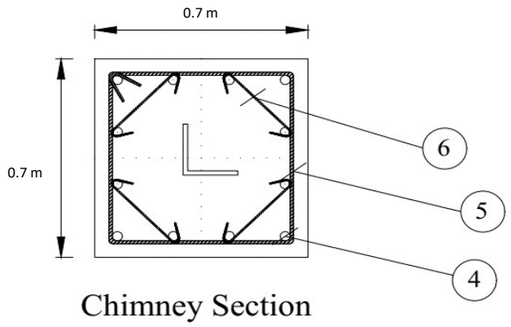
SCALE/ მასშტაბი	DOC NO./ დოკუმენტის ნომერი	REV./ რედაქცია	PAGE/ გვერდი
N.A.	7145A07-EG-FND-DWG-0613_01	1	7 of 10

Soil Type:	Type 4-Normal Soil-Submerge
Foundation Type:	Pad & Chimney
Tower Type:	12B-LA

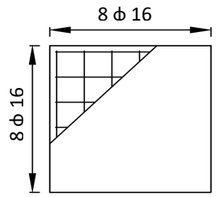




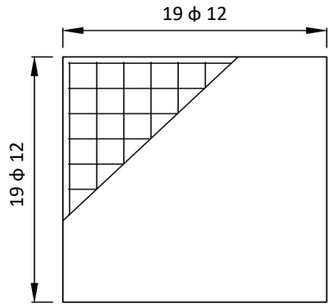
Mark	Pattern	Length cm	Diameter mm	Unit Weight (kg)	QTY	Total Weight (kg)
1	155, 35, 15	255	16	4.03	16	64.5
2	355, 10, 15	405	12	3.60	32	115.1
3	355	355	12	3.15	38	119.8
4	40, 375	415	16	6.56	12	78.7
5	57, 57	250	8	0.99	26	25.6
6	27	42	8	0.17	104	17.2
					SUM	420.8



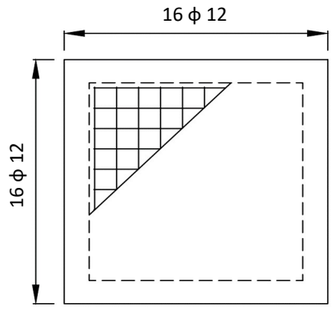
Chimney Section



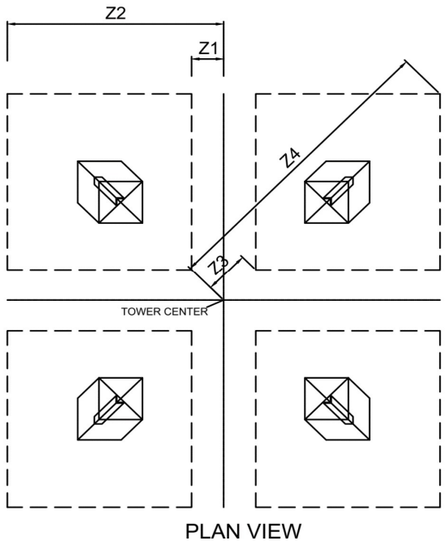
Top of Pad 1



Bottom of Pad 2



Top of Pad 2



PLAN VIEW

* The foundation is cast inside formwork. 1

Dimensions (m)		
Width of Pad1	bp1 =	1.70
Width of Pad2	bp2 =	3.70
Height of Pad1	hp1 =	0.25
Height of Pad2	hp2 =	0.25
Width of Chimney	bc =	0.70
Height of Chimney above ground level	hc1 =	0.30
Height of Chimney under ground level	hc2 =	3.10
Depth of Pad	H =	3.60

Quantities			
Item	**Volumes**		
	Unit	**Per Leg**	**Per Tower**
Concrete	m3	5.8	23.2
Excavation	m3	81.7	326.9
Backfill	m3	75.9	303.7
Lean Concrete	m3	1.8	7.4
Formwork	m2	14.9	59.7
Reinforcement	kg	420.8	1683.3

Material and Soil Specifications		
Characteristic Compressive Strength of Concrete	20	Mpa
Characteristic Strength of Steel Rebar	500	Mpa
Natual Soil Density	1.02	ton/m3
Backfill Density	1.02	ton/m3
Bearing Capacity of Soils	2.04	kg/cm2

1

NOTES :
1- Concrete Class : C20/25
2- Steel Reinforcement Class : S500
3- Concrete Cover : 75 mm
4- Soil Layer Shall Be Compacted To Maintain Soil Density.
5- Sulphate resistant concrete shall be used in case of aggressive soil conditions.
6- In case of high soil resistance, filling shall be done using soil with low resistance.
7- Concrete surface shall be covered with bitumen in case of aggressive soil conditions

BODY	LEG EXTENSIONS	Z1	Z2	Z3	Z4
		mm	mm	mm	mm
BE-3	**-3**	2057	5757	2909	8141
	-1.5	2294	5994	3244	8477
	+0	2531	6231	3580	8813
	+1.5	2769	6469	3916	9148
	+3	3006	6706	4252	9484
	+4.5	3244	6944	4587	9820
	+6	3481	7181	4923	10156
BE+0	**-3**	2531	6231	3580	8813
	-1.5	2769	6469	3916	9148
	+0	3006	6706	4252	9484
	+1.5	3244	6944	4587	9820
	+3	3481	7181	4923	10156
	+4.5	3718	7418	5259	10491
	+6	3956	7656	5594	10827
BE+3	**-3**	3006	6706	4252	9484
	-1.5	3244	6944	4587	9820
	+0	3481	7181	4923	10156
	+1.5	3718	7418	5259	10491
	+3	3956	7656	5594	10827
	+4.5	4193	7893	5930	11163
	+6	4431	8131	6266	11498
BE+6	**-3**	3481	7181	4923	10156
	-1.5	3718	7418	5259	10491
	+0	3956	7656	5594	10827
	+1.5	4193	7893	5930	11163
	+3	4431	8131	6266	11498
	+4.5	4668	8368	6602	11834
	+6	4905	8605	6937	12170
BE+9	**-3**	3956	7656	5594	10827
	-1.5	4193	7893	5930	11163
	+0	4431	8131	6266	11498
	+1.5	4668	8368	6602	11834
	+3	4905	8605	6937	12170
	+4.5	5143	8843	7273	12506
	+6	5380	9080	7609	12841

* All dimensions and quantities shall be checked prior to construction

1	Revised as per Consultant Comments	07.10.22	D.Nz
0	First Submission	21.07.22	D.Nz
REV./ რედაქცია	DESCRIPTION/ აღწერილობა	DATE/ თარიღი	BY/ ვის მიერ

PROJECT NAME / პროექტის დასახელება:
Open Programme Extension of the Transmission Network II
BMZ No. 2015 68 286
Contract Identification No. KfW/DSI/OHL-TD-Lot 2

EMPLOYER / დამკვეთი:
JSC Georgian State Electrosystem (GSE)
Baratashvili Street, Tbilisi, Georgia, 0105
info@gse.com.ge

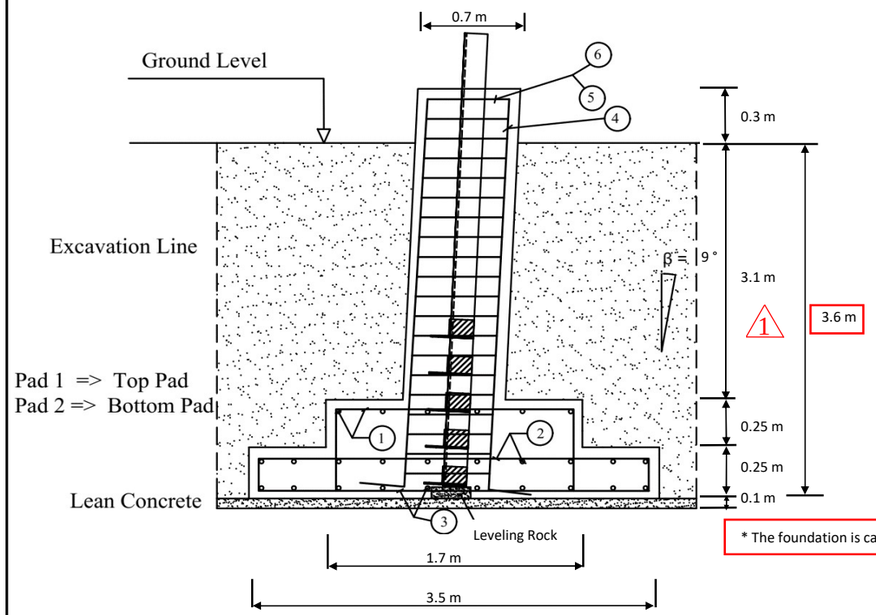
ENGINEER / ინჟინერი :
Fichtner GmbH & Co. KG
Sarweystrasse 370191 Stuttgart / Germany
info@fichtner.de

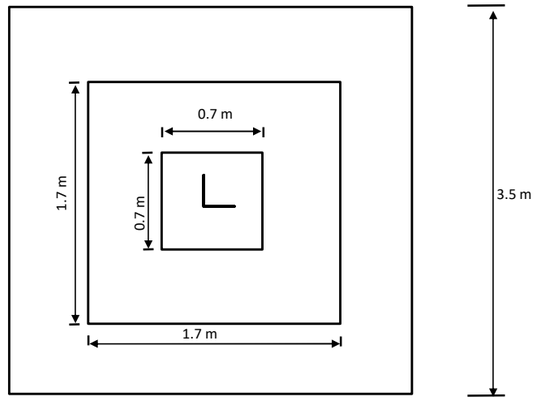
CONTRACTOR / კონტრაქტორი :
Mitas Energy and Metal Constuction Inc.
Eski Güvercinlik Yolu No: 113 - Gazi Ankara / Turkey
info@mitastower.com

APPROVAL AREA / შეთანხმებულია		STATUS / სტატუსი AP ☐ AC ☐ NA ☐	STAMP / ბეჭედი:
REVIEWED BY / განხილულია:			
DATE OF REVIEW / განხილვის თარიღი:			
APPROVED BY / დამტკიცებულია:	K.KARAGOZ		
CHECKED BY / შემოწმებულია:	H.O.BULUT	Foundation Drawings of Tower Type	
DESIGNED BY / ავტორი:	D. Nezamolmolki	'' 12B-LA ''	
DRAWN BY / შემსრულებელი:	D. Nezamolmolki	Soil Type 4-Normal Soil-Submerge	
DATE OF ISSUE / გამოცემის თარიღი:	21.07.22	Pad & Chimney Foundation	

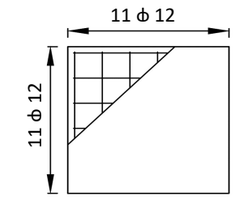
SCALE/ მასშტაბი	DOC NO./ დოკუმენტის ნომერი	REV./ რედაქცია	PAGE/ გვერდი
N.A.	7145A07-EG-FND-DWG-0613_01	1	8 of 10

Soil Type:	Type 5-Poor Soil-Dry
Foundation Type:	Pad & Chimney
Tower Type:	12B-LA

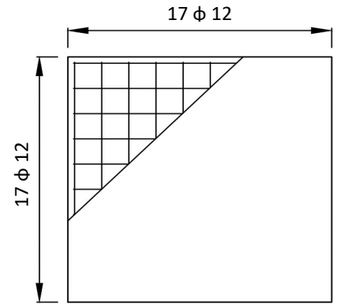




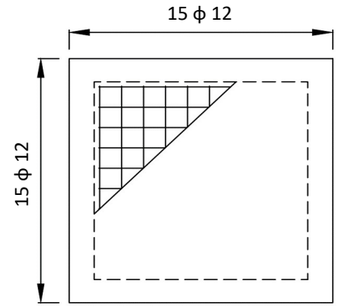
Mark	Pattern	Length cm	Diameter mm	Unit Weight (kg)	QTY	Total Weight (kg)
1	155, 35, 15	255	12	2.26	22	49.8
2	335, 10, 15	385	12	3.42	30	102.6
3	335	335	12	2.97	34	101.1
4	40, 375	415	16	6.56	12	78.7
5	57, 57	250	8	0.99	26	25.6
6	27	42	8	0.17	104	17.2
					SUM	375.0



Top of Pad 1

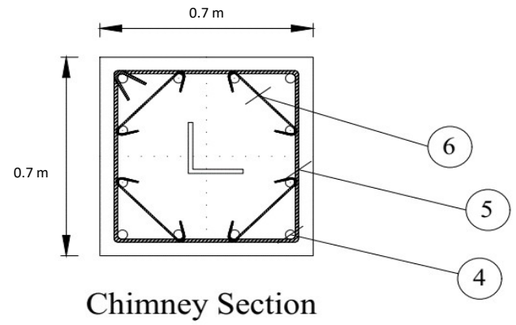


Bottom of Pad 2

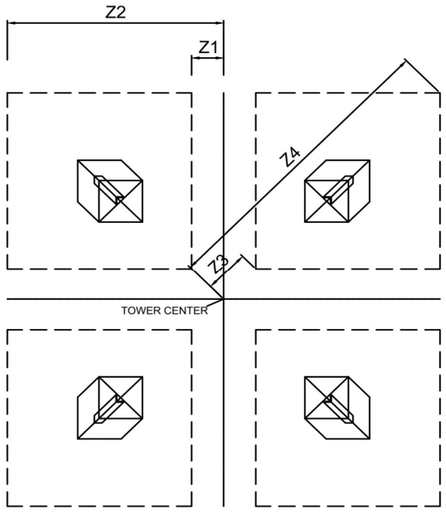


Top of Pad 2

* The foundation is cast inside formwork. 1



Chimney Section



PLAN VIEW

BODY	LEG EXTENSIONS	Z1	Z2	Z3	Z4
		mm	mm	mm	mm
BE-3	-3	2157	5657	3050	8000
	-1.5	2394	5894	3386	8336
	+0	2631	6131	3721	8671
	+1.5	2869	6369	4057	9007
	+3	3106	6606	4393	9343
	+4.5	3344	6844	4729	9678
	+6	3581	7081	5064	10014
BE+0	-3	2631	6131	3721	8671
	-1.5	2869	6369	4057	9007
	+0	3106	6606	4393	9343
	+1.5	3344	6844	4729	9678
	+3	3581	7081	5064	10014
	+4.5	3818	7318	5400	10350
	+6	4056	7556	5736	10686
BE+3	-3	3106	6606	4393	9343
	-1.5	3344	6844	4729	9678
	+0	3581	7081	5064	10014
	+1.5	3818	7318	5400	10350
	+3	4056	7556	5736	10686
	+4.5	4293	7793	6072	11021
	+6	4531	8031	6407	11357
BE+6	-3	3581	7081	5064	10014
	-1.5	3818	7318	5400	10350
	+0	4056	7556	5736	10686
	+1.5	4293	7793	6072	11021
	+3	4531	8031	6407	11357
	+4.5	4768	8268	6743	11693
	+6	5005	8505	7079	12029
BE+9	-3	4056	7556	5736	10686
	-1.5	4293	7793	6072	11021
	+0	4531	8031	6407	11357
	+1.5	4768	8268	6743	11693
	+3	5005	8505	7079	12029
	+4.5	5243	8743	7414	12364
	+6	5480	8980	7750	12700

Dimensions (m)

Width of Pad1	bp1 =	1.70
Width of Pad2	bp2 =	3.50
Height of Pad1	hp1 =	0.25
Height of Pad2	hp2 =	0.25
Width of Chimney	bc =	0.70
Height of Chimney above ground level	hc1 =	0.30
Height of Chimney under ground level	hc2 =	3.10
Depth of Pad	H =	3.60

Quantities

Item	Volumes		
	Unit	Per Leg	Per Tower
Concrete	m3	5.5	21.8
Excavation	m3	74.9	299.7
Backfill	m3	69.5	277.9
Lean Concrete	m3	1.7	6.7
Formwork	m2	14.7	58.9
Reinforcement	kg	375.0	1500.0

Material and Soil Specifications

Characteristic Compressive Strength of Concrete	20	Mpa
Characteristic Strength of Steel Rebar	500	Mpa
Natual Soil Density	1.63	ton/m3
Backfill Density	1.63	ton/m3
Bearing Capacity of Soils	1.53	kg/cm2

1

NOTES :
1- Concrete Class : C20/25
2- Steel Reinforcement Class : S500
3- Concrete Cover : 75 mm
4- Soil Layer Shall Be Compacted To Maintain Soil Density.
5- Sulphate resistant concrete shall be used in case of aggressive soil conditions.
6- In case of high soil resistance, filling shall be done using soil with low resistance.
7- Concrete surface shall be covered with bitumen in case of aggressive soil conditions

* All dimensions and quantities shall be checked prior to construction

1	Revised as per Consultant Comments	07.10.22	D.Nz
0	First Submission	21.07.22	D.Nz
REV./ რედაქცია	DESCRIPTION/ აღწერილობა	DATE/ თარიღი	BY/ ვის მიერ

PROJECT NAME / პროექტის დასახელება:
Open Programme Extension of the Transmission Network II
BMZ No. 2015 68 286
Contract Identification No. KfW/DSI/OHL-TD-Lot 2

EMPLOYER / დამკვეთი:
JSC Georgian State Electrosystem (GSE)
Baratashvili Street, Tbilisi, Georgia, 0105
info@gse.com.ge

ENGINEER / ინჟინერი :
Fichtner GmbH & Co. KG
Sarweystrasse 370191 Stuttgart / Germany
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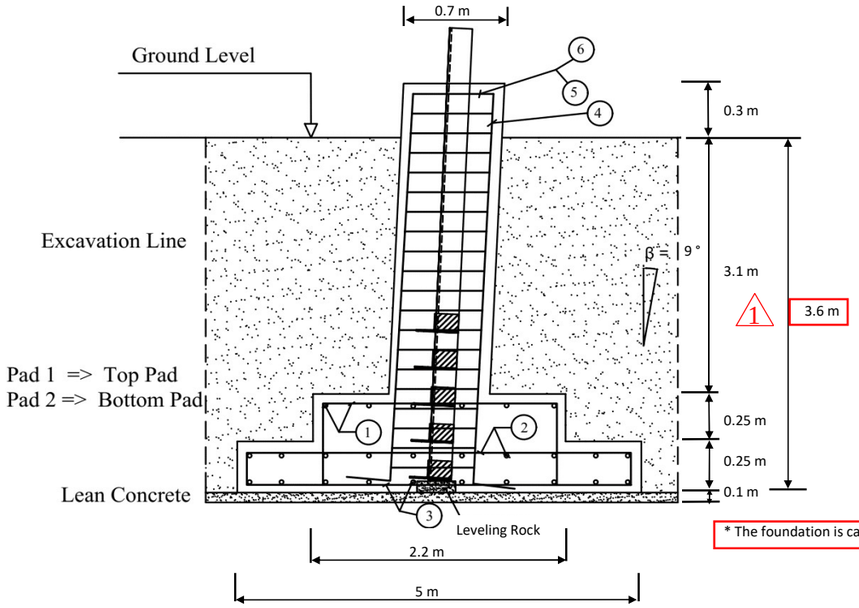
CONTRACTOR / კონტრაქტორი :
Mitas Energy and Metal Constuction Inc.
Eski Güvercinlik Yolu No: 113 - Gazi Ankara / Turkey
info@mitastower.com

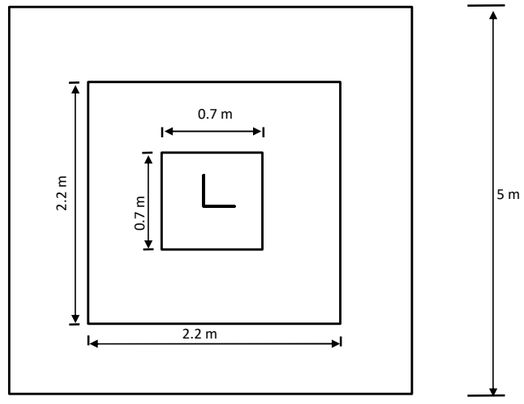
APPROVAL AREA / შეთანხმებულია		STATUS / სტატუსი AP ☐ AC ☐ NA ☐	STAMP / ბეჭედი:
REVIEWED BY / განხილულია:			
DATE OF REVIEW / განხილვის თარიღი:			
APPROVED BY / დამტკიცებულია:	K.KARAGOZ		
CHECKED BY / შემოწმებულია:	H.O.BULUT	Foundation Drawings of Tower Type	
DESIGNED BY / ავტორი:	D. Nezamolmolki	'' 12B-LA ''	
DRAWN BY / შემსრულებელი:	D. Nezamolmolki	Soil Type 5-Poor Soil-Dry	
DATE OF ISSUE / გამოცემის თარიღი:	21.07.22	Pad & Chimney Foundation	

SCALE/ მასშტაბი	DOC NO./ დოკუმენტის ნომერი	REV./ რედაქცია	PAGE/ გვერდი
N.A.	7145A07-EG-FND-DWG-0613_01	1	9 of 10

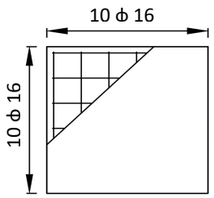
Soil Type:	Type 5-Poor Soil-Submerge
Foundation Type:	Pad & Chimney
Tower Type:	12B-LA



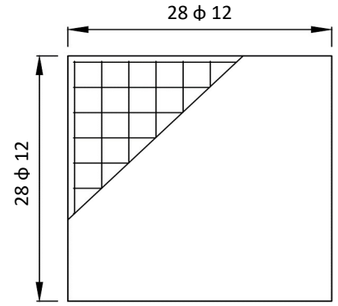
* The foundation is cast inside formwork. 1



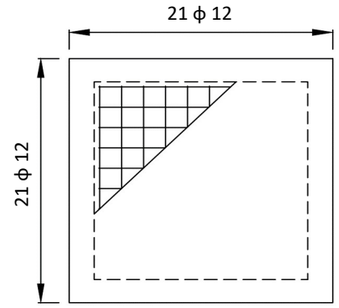
Mark	Pattern	Length cm	Diameter mm	Unit Weight (kg)	QTY	Total Weight (kg)
1	205, 35, 15	305	16	4.82	20	96.4
2	485, 10, 15	535	12	4.75	42	199.5
3	485	485	12	4.31	56	241.2
4	40, 375	415	16	6.56	12	78.7
5	57, 57	250	8	0.99	26	25.6
6	27	42	8	0.17	104	17.2
					SUM	658.6



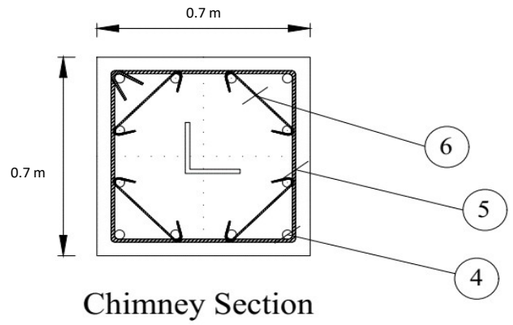
Top of Pad 1



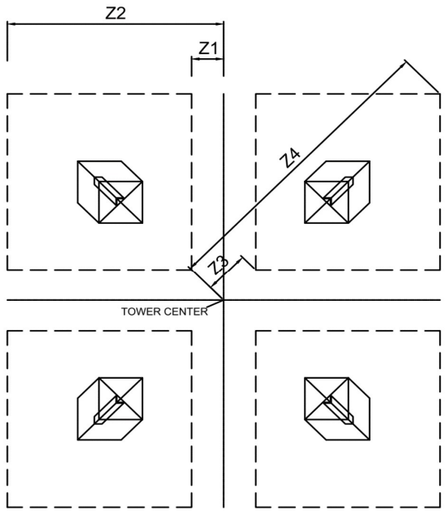
Bottom of Pad 2



Top of Pad 2



Chimney Section



PLAN VIEW

Dimensions (m)		
Width of Pad1	bp1 =	2.20
Width of Pad2	bp2 =	5.00
Height of Pad1	hp1 =	0.25
Height of Pad2	hp2 =	0.25
Width of Chimney	bc =	0.70
Height of Chimney above ground level	hc1 =	0.30
Height of Chimney under ground level	hc2 =	3.10
Depth of Pad	H =	3.60

Quantities			
Item	**Volumes**		
	Unit	**Per Leg**	**Per Tower**
Concrete	m3	9.1	36.5
Excavation	m3	133.2	532.8
Backfill	m3	124.1	496.3
Lean Concrete	m3	3.1	12.5
Formwork	m2	16.7	66.9
Reinforcement	kg	658.6	2634.3

Material and Soil Specifications		
Characteristic Compressive Strength of Concrete	20	Mpa
Characteristic Strength of Steel Rebar	500	Mpa
Natual Soil Density	0.82	ton/m3
Backfill Density	0.82	ton/m3
Bearing Capacity of Soils	0.82	kg/cm2

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NOTES :
1- Concrete Class : C20/25
2- Steel Reinforcement Class : S500
3- Concrete Cover : 75 mm
4- Soil Layer Shall Be Compacted To Maintain Soil Density.
5- Sulphate resistant concrete shall be used in case of aggressive soil conditions.
6- In case of high soil resistance, filling shall be done using soil with low resistance.
7- Concrete surface shall be covered with bitumen in case of aggressive soil conditions

BODY	LEG EXTENSIONS	Z1	Z2	Z3	Z4
		mm	mm	mm	mm
BE-3	**-3**	1407	6407	1989	9061
	-1.5	1644	6644	2325	9396
	+0	1881	6881	2661	9732
	+1.5	2119	7119	2997	10068
	+3	2356	7356	3332	10403
	+4.5	2594	7594	3668	10739
	+6	2831	7831	4004	11075
BE+0	**-3**	1881	6881	2661	9732
	-1.5	2119	7119	2997	10068
	+0	2356	7356	3332	10403
	+1.5	2594	7594	3668	10739
	+3	2831	7831	4004	11075
	+4.5	3068	8068	4339	11411
	+6	3306	8306	4675	11746
BE+3	**-3**	2356	7356	3332	10403
	-1.5	2594	7594	3668	10739
	+0	2831	7831	4004	11075
	+1.5	3068	8068	4339	11411
	+3	3306	8306	4675	11746
	+4.5	3543	8543	5011	12082
	+6	3781	8781	5347	12418
BE+6	**-3**	2831	7831	4004	11075
	-1.5	3068	8068	4339	11411
	+0	3306	8306	4675	11746
	+1.5	3543	8543	5011	12082
	+3	3781	8781	5347	12418
	+4.5	4018	9018	5682	12753
	+6	4255	9255	6018	13089
BE+9	**-3**	3306	8306	4675	11746
	-1.5	3543	8543	5011	12082
	+0	3781	8781	5347	12418
	+1.5	4018	9018	5682	12753
	+3	4255	9255	6018	13089
	+4.5	4493	9493	6354	13425
	+6	4730	9730	6690	13761

* All dimensions and quantities shall be checked prior to construction

1	Revised as per Consultant Comments	07.10.22	D.Nz
0	First Submission	21.07.22	D.Nz
REV./ რედაქცია	DESCRIPTION/ აღწერილობა	DATE/ თარიღი	BY/ ვის მიერ

PROJECT NAME / პროექტის დასახელება:
Open Programme Extension of the Transmission Network II
BMZ No. 2015 68 286
Contract Identification No. KfW/DSI/OHL-TD-Lot 2

EMPLOYER / დამკვეთი:
JSC Georgian State Electrosystem (GSE)
Baratashvili Street, Tbilisi, Georgia, 0105
info@gse.com.ge

ENGINEER / ინჟინერი :
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Sarweystrasse 370191 Stuttgart / Germany
info@fichtner.de

CONTRACTOR / კონტრაქტორი :
Mitas Energy and Metal Constuction Inc.
Eski Güvercinlik Yolu No: 113 - Gazi Ankara / Turkey
info@mitastower.com

APPROVAL AREA / შეთანხმებულია		STATUS / სტატუსი AP ☐ AC ☐ NA ☐	STAMP / ბეჭედი:
REVIEWED BY / განხილულია:			
DATE OF REVIEW / განხილვის თარიღი:			
APPROVED BY / დამტკიცებულია:	K.KARAGOZ		
CHECKED BY / შემოწმებულია:	H.O.BULUT	Foundation Drawings of Tower Type	
DESIGNED BY / ავტორი:	D. Nezamolmolki	'' 12B-LA ''	
DRAWN BY / შემსრულებელი:	D. Nezamolmolki	Soil Type 5-Poor Soil-Submerge	
DATE OF ISSUE / გამოცემის თარიღი:	21.07.22	Pad & Chimney Foundation	

SCALE/ მასშტაბი	DOC NO./ დოკუმენტის ნომერი	REV./ რედაქცია	PAGE/ გვერდი
N.A.	7145A07-EG-FND-DWG-0613_01	1	10 of 10