

Summary of Ultimate Foundation forces for Basic Tower + 0.0m / 1.5m / 3.0m / 4.5m / 6.0m / 9.0m & 12.0m Extensions

St. No.	Model	Load Case	Leg Member	Force In Leg Dir. (kN)	Residual Shear Perpendicular To Leg (kN)	Residual Shear Horizontal To Leg - Res. (kN)	Residual Shear Horizontal To Leg - Long. (kN)	Residual Shear Horizontal To Leg - Tran. (kN)	Total Long. Force (kN)	Total Tran. Force (kN)	Total Vert. Force (kN)
Foundation Forces along LEG Direction											
1	Run #17 16 a 196 2dl +12m extension with redundants	LA01 : 0 deg wind: Normal Condition : Vmax	m19-4X	2654.517	56.727	56.994	0.458	56.992			
2	Run #17 16 a 196 2dl +12m extension with redundants	LA02 : 0 deg wind: Normal Condition : Vmin	m19-4Y	-2356.622	77.152	77.512	0.232	77.512			
3	Run #17 16 a 196 2dl +12m extension with redundants	LA01 : 0 deg wind: Normal Condition High Intensity 0deg Wind	m19-4XY	-848.044	95.689	96.126	96.123	96.123			
4	Run #17 16 a 196 2dl +12m extension with redundants	LA01 : 0 deg wind: Normal Condition High Intensity 0deg Wind	m19-4XY	-848.044	95.689	96.126	96.123	96.123			
Foundation Forces along Global Direction (Vertical Direction)											
1	Run #17 16 a 196 2dl +12m extension with redundants	LA01 : 0 deg wind: Normal Condition : Vmax	m19-4X						-254.82	-311.35	2624.46
2	Run #17 16 a 196 2dl +12m extension with redundants	LA02 : 0 deg wind: Normal Condition : Vmin	m19-4Y						-225.8	-303.08	-2327.4
3	Run #17 16 a 196 2dl +12m extension with redundants	LA01 : 0 deg wind: Normal Condition : Vmax	m19-4X						-254.82	-311.35	2624.46
4	Run #17 16 a 196 2dl +12m extension with redundants	LA01 : 0 deg wind: Normal Condition : Vmax	m19-4X						-254.82	-311.35	2624.46

Notes

- Above loads are with Tower factored loads in KN.
- For foundation design, the corresponding overload factors shall be considered extra.

POWER GRID COMPANY OF BANGLADESH

APPROVED

This approval is general only and does not release the manufacturer/contractor/supplier from compliance with Specifications and Standards for Design, workmanship and performance as stipulated in the contract.

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09 SEP 2012

Summary of Ultimate Foundation forces for Basic Tower All Extensions
Foundation forces for tension tower

Sr. No.	Model	Load Case	Leg Member	Force in Leg Dir. (kN)	Residual Shear Perpendicular To Leg (kN)	Residual Shear Horizontal To Leg - Res. (kN)	Residual Shear Horizontal To Leg - Long. (kN)	Residual Shear Horizontal To Leg - Tran. (kN)	Total Long. Force (kN)	Total Tran. Force (kN)	Total Vert. Force (kN)
Foundation Forces along LEG Direction											
1	Run #12 11 a 196 2d1 +25m extension low	L001 : 0 deg wind: Normal Condition :Vmax	M24X	3267.924	89.392	89.896	-2.273	89.867	-351.29	-443.43	3219.83
2	Run #12 11 a 196 2d1 +25m extension low	L002 : 0 deg wind: Normal Condition :Vmin	M24Y	-2792.754	135	135.788	-1.178	135.783	-380.27	-437.23	-2745.24
3	Run #14 13 a 196 2d1 +25m extension high intensly with L091: Normal Condition High Intensly 90deg Wind	M24Y	-1278.725	192.634	193.687	193.534	-7.685	-7.685	-352.03	-446.6	3209.86
4	Run #14 13 a 196 2d1 +25m extension high intensly with L091: Normal Condition High Intensly 90deg Wind	M24Y	-1278.725	192.634	193.687	193.534	-7.685	-7.685	-356.35	-412.09	3019.07
Foundation Forces along Global Direction (Vertical Direction)											
1	Run #12 11 a 196 2d1 +25m extension low	L001 : 0 deg wind: Normal Condition :Vmax	M24X						-351.29	-443.43	3219.83
2	Run #12 11 a 196 2d1 +25m extension low	L002 : 0 deg wind: Normal Condition :Vmin	M24Y						-380.27	-437.23	-2745.24
3	Run #25 24 a 196 2d1 +25m extension with redundants M1001 : 0 deg wind: Normal Condition :Vmax	M24-1X							-352.03	-446.6	3209.86
4	Run #25 24 a 196 2d1 +25m extension with redundants M1023 : 30deg Diagonal wind: Normal Condition :Vmax	M24-1X							-356.35	-412.09	3019.07

- Notes
- Above loads are with Tower factored loads in kN.
 - For foundation design, the corresponding overload factors shall be considered extra.
 - Tower slope = 6.275deg
 - Hole to hole Width at 0.0m Wl = 7.5m

POWER GRID COMPANY OF BANGLADESH
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31 JAN 2013

Summary of Ultimate Foundation Forces for Basic Tower + 0.0m / 1.5m / 3.0m / 4.5m / 6.0m / 9.0m 12m & 15m Extensions

Sr. No.	Model	Load Case	Leg Member	Force in Leg Dir. (kN)	Residual Shear Perpendicular To Leg (kN)	Residual Shear Horizontal To Leg - Res. (kN)	Residual Shear Horizontal To Leg - Long. (kN)	Residual Shear Horizontal To Leg - Tran. (kN)	Total Long. Force (kN)	Total Tran. Force (kN)	Total Vert. Force (kN)
Foundation Forces along LEG Direction											
1	Run #9 09 a 196 2d125 +15m extension with redundants.	L001 : 25 dev :0 deg wind: Normal Condition :Vmax	EXT 3-FX	5256.055	75.053	75.829	-0.537	75.827	-753.43	-829.79	5135.71
2	Run #9 09 a 196 2d125 +15m extension with redundants.	L002 : 25 dev :0 deg wind: Normal Condition :Vmin	EXT 3-FY	-4718.875	120.633	122.086	8.974	121.758	-684.58	-797.36	-4601.95
3	Run #1 01 a 196 2d125 +15m extension,low	L027 : 25 dev :0 deg wind: Normal Condition :Left Circul M18P	M18P	-1249.477	173.718	174.531	50.148	167.171	-757.84	-831.68	5133.95
4	Run #1 01 a 196 2d125 +15m extension,low	L027 : 25 dev :0 deg wind: Normal Condition :Left Circul M18P	M18P	-1249.477	173.718	174.531	50.148	167.171	-757.84	-831.68	5133.95
Foundation Forces along Global Direction (Vertical Direction)											
1	Run #9 09 a 196 2d125 +15m extension with redundants.	L001 : 25 dev :0 deg wind: Normal Condition :Vmax	EXT 3-FX						-753.43	-829.79	5135.71
2	Run #9 09 a 196 2d125 +15m extension with redundants.	L002 : 25 dev :0 deg wind: Normal Condition :Vmin	EXT 3-FY						-684.58	-797.36	-4601.95
3	Run #1 01 a 196 2d125 +15m extension,low	L001 : 25 dev :0 deg wind: Normal Condition :Vmax	M18X						-757.84	-831.68	5133.95
4	Run #1 01 a 196 2d125 +15m extension,low	L001 : 25 dev :0 deg wind: Normal Condition :Vmax	M18X						-757.84	-831.68	5133.95

Notes

- Above loads are with Tower factored loads in kN.
- For foundation design, the corresponding overload factors shall be considered extra.
- Tower slope = 8.3495 deg
- Stub = H 250 x 250 x 35

POWER GRID COMPANY OF BANGLADESH
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23 SEP 2012

Summary of Ultimate Foundation forces for Basic Tower All Extensions
Foundation forces for tension tower

Sr. No.	Model	Load Case	Leg Member	Force In Leg Dir. (kN)	Residual Shear Perpendicular To Leg (kN)	Residual Shear Horizontal To Leg - Res. (kN)	Residual Shear Horizontal To Leg - Long. (kN)	Residual Shear Horizontal To Leg - Tran. (kN)	Total Long. Force (kN)	Total Tran. Force (kN)	Total Vert. Force (kN)
Foundation Forces along LEG Direction											
1	Run #1 08 a 196 209 +15m extension, low	Out Pt -L121 :90°Ten :0 deg wind: NC :Vmax	g106ap	8017.428	141.227	143.565	9.362	143.259	-1360.46	-1494.35	7759.84
2	Run #1 08 a 196 209 +15m extension, low	L122 :90°Ten :0 deg wind: NC :Vmin	g106ax	-7223.213	169.921	172.549	4.989	172.477	-1221.1	-1388.59	-6984.58
3	Run #1 08 a 196 209 +15m extension, low	Out Pt -L147 :90°Ten :0 deg wind: NC :Single Circuit	g106ax	-2694.541	218.361	220.002	54.509	213.142	-1360.46	-1494.35	7759.84
4	Run #1 08 a 196 209 +15m extension, low	Out Pt -L147 :90°Ten :0 deg wind: NC :Single Circuit	g106ax	-2694.541	218.361	220.002	54.509	213.142	-1366.07	-1494.21	7755.38
Foundation Forces along Global Direction (Vertical Direction)											
1	Run #1 08 a 196 209 +15m extension, low	L121 :90°Ten :0 deg wind: NC :Vmax	g106ap						-1360.46	-1494.35	7759.84
2	Run #1 08 a 196 209 +15m extension, low	L122 :90°Ten :0 deg wind: NC :Vmin	g106ax						-1221.1	-1388.59	-6984.58
3	Run #1 08 a 196 209 +15m extension, low	L121 :90°Ten :0 deg wind: NC :Vmax	g106ap						-1360.46	-1494.35	7759.84
4	Run #1 18 a 196 209 +15m extension with RED, low	L121 :90°Ten :0 deg wind: NC :Vmax	M20-1X						-1366.07	-1494.21	7755.38

- Notes
- Above loads are with Tower factored loads in kN.
 - For foundation design, the corresponding overload factors shall be considered extra.
 - Tower slope = 9.877 deg
 - Hole to hole Width at 0.0m W = 10.0m

POWER GRID COMPANY OF BANGLADESH
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29 NOV 2012

Summary of Ultimate Foundation forces for Basic Tower All Extensions
Foundation forces for tension tower

Sr. No.	Model	Load Case	Leg Member	Force in Leg Dir. (kN)	Residual Shear Perpendicular To Leg (kN)	Residual Shear Horizontal To Leg - Res. (kN)	Residual Shear Horizontal To Leg - Long. (kN)	Residual Shear Horizontal To Leg - Tran. (kN)	Total Long. Force (kN)	Total Tran. Force (kN)	Total Vert. Force (kN)
Foundation Forces along LEG Direction											
1	Run #1 08 a 196 2dt6 +15m extension, low	L001 : 60°Ten : 0 deg wind : NC : Vmax	g106aP	7339.144	124.113	125.967	11.474	125.343			
2	Run #1 08 a 196 2dt6 +15m extension, low	L002 : 60°Ten : 0 deg wind : NC : Vmin	g106aXY	-6592.961	161.652	163.666	3.628	163.626			
3	Run #1 08 a 196 2dt6 +15m extension, low	L027 : 60°Ten : 0 deg wind : NC : Single Circuit : Vmax	g106aX	-2323.415	197.097	198.447	42.774	193.782			
4	Run #1 08 a 196 2dt6 +15m extension, low	L027 : 60°Ten : 0 deg wind : NC : Single Circuit : Vmax	g106aX	-2323.415	197.097	198.447	42.774	193.782			
Foundation Forces along Global Direction (Vertical Direction)											
1	Run #1 08 a 196 2dt6 +15m extension, low	L001 : 60°Ten : 0 deg wind : NC : Vmax	g106aP						-1131.33	-1245.2	7144.79
2	Run #1 08 a 196 2dt6 +15m extension, low	L002 : 60°Ten : 0 deg wind : NC : Vmin	g106aXY						-1008.59	-1168.59	-6411.74
3	Run #1 08 a 196 2dt6 +15m extension, low	L001 : 60°Ten : 0 deg wind : NC : Vmax	g106aP						-1131.33	-1245.2	7144.79
4	Run #1 08 a 196 2dt6 +15m extension, low	L031 : 60°Ten : 30 deg wind : NC : Vmax	g106aP						-1138.75	-1211.29	7020.4

Notes

- Above loads are with Tower factored loads in kN.
- For foundation design, the corresponding overload factors shall be considered extra.
- Tower slope = 8.9 deg
- Hole to hole Width at 0.0m W = 9.0m

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18 OCT 2012

Summary of Ultimate Foundation forces for Basic Tower All Extensions
Foundation forces for terminal tower

Sr. No.	Model	Load Case	Leg Member	Force in Leg Dir. (kN)	Residual Shear Perpendicular To Leg (kN)	Residual Shear Horizontal To Leg - Res. (kN)	Residual Shear Horizontal To Leg - Long. (kN)	Residual Shear Horizontal To Leg - Tran. (kN)	Total Long. Force (kN)	Total Tran. Force (kN)	Total Vert. Force (kN)
Foundation Forces along LEG Direction											
1	Run #1 08 a 196 2d16 +15m extension, low	Out pt - L245 :30°DE :0 deg wind: NC: Vmax	g106aP	7331.906	116.756	118.675	22.359	116.55	-1141.06	-1235.25	7137.41
2	Run #1 08 a 196 2d16 +15m extension, low	L276 :30°DE :30 deg wind: NC: Vmin	g106aXY	-6552.803	137.506	140.467	60.946	126.557	-1059.29	-1124.9	-6369.51
3	Run #1 08 a 196 2d16 +15m extension, low	Out pt - L391 :0°DE :0 deg wind: NC: Single Circuit, Vg106aX	g106aX	185.398	191.544	192.666	50.292	185.986	-1141.06	-1235.25	7137.41
4	Run #1 08 a 196 2d16 +15m extension, low	Out pt - L391 :0°DE :0 deg wind: NC: Single Circuit, Vg106aX	g106aX	185.398	191.544	192.666	50.292	185.986	-1178.85	-1180.71	7028.32
Foundation Forces along Global Direction (Vertical Direction)											
1	Run #1 08 a 196 2d16 +15m extension, low	Out pt - L245 :30°DE :0 deg wind: NC: Vmax	g106aP						-1141.06	-1235.25	7137.41
2	Run #1 08 a 196 2d16 +15m extension, low	L276 :30°DE :30 deg wind: NC: Vmin	g106aXY						-1059.29	-1124.9	-6369.51
3	Run #1 08 a 196 2d16 +15m extension, low	Out pt - L245 :30°DE :0 deg wind: NC: Vmax	g106aP						-1141.06	-1235.25	7137.41
4	Run #1 08 a 196 2d16 +15m extension, low	L305 :30°DE :45 deg wind: NC: Vmax	g106aP						-1178.85	-1180.71	7028.32

Notes

- 1 Above loads are with Tower factored loads in kN.
- 2 For foundation design, the corresponding overload factors shall be considered extra.
- 3 Tower slope = 8.9 deg
- 4 Hole to hole Width at 0.0m W = 9.0m

POWER GRID COMPANY OF BANGLADESH
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18 OCT 2012

SUMMARY OF FOUNDATION LOADS

PROJECT : 230 KV FOUR CIRCUIT TRANSMISSION LINE

CLIENT : PGCBL

SUSPENSION TOWER TYPE "2QL" (0° - 1° deg)

2QL WITH +12M BODY EXTENSION

NORMAL CONDITION :

PARELLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	2782.78	-2411.86	60.90	3.42	1
Kg	2,83,765	(2,45,943)	6,210	348	
KN	2717.26	-2460.98	61.49	3.48	16
Kg	2,77,085	(2,50,951)	6,270	355	
KN	2717.26	-2460.98	61.49	3.48	16
Kg	2,77,085	(2,50,951)	6,270	355	
KN	1009.28	-788.13	5.12	49.54	67
Kg	1,02,918	(80,367)	522	5,052	

BROKEN WIRE CONDITION :

PARELLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	2683.32	-2371.27	66.61	22.26	4
Kg	2,73,623	(2,41,803)	6,792	2,270	
KN	2608.43	-2424.09	71.74	17.54	25
Kg	2,65,987	(2,47,189)	7,315	1,789	
KN	2608.43	-2424.09	71.74	17.54	25
Kg	2,65,987	(2,47,189)	7,315	1,789	
KN	2473.08	-2236.97	66.53	30.06	24
Kg	2,52,185	(2,28,108)	6,784	3,065	

POWER GRID COMPANY OF BANGLADESH
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(Engr. Abdur Rashid Khan)
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14 DEC 2014

SUMMARY OF FOUNDATION LOADS**PROJECT : 230 KV FOUR CIRCUIT TRANSMISSION LINE****CLIENT : PGCBL****SUSPENSION TOWER TYPE "2QL" (0° - 1° deg)****2QL WITH +12M BODY EXTENSION****HIGH INTENSITY WIND CONDITION :**

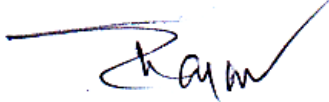
PARELLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	1244.72	-1007.08	42.50	43.90	3
Kg	126,926	(102,694)	4,334	4,476	
KN	1244.72	-1007.08	42.50	43.90	3
Kg	126,926	(102,694)	4,334	4,476	
KN	930.90	-690.67	70.28	0.17	1
Kg	94,925	(70,429)	7,167	17	
KN	1185.98	-945.82	0.26	72.62	4
Kg	120,937	(96,447)	26	7,406	

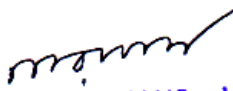
Notes :-

- 1) The above loads are calculated considering stub is along the tower leg
- 2) Stub Section HL 200x200x25
- 3) Stub Slope (First Slope) = 4.418°
- 4) Above Foundation Loads are inclusive of Tower FOS/OLF (Over Load Factor) & Exclusive of Foundation Factor Of Safety.
- 5) Trans Shear & Long Shear values are inclusive of respective shear values at Concrete level.

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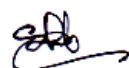

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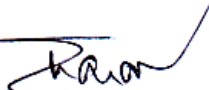

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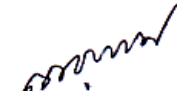
14 DEC 2014



SUMMARY OF FOUNDATION LOADS					
PROJECT : 230 KV FOUR CIRCUIT TRANSMISSION LINE					
CLIENT : PGCBL					
HIGH SUSPENSION TOWER TYPE "2Q1" (0° - 3° deg)					
2Q1 WITH +25M BODY EXTENSION					
NORMAL CONDITION :					
PARELLEL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	4314.75	-3620.37	89.35	3.16	1
Kg	4,39,984	(3,69,177)	9,111	323	
KN	4205.16	-3705.34	90.32	3.24	2
Kg	4,28,809	(3,77,841)	9,210	330	
KN	4205.16	-3705.34	90.32	-3.24	2
Kg	4,28,809	(3,77,841)	9,210	(330)	
KN	1374.54	-978.53	7.46	73.33	67
Kg	1,40,165	(99,783)	761	7,477	
BROKEN WIRE CONDITION :					
PARELLEL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	3907.89	-3354.38	85.50	19.08	5
Kg	3,98,496	(3,42,052)	8,719	1,945	
KN	3817.06	-3419.79	86.46	18.92	6
Kg	3,89,233	(3,48,723)	8,817	1,930	
KN	3811.00	-3409.94	91.27	14.68	20
Kg	3,88,615	(3,47,719)	9,307	1,497	
KN	3704.92	-3288.94	85.47	25.25	16
Kg	3,77,798	(3,35,380)	8,715	2,574	
HIGH INTENSITY WIND CONDITION :					
PARELLEL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	1713.90	-1289.12	67.74	68.23	123
Kg	1,74,770	(1,31,454)	6,908	6,958	
KN	1713.90	-1289.12	67.74	68.23	123
Kg	1,74,770	(1,31,454)	6,908	6,958	
KN	1337.56	-910.71	112.22	0.40	121
Kg	1,36,394	(92,867)	11,443	40.3	
KN	1591.04	-1164.23	0.41	113.11	124
Kg	1,62,242	(1,18,719)	41.7	11,534	
Notes :- 1) The above loads are calculated considering stub is along the tower leg 2) Stub Section HL 250x250x35 3) Stub Slope = 4.66° 4) Above Foundation Loads are inclusive of Tower FOS/OLF (Over Load Factor) & Exclusive of Foundation Factor Of Safety. 5) Trans Shear & Long Shear values are inclusive of respective shear values at Concrete level.					


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POWER GRID COMPANY OF BANGLADESH
APPROVED
 This approval is general only and does not release the manufacturer/contractor/supplier from compliance with specification and Standards for Design workmanship and performance as stipulated in the contract.

15 APR 2015



SUMMARY OF FOUNDATION LOADS

PROJECT : 230 KV FOUR CIRCUIT TRANSMISSION LINE

CLIENT : PGCBL

ANGLE/TENSION TOWER TYPE "2Q15" (0° - 15° deg)

2Q15 WITH +9M BODY EXTENSION

NORMAL CONDITION :

PARALLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	6031.01	-5529.31	83.30	19.97	217
Kg	6,14,994	(5,63,835)	8,494	2,036	
KN	5938.21	-5604.96	83.86	20.28	218
Kg	6,05,531	(5,71,549)	8,551	2,067	
KN	1897.03	-1524.61	116.54	52.62	354
Kg	1,93,444	(1,55,467)	11,884	5,366	
KN	1739.48	-1410.79	48.67	108.12	367
Kg	1,77,378	(1,43,861)	4,963	11,025	

BROKEN WIRE CONDITION :

PARALLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	5571.84	-5148.26	112.83	33.83	273
Kg	5,68,171	(5,24,978)	11,506	3,450	
KN	5491.01	-5229.02	101.01	45.88	232
Kg	5,59,930	(5,33,214)	10,300	4,678	
KN	5571.84	-5148.26	112.83	33.83	273
Kg	5,68,171	(5,24,978)	11,506	3,450	
KN	5273.15	-4989.72	93.28	78.79	260
Kg	5,37,714	(5,08,811)	9,512	8,034	

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15 APR 2015

SUMMARY OF FOUNDATION LOADS

PROJECT : 230 KV FOUR CIRCUIT TRANSMISSION LINE

CLIENT : PGCBL

ANGLE/TENSION TOWER TYPE "2Q15" (0° - 15° deg)

HIGH INTENSITY WIND CONDITION :

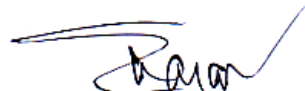
PARALLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	1306.99	-920.13	56.30	56.09	435
Kg	1,33,277	(93,828)	5,741	5,720	
KN	1306.99	-920.13	56.30	56.09	435
Kg	1,33,277	(93,828)	5,741	5,720	
KN	1010.38	-622.98	92.91	-0.93	433
Kg	1,03,030	(63,527)	9,474	(95)	
KN	1232.65	-845.30	0.92	92.64	436
Kg	1,25,696	(86,197)	94	9,446	

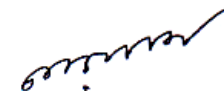
Notes :-

- 1) The above loads are calculated considering stub is along the tower leg
- 2) Stub Section SL 200x200x25(H) (S-Stands for Star Leg)
- 3) Stub Slope = 5.84°
- 4) Above Foundation Loads are inclusive of Tower FOS/OLF (Over Load Factor) & Exclusive of Foundation Factor of Safety.
- 5) Trans Shear & Long Shear values are inclusive of respective shear values at Concrete level.

POWER GRID COMPANY OF BANGLADESH
APPROVED
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15 APR 2015



SUMMARY OF FOUNDATION LOADS

PROJECT : 230 KV FOUR CIRCUIT TRANSMISSION LINE

CLIENT : PGCBL

SUSPENSION TOWER TYPE "2Q30" (0° - 30° deg)

2Q30 WITH +9M BODY EXTENSION

NORMAL CONDITION :

PARALLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	6962.68	-6387.00	98.00	18.24	229
Kg	709,998	(651,296)	9,993	1,860	
KN	6872.44	-6465.76	98.47	18.40	230
Kg	700,796	(659,327)	10,041	1,877	
KN	2142.64	-1669.76	133.58	51.65	368
Kg	218,489	(170,269)	13,621	5,267	
KN	2008.29	-1535.58	61.90	114.30	380
Kg	204,790	(156,586)	6,312	11,656	

BROKEN WIRE CONDITION :

PARALLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	6188.06	-5704.96	111.73	41.82	243
Kg	631,008	(581,746)	11,393	4,265	
KN	6100.82	-5774.08	122.73	31.29	286
Kg	622,113	(588,794)	12,515	3,190	
KN	6168.23	-5706.57	122.92	31.43	285
Kg	628,987	(581,911)	12,534	3,205	
KN	6104.05	-5669.42	112.93	76.63	272
Kg	622,442	(578,122)	11,516	7,815	

POWER GRID COMPANY OF BANGLADESH
APPROVED
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12 MAR 2015

SUMMARY OF FOUNDATION LOADS**PROJECT : 230 KV FOUR CIRCUIT TRANSMISSION LINE****CLIENT : PGCB****SUSPENSION TOWER TYPE "2Q30" (0° - 30° deg)****2Q30 WITH +9M BODY EXTENSION****HIGH INTENSITY WIND CONDITION :**

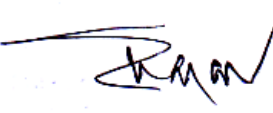
PARALLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	1356.08	-879.15	63.48	63.44	3
Kg	138,282	(89,648)	6,474	6,469	
KN	1356.08	-879.15	63.48	63.44	3
Kg	138,282	(89,648)	6,474	6,469	
KN	1063.63	-586.02	104.89	1.13	1
Kg	108,460	(59,757)	10,696	115	
KN	1277.37	-799.78	1.15	104.84	4
Kg	130,255	(81,555)	117	10,691	

Notes :-

- 1) The above loads are calculated considering stub is along the tower leg
- 2) Stub Section SL 250x250x25(H) (S-Stands for Star Leg)
- 3) Stub Slope (First Slope) = 6.579°
- 4) Above Foundation Loads are inclusive of Tower FOS/OLF (Over Load Factor) & Exclusive of Foundation Factor Of Safety.
- 5) Trans Shear & Long Shear values are inclusive of respective shear values at Concrete level.

MEMBER COMPANY OF BANGLADESH
APPROVED
This approval is general only and does not
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Standards for Design workmanship and
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12 MAR 2015



SUMMARY OF FOUNDATION LOADS**PROJECT : 230 KV FOUR CIRCUIT TRANSMISSION LINE****CLIENT : PGCB****ANGLE TOWER TYPE "2QT6" (30°-60°)****2QT6 WITH +9M BODY EXTENSION****NORMAL CONDITION :**

PARALLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	8986.40	-8118.95	113.04	21.11	1
Kg	916,419	(827,957)	11,527	2,153	
KN	8901.58	-8203.77	113.03	21.10	2
Kg	907,769	(836,607)	11,527	2,152	
KN	2693.90	-2062.34	149.20	57.37	163
Kg	274,720	(210,314)	15,215	5,851	
KN	2644.78	-1969.23	73.74	111.53	174
Kg	269,710	(200,819)	7,520	11,374	

BROKEN WIRE CONDITION :

PARALLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	7707.43	-6986.73	124.27	72.082	44
Kg	785,991	(712,495)	12,673	7,351	
KN	7574.92	-6991.80	134.55	36.93	58
Kg	772,478	(713,012)	13,721	3,766	
KN	7641.76	-6921.20	134.92	36.82	57
Kg	779,294	(705,813)	13,759	3,755	
KN	7707.43	-6986.73	124.27	72.082	44
Kg	785,991	(712,495)	12,673	7,351	

POWER GRID COMPANY OF BANGLADESH
 APPROVED
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 Performance as stipulated in the contract

Md. Shoeb Hasan
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25 AUG 2015

SUMMARY OF FOUNDATION LOADS**PROJECT : 230 KV FOUR CIRCUIT TRANSMISSION LINE****CLIENT : PGCB****ANGLE TOWER TYPE "2QT6" (30°-60°)****2QT6 WITH +9M BODY EXTENSION****HIGH INTENSITY WIND CONDITION :**

PARALLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	1567.54	-811.61	72.67	74.07	395
Kg	159,845	(82,761)	7,410	7,553	
KN	1567.54	-811.61	72.67	74.07	395
Kg	159,845	(82,761)	7,410	7,553	
KN	1277.97	-547.73	120.22	9.06	393
Kg	130,317	(55,853)	12,259	923	
KN	1456.67	-699.70	1.44	115.40	396
Kg	148,539	(71,350)	147	11,768	

Notes :-

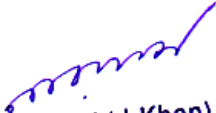
- 1) The above loads are calculated considering stub is along the tower leg
- 2) Stub Section SL 250x250x35(H) (S-Stands for Star Leg)
- 3) Stub, Slope = 7.287°
- 4) Above Foundation Loads are inclusive of Tower FOS
- 5) Trans Shear & Long Shear values are inclusive of respective shear values at Concrete level.

POWER GRID COMPANY OF BANGLADESH
APPROVED

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Design & Quality Control
PGCB Ltd

25 AUG 2015



SUMMARY OF FOUNDATION LOADS

PROJECT : 230 KV FOUR CIRCUIT TRANSMISSION LINE

CLIENT : PGCB

TERMINAL TOWER TYPE "2QT6" (0°-30°)

2QT6 WITH +9M BODY EXTENSION

NORMAL CONDITION :

PARALLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	10063.26	-9107.42	120.19	98.62	387
Kg	1,026,235	(928,760)	12,257	10,057	
KN	9967.52	-9187.59	120.60	99.20	388
Kg	1,016,472	(936,936)	12,299	10,116	
KN	2875.77	-2110.85	221.89	167.76	323
Kg	293,267	(215,261)	22,628	17,108	
KN	2805.69	-2087.26	151.02	226.55	336
Kg	286,119	(212,855)	15,401	23,103	

BROKEN WIRE CONDITION :

PARALLAL TO LEG					LOAD CASE NO
Unit	COMPRESSION	UPLIFT	TRANS SHEAR	LONG SHEAR	
KN	7571.57	-6817.76	151.28	101.23	283
Kg	772,136	(695,264)	15,428	10,324	
KN	7505.91	-6865.00	150.25	103.42	284
Kg	765,440	(700,082)	15,323	10,546	
KN	6742.53	-6002.31	184.15	-145.33	285
Kg	687,592	(612,106)	18,779	(14,821)	
KN	6684.17	-6048.85	182.90	147.32	286
Kg	681,640	(616,862)	18,652	15,023	

POWER GRID COMPANY OF BANGLADESH
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SUMMARY OF FOUNDATION LOADS**PROJECT : 230 KV FOUR CIRCUIT TRANSMISSION LINE****CLIENT : PGCBL****TERMINAL TOWER TYPE "2QT6" (0°-30°)****2QT6 WITH +9M BODY EXTENSION****HIGH INTENSITY WIND CONDITION :**

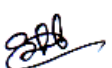
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Kg	159,845	(82,761)	7,410	7,553	
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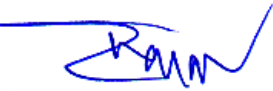
Notes :-

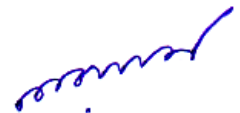
- 1) The above loads are calculated considering stub is along the tower leg
- 2) Stub Section SL 250x250x35(H) (S-Stands for Star Leg)
- 3) Stub Slope = 7.287°
- 4) Above Foundation Loads are inclusive of Tower FOS
- 5) Trans Shear & Long Shear values are inclusive of respective shear values at Concrete level.

**POWER GRID COMPANY OF BANGLADESH
APPROVED**

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Md. Shueb Hossain
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