CITY OF PORTLAND, MAINE RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 11/27/17

Equivalent Modal Analysis Method

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.25
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.08
Importance Factor (I_e):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v:	2.40
Response Modification Coefficient (R):	2.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.26
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.13
Period Based on Rayleigh Method (sec):	0.87
Redundancy Factor (p):	1.30

LoadCase (1.2 + 0.2Sds) * DL + E Seismic

Section	Height Above Base (ft)	Weight (lb)	a	b	c	S_{az}	Horizontal Force (lb)	Vertical Force (lb)
27	272.50	246	1.856	1.804	1.076	0.529	68	308
26	269.42	107	1.814	1.603	1.002	0.495	28	134
25	268.25	83	1.798	1.531	0.974	0.482	21	104
24	267.08	107	1.783	1.461	0.948	0.470	26	134
23	265.75	95	1.765	1.384	0.918	0.456	22	119
22	255.00	1,323	1.625	0.858	0.705	0.354	243	1,656
21	235.00	1,384	1.380	0.247	0.412	0.208	150	1,733
20	222.50	409	1.237	0.043	0.283	0.145	31	512
19	219.25	124	1.201	0.006	0.256	0.132	9	156
18	217.33	179	1.180	-0.013	0.240	0.125	12	225
17	215.58	130	1.162	-0.029	0.227	0.119	8	163
16	214.42	129	1.149	-0.038	0.219	0.115	8	162
15	213.25	130	1.137	-0.047	0.210	0.111	8	163
14	212.08	113	1.124	-0.055	0.202	0.108	6	142
13	206.50	810	1.066	-0.087	0.166	0.093	39	1,015
12	200.75	141	1.007	-0.108	0.135	0.081	6	176
11	190.00	1,831	0.902	-0.122	0.088	0.066	63	2,293
10	170.00	2,118	0.722	-0.093	0.034	0.059	64	2,652
9	150.00	2,113	0.562	-0.039	0.011	0.063	69	2,646
8	130.00	2,134	0.422	0.011	0.006	0.066	73	2,672
7	110.00	2,162	0.302	0.045	0.012	0.064	72	2,708
6	90.00	2,149	0.202	0.062	0.023	0.057	63	2,691
5	70.00	2,149	0.122	0.070	0.034	0.048	54	2,692
4	50.00	2,165	0.062	0.072	0.041	0.040	45	2,711
3	30.00	2,150	0.022	0.065	0.039	0.032	36	2,693
2	12.50	1,376	0.004	0.041	0.023	0.019	14	1,724
1	2.50	308	0.000	0.010	0.006	0.005	1	385
Alcatel-Lucent B13 RRH4x30-4R	272.00	173	1.849	1.771	1.064	0.523	47	217
Alcatel-Lucent B25 RRH4x30-4R	272.00	153	1.849	1.771	1.064	0.523	42	192
Raycap RxxDC-3315-PF-48	272.00	43	1.849	1.771	1.064	0.523	12	54
Alcatel-Lucent B66a RRH4x45	272.00	201	1.849	1.771	1.064	0.523	55	252
Commscope SBNHH-1D65C	272.00	595	1.849	1.771	1.064	0.523	162	745
Flat Light Sector Frame	272.00	1,200	1.849	1.771	1.064	0.523	326	1,503
Torque Arms	270.00	500	1.822	1.640	1.015	0.501	130	626
Andrew ETW200VS12UB	260.00	33	1.689	1.083	0.798	0.399	7	41
RFS ATMA4P4DBP-VA20	260.00	48	1.689	1.083	0.798	0.399	10	60
Ericsson Radio 4478 B71	260.00	180	1.689	1.083	0.798	0.399	37	225
Radio Waves G3-2.4	260.00	25	1.689	1.083	0.798	0.399	5	31
RFS APX16DWV-16DWV-S-E-ACU	260.00	119	1.689	1.083	0.798	0.399	25	149