

Template for Billboard 16' x 36'

5 Fixtures spaced 8 1/2' apart and 5 feet from sign face
Centered
Fixture Type = 3Q LED Floodlight

DISCLAIMER

Calculations have been performed according to IESNA & CIE standards and good practice. Some differences between measured values and calculated results may occur due to tolerances in calculation methods, testing procedures, component performance, measurement techniques and field conditions such as voltage and temperature variations. Input data used to generate the attached calculations such as room dimensions, reflectances, furniture and architectural elements significantly affect the lighting calculations. If the real environment conditions do not match the input data, differences will occur between measured values and calculated values.



Room / Site Summary

Site

Calculation Summary

	Attained	Target
Zonal Cavity Illum*:	N/A fc	N/A fc
Unit Power Density:	1.236 W/sq. ft.	N/A W/sq. ft.

*Zonal cavity illuminance does not take into account objects within the space, or daylighting.

Area Summary

Overall Size: 36.00 ft x 5.00 ft x N/A ft
 Reflectances: Ceiling N/A
 Walls: N/A
 Floor: N/A

Total Cost: \$0.00

Luminaire Type Summary

<u>Type</u>	<u>Catalog Number</u>	<u>Quantity</u>
3QFL		5

Luminaire Location Summary

<u>Type</u>	<u>X</u>	<u>Y</u>	<u>Z</u>	<u>Orient</u>	<u>Tilt</u>	<u>Spin</u>	<u>AimX</u>	<u>AimY</u>	<u>AimZ</u>	<u>LLF</u>	<u>Tilt Factor</u>
3QFL	2.00	0.00	0.00	0.00	140.0	0.00	n/a	n/a	n/a		
3QFL	10.00	0.00	0.00	0.00	140.0	0.00	n/a	n/a	n/a		
3QFL	18.00	0.00	0.00	0.00	140.0	0.00	n/a	n/a	n/a		
3QFL	26.00	0.00	0.00	0.00	140.0	0.00	n/a	n/a	n/a		
3QFL	34.00	0.00	0.00	0.00	140.0	0.00	n/a	n/a	n/a		



Calculation Grid: Billboard Face (Site)

Surface Illuminance

Calculation Grid Summary

Grid Name: Billboard Face	Grid Origin: (0.00, 5.00)	Grid Surface: Wall
Grid Type: Surface Illuminance	Grid Orient:	Grid Hinge: 90
Grid Units: Footcandles	Grid Elev.: 0.00	Grid Azimuth:

Statistical Area Summary

<u>Stat. Area</u>	<u>Ave</u>	<u>Max</u>	<u>Min</u>	<u>Ave/Min</u>	<u>Max/Min</u>	<u>Std. Dev.</u>
Billboard Face	13.1	31.8	2.1	6.2	15.1	8.7

Calculation Grid

	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00
16.00	2.1	2.3	2.4	2.5	2.6	2.8	2.9	3.0	3.1	3.2	3.2	3.3	3.3	3.4
15.00	2.4	2.6	2.8	2.9	3.1	3.2	3.4	3.5	3.6	3.7	3.8	3.8	3.8	3.9
14.00	2.8	3.1	3.3	3.5	3.6	3.7	3.9	4.1	4.2	4.3	4.4	4.4	4.5	4.5
13.00	3.3	3.6	3.9	4.1	4.3	4.5	4.6	4.8	5.0	5.1	5.2	5.3	5.3	5.2
12.00	3.9	4.3	4.7	4.9	5.2	5.4	5.5	5.7	5.9	6.1	6.2	6.3	6.2	6.2
11.00	4.7	5.2	5.7	6.0	6.3	6.5	6.7	6.8	7.0	7.2	7.5	7.4	7.4	7.4
10.00	5.7	6.3	7.0	7.3	7.7	7.9	8.2	8.3	8.5	8.7	9.0	8.9	8.8	8.9
9.00	7.0	7.8	8.6	9.1	9.5	9.8	10.0	10.3	10.5	10.7	10.8	10.7	10.7	10.7
8.00	8.9	9.8	10.8	11.4	11.9	12.1	12.3	12.7	13.0	13.1	13.1	13.1	13.1	13.0
7.00	11.2	12.6	13.7	14.2	15.0	15.1	15.1	15.6	16.2	16.0	16.1	16.0	16.2	15.7
6.00	13.9	16.0	17.7	17.9	18.4	18.6	18.6	18.9	19.2	19.5	20.2	19.6	19.3	19.0
5.00	17.3	20.0	22.4	22.5	22.2	22.3	22.3	22.4	22.6	23.6	24.7	23.6	22.7	22.5
4.00	21.1	24.5	27.3	27.2	26.1	24.9	25.6	25.0	26.3	27.7	28.8	27.7	26.3	25.0
3.00	23.9	28.7	31.2	30.3	28.3	26.1	24.6	26.1	28.4	30.5	31.7	30.5	28.4	26.1
2.00	23.8	29.3	31.6	29.7	25.7	23.2	20.7	23.2	25.7	29.8	31.8	29.8	25.7	23.2
1.00	18.3	23.5	25.2	23.6	18.8	14.1	12.9	14.1	18.8	23.6	25.3	23.6	18.8	14.1



Surface Illuminance

Calculation Grid

	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00
16.00	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.2	3.2
15.00	3.9	3.9	4.0	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.7
14.00	4.5	4.6	4.6	4.7	4.7	4.7	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.3
13.00	5.2	5.3	5.4	5.4	5.5	5.4	5.4	5.3	5.2	5.2	5.3	5.3	5.2	5.1
12.00	6.2	6.2	6.3	6.4	6.4	6.4	6.3	6.2	6.2	6.2	6.2	6.3	6.2	6.1
11.00	7.4	7.4	7.4	7.5	7.6	7.5	7.4	7.4	7.4	7.4	7.4	7.4	7.5	7.2
10.00	8.9	8.9	8.9	8.9	9.1	8.9	8.9	8.9	8.9	8.9	8.8	8.9	9.0	8.7
9.00	10.7	10.7	10.7	10.8	10.9	10.8	10.7	10.7	10.7	10.7	10.7	10.7	10.8	10.7
8.00	12.8	13.0	13.2	13.2	13.1	13.2	13.2	13.0	12.8	13.0	13.1	13.1	13.1	13.1
7.00	15.4	15.7	16.2	16.0	16.2	16.0	16.2	15.7	15.4	15.7	16.2	16.0	16.1	16.0
6.00	18.8	19.0	19.3	19.6	20.2	19.6	19.3	19.0	18.8	19.0	19.3	19.6	20.2	19.5
5.00	22.4	22.5	22.7	23.6	24.7	23.6	22.7	22.5	22.4	22.5	22.7	23.6	24.7	23.6
4.00	25.7	25.0	26.3	27.7	28.8	27.7	26.3	25.0	25.7	25.0	26.3	27.7	28.8	27.7
3.00	24.7	26.1	28.4	30.5	31.8	30.5	28.4	26.1	24.7	26.1	28.4	30.5	31.7	30.5
2.00	20.7	23.2	25.7	29.8	31.8	29.8	25.7	23.2	20.7	23.2	25.7	29.8	31.8	29.8
1.00	13.0	14.1	18.8	23.6	25.3	23.6	18.8	14.1	13.0	14.1	18.8	23.6	25.3	23.6



Surface Illuminance

Calculation Grid

	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00
16.00	3.1	3.0	2.9	2.8	2.6	2.5	2.4	2.3	2.1
15.00	3.6	3.5	3.4	3.2	3.1	2.9	2.8	2.6	2.4
14.00	4.2	4.1	3.9	3.7	3.6	3.5	3.3	3.1	2.8
13.00	5.0	4.8	4.6	4.5	4.3	4.1	3.9	3.6	3.3
12.00	5.9	5.7	5.5	5.4	5.2	4.9	4.7	4.3	3.9
11.00	7.0	6.8	6.7	6.5	6.3	6.0	5.7	5.2	4.7
10.00	8.5	8.3	8.2	7.9	7.7	7.3	7.0	6.3	5.7
9.00	10.5	10.3	10.0	9.8	9.5	9.1	8.6	7.8	7.0
8.00	13.0	12.7	12.3	12.1	11.9	11.4	10.8	9.8	8.9
7.00	16.2	15.6	15.1	15.1	15.0	14.2	13.7	12.6	11.2
6.00	19.2	18.9	18.6	18.6	18.4	17.9	17.7	16.0	13.9
5.00	22.6	22.4	22.3	22.3	22.2	22.5	22.4	20.0	17.3
4.00	26.3	25.0	25.6	24.9	26.1	27.2	27.3	24.5	21.1
3.00	28.4	26.1	24.6	26.1	28.3	30.3	31.2	28.7	23.9
2.00	25.7	23.2	20.7	23.2	25.7	29.7	31.6	29.3	23.8
1.00	18.8	14.1	12.9	14.1	18.8	23.6	25.2	23.5	18.3



Calculation Grid: Billboard Face (Site) (Page 4)

Surface Illuminance

Calculation Grid

	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00
0.00	9.7	12.7	13.6	12.7	9.8	4.9	2.1	4.9	9.8	12.7	13.7	12.7	9.8	4.9



Calculation Grid: Billboard Face (Site) (Page 5)

Surface Illuminance

Calculation Grid

	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00
0.00	2.1	4.9	9.8	12.7	13.7	12.7	9.8	4.9	2.1	4.9	9.8	12.7	13.7	12.7



Calculation Grid: Billboard Face (Site) (Page 6)

Surface Illuminance

Calculation Grid

	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00
0.00	9.8	4.9	2.1	4.9	9.8	12.7	13.6	12.7	9.7



Calculation Grid: Billboard Face (Site)

Surface Exitance

Calculation Grid Summary

Grid Name: Billboard Face	Grid Origin: (0.00, 5.00)	Grid Surface: Wall
Grid Type: Surface Exitance	Grid Orient:	Grid Hinge: 90
Grid Units: Lumens / sq. Foot	Grid Elev.: 0.00	Grid Azimuth: 0

Statistical Area Summary

<u>Stat. Area</u>	<u>Ave</u>	<u>Max</u>	<u>Min</u>	<u>Ave/Min</u>	<u>Max/Min</u>	<u>Std. Dev.</u>
Billboard Face	6.56	15.89	1.05	6.25	15.13	4.36

Calculation Grid

	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00
16.00	1.05	1.13	1.20	1.25	1.31	1.38	1.45	1.51	1.54	1.58	1.61	1.63	1.65	1.68
15.00	1.22	1.31	1.40	1.46	1.52	1.60	1.67	1.75	1.80	1.84	1.88	1.89	1.91	1.94
14.00	1.42	1.54	1.65	1.73	1.79	1.87	1.95	2.03	2.11	2.16	2.20	2.22	2.24	2.24
13.00	1.66	1.82	1.96	2.06	2.14	2.22	2.30	2.39	2.48	2.55	2.61	2.63	2.63	2.62
12.00	1.95	2.16	2.35	2.47	2.57	2.67	2.76	2.83	2.93	3.03	3.10	3.12	3.11	3.08
11.00	2.33	2.59	2.84	2.98	3.13	3.24	3.34	3.41	3.50	3.62	3.73	3.71	3.69	3.68
10.00	2.83	3.14	3.49	3.65	3.82	3.96	4.08	4.17	4.25	4.35	4.51	4.42	4.41	4.43
9.00	3.52	3.87	4.30	4.55	4.72	4.87	4.99	5.14	5.24	5.32	5.42	5.36	5.34	5.35
8.00	4.42	4.90	5.37	5.70	5.92	6.04	6.12	6.36	6.50	6.53	6.52	6.56	6.56	6.49
7.00	5.57	6.28	6.85	7.11	7.50	7.52	7.56	7.78	8.06	7.98	8.06	8.00	8.10	7.85
6.00	6.94	7.99	8.81	8.94	9.19	9.29	9.30	9.43	9.59	9.76	10.07	9.77	9.62	9.48
5.00	8.63	9.99	11.18	11.23	11.09	11.14	11.12	11.21	11.30	11.80	12.33	11.80	11.31	11.24
4.00	10.53	12.22	13.62	13.58	13.04	12.43	12.79	12.47	13.14	13.85	14.37	13.85	13.15	12.48
3.00	11.91	14.31	15.56	15.13	14.11	13.02	12.30	13.04	14.16	15.24	15.85	15.24	14.16	13.04
2.00	11.88	14.61	15.79	14.84	12.82	11.57	10.34	11.58	12.84	14.89	15.89	14.89	12.84	11.58
1.00	9.12	11.72	12.59	11.79	9.38	7.04	6.46	7.04	9.39	11.80	12.63	11.80	9.39	7.04



Surface Exitance

Calculation Grid

	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00
16.00	1.70	1.72	1.72	1.72	1.73	1.72	1.72	1.72	1.70	1.68	1.65	1.63	1.61	1.58
15.00	1.95	1.97	1.98	1.99	2.00	1.99	1.98	1.97	1.95	1.94	1.91	1.89	1.88	1.84
14.00	2.25	2.27	2.30	2.32	2.34	2.32	2.30	2.27	2.25	2.24	2.24	2.22	2.20	2.16
13.00	2.62	2.64	2.69	2.72	2.74	2.72	2.69	2.64	2.62	2.62	2.63	2.63	2.61	2.55
12.00	3.09	3.10	3.14	3.19	3.21	3.19	3.14	3.10	3.09	3.08	3.11	3.12	3.10	3.03
11.00	3.69	3.69	3.71	3.76	3.81	3.76	3.71	3.69	3.69	3.68	3.69	3.71	3.73	3.62
10.00	4.44	4.43	4.42	4.45	4.56	4.45	4.42	4.43	4.44	4.43	4.41	4.42	4.51	4.35
9.00	5.34	5.35	5.35	5.38	5.45	5.38	5.35	5.35	5.34	5.35	5.34	5.36	5.42	5.32
8.00	6.38	6.50	6.57	6.57	6.54	6.57	6.57	6.50	6.38	6.49	6.56	6.56	6.52	6.53
7.00	7.71	7.85	8.11	8.01	8.08	8.01	8.11	7.85	7.71	7.85	8.10	8.00	8.06	7.98
6.00	9.39	9.48	9.62	9.77	10.08	9.77	9.62	9.48	9.39	9.48	9.62	9.77	10.07	9.76
5.00	11.17	11.24	11.32	11.80	12.34	11.80	11.32	11.24	11.17	11.24	11.31	11.80	12.33	11.80
4.00	12.82	12.48	13.15	13.85	14.38	13.85	13.15	12.48	12.82	12.48	13.15	13.85	14.37	13.85
3.00	12.32	13.04	14.16	15.24	15.85	15.24	14.16	13.04	12.32	13.04	14.16	15.24	15.85	15.24
2.00	10.35	11.58	12.84	14.89	15.89	14.89	12.84	11.58	10.35	11.58	12.84	14.89	15.89	14.89
1.00	6.47	7.04	9.39	11.80	12.63	11.80	9.39	7.04	6.47	7.04	9.39	11.80	12.63	11.80



Surface Exitance

Calculation Grid

	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00
16.00	1.54	1.51	1.45	1.38	1.31	1.25	1.20	1.13	1.05
15.00	1.80	1.75	1.67	1.60	1.52	1.46	1.40	1.31	1.22
14.00	2.11	2.03	1.95	1.87	1.79	1.73	1.65	1.54	1.42
13.00	2.48	2.39	2.30	2.22	2.14	2.06	1.96	1.82	1.66
12.00	2.93	2.83	2.76	2.67	2.57	2.47	2.35	2.16	1.95
11.00	3.50	3.41	3.34	3.24	3.13	2.98	2.84	2.59	2.33
10.00	4.25	4.17	4.08	3.96	3.82	3.65	3.49	3.14	2.83
9.00	5.24	5.14	4.99	4.87	4.72	4.55	4.30	3.87	3.52
8.00	6.50	6.36	6.12	6.04	5.92	5.70	5.37	4.90	4.42
7.00	8.06	7.78	7.56	7.52	7.50	7.11	6.85	6.28	5.57
6.00	9.59	9.43	9.30	9.29	9.19	8.94	8.81	7.99	6.94
5.00	11.30	11.21	11.12	11.14	11.09	11.23	11.18	9.99	8.63
4.00	13.14	12.47	12.79	12.43	13.04	13.58	13.62	12.22	10.53
3.00	14.16	13.04	12.30	13.02	14.11	15.13	15.56	14.31	11.91
2.00	12.84	11.58	10.34	11.57	12.82	14.84	15.79	14.61	11.88
1.00	9.39	7.04	6.46	7.04	9.38	11.79	12.59	11.72	9.12



Calculation Grid: Billboard Face (Site) (Page 4)

Surface Exitance

Calculation Grid

	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00
0.00	4.86	6.35	6.81	6.36	4.90	2.45	1.07	2.45	4.90	6.36	6.82	6.36	4.91	2.45



Calculation Grid: Billboard Face (Site) (Page 5)

Surface Exitance

Calculation Grid

	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00
0.00	1.07	2.45	4.91	6.36	6.82	6.36	4.91	2.45	1.07	2.45	4.91	6.36	6.82	6.36

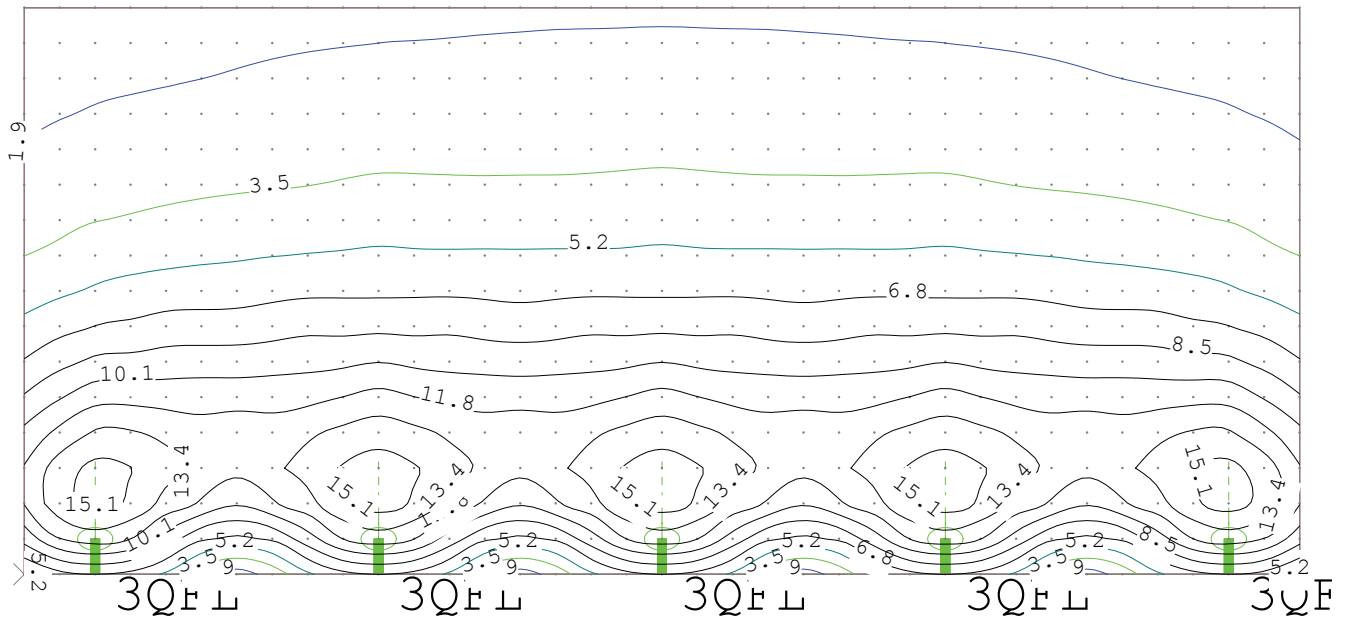


Calculation Grid: Billboard Face (Site) (Page 6)

Surface Exitance

Calculation Grid

	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00
0.00	4.90	2.45	1.07	2.45	4.90	6.36	6.81	6.35	4.86



Site North View

Scale: Scale to Fit

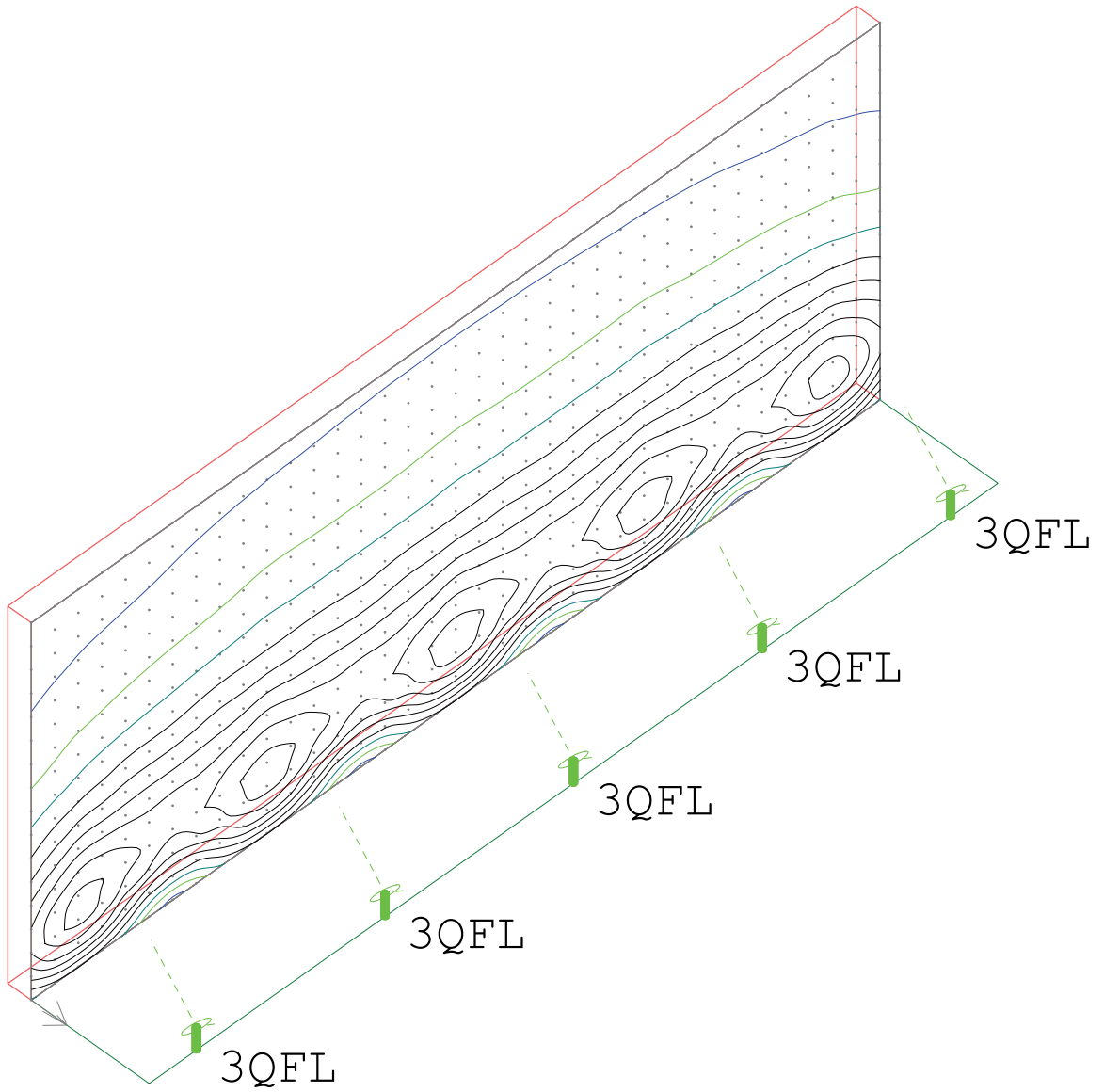
Template for Billboard 16' x 36'

SOL INC

Palm City, FL

2/9/2009

Prepared for:



Site Isometric View

Scale: Scale to Fit

Template for Billboard 16' x 36'

SOL INC

Palm City, FL

2/9/2009

Prepared for: