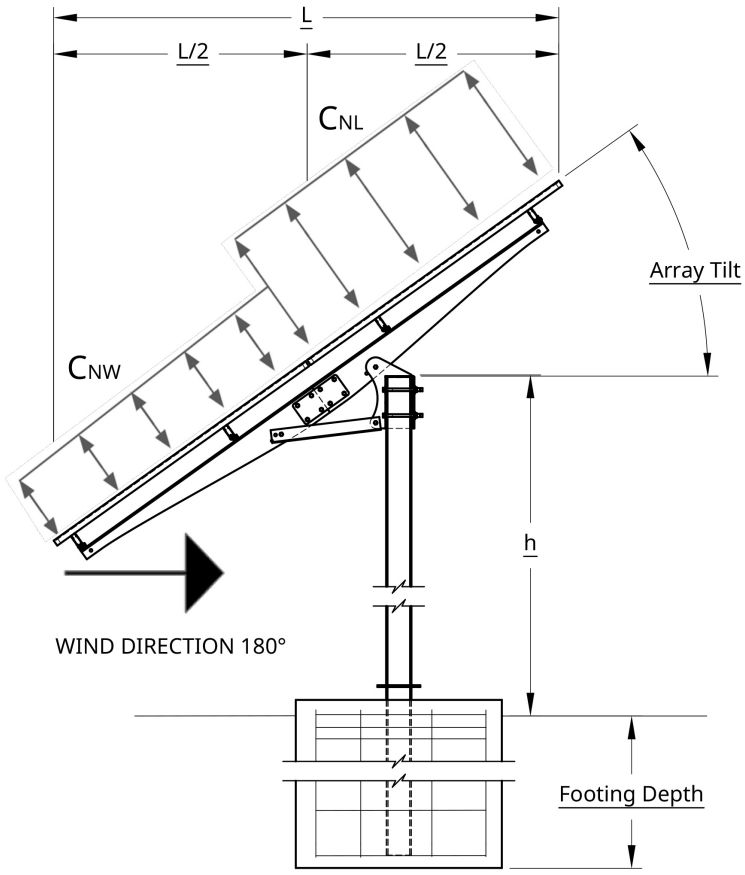
GROUND MOUNT ENGINEERING SPAN TABLES

MT SOLAR
MADE IN MONTANA, USA



MT SOLAR GROUND MOUNT ENGINEERING

90 MPH WIND LOAD

POST SPACING in feet

based on 6inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
90	0	10.5	9.440	8.674	8.209	8	8.178	8.612	9.25	9.25
	10	9.198	8.541	8.108	7.9	7.909	8.159	8.626	9.3	9.25
	20	8.036	7.712	7.556	7.570	7.738	8.108	8.632	9.29	9.25
	30	7	6.924	6.980	7.166	7.5	7.928	8.504	9.25	9.25
	40	6.132	6.217	6.414	6.721	7.156	7.665	8.302	9.09	9.25
	50	5.39	5.573	5.863	6.263	6.745	7.393	8.123	8.9	9.25
	60	4.788	4.976	5.286	5.721	6.254	6.966	7.776	8.65	9.25
	70	4.25	4.186	4.540	5.253	5.75	7.460	8.804	8.5	9.25

ANGLE_NODE_SNOW		X (LBS)	LC	Y (LBS)	LC	M (FT*LBS)	LC
10_BASE_0PSF	max	234	4	2273	4	4252	6
10_BASE_0PSF	min	-164	11	-351	11	-491	11
10_BASE_30PSF	max	156	12	2539	8	4126	10
10_BASE_30PSF	min	-109	3	-234	11	-328	11
10_BASE_70PSF	max	95	4	2731	2	3935	10
10_BASE_70PSF	min	-66	11	-142	11	-199	11
30_BASE_0PSF	max	835	4	2173	4	5833	5
30_BASE_0PSF	min	-716	11	-802	11	-2457	12
30_BASE_30PSF	max	783	4	2477	8	5554	9
30_BASE_30PSF	min	-671	11	-752	11	-2302	12
30_BASE_70PSF	max	600	4	2695	8	5476	9
30_BASE_70PSF	min	-514	11	-576	11	-1762	12
45_BASE_0PSF	max	1529	12	2368	4	9587	5
45_BASE_0PSF	min	-1106	3	-599	11	-9710	12
45_BASE_30PSF	max	1529	12	2477	8	9587	5
45_BASE_30PSF	min	-1106	3	-599	11	-9710	12
45_BASE_70PSF	max	1405	12	2880	8	8814	5
45_BASE_70PSF	min	-1016	3	-550	11	-8903	12
50_BASE_0PSF	max	1727	12	2289	4	10591	5
50_BASE_0PSF	min	-1198	3	-498	11	-12239	12
50_BASE_30PSF	max	1727	4	2289	4	10590	5
50_BASE_30PSF	min	-1198	11	-498	11	-12238	12
50_BASE_70PSF	max	1727	4	2762	8	10590	5
50_BASE_70PSF	min	-1198	11	-498	11	-12238	12

LOAD CASE	DESCRIPTION
1	DL
2	DL + SL
3	DL + 0.6WLCA.0
4	DL + 0.6WLCA.180
5	DL + 0.6WLCB.0
6	DL + 0.6WLCB.180
7	DL + 0.45WLCA.0 + 0.75SL
8	DL + 0.45WLCA.180 + 0.75SL
9	DL + 0.45WLCB.0 + 0.75SL
10	DL + 0.45WLCB.180 + 0.75SL
11	0.6DL + 0.6WLCA.0
12	0.6DL + 0.6WLCA.180
13	0.6DL + 0.6WLCB.0
14	0.6DL + 0.6WLCB.180

Exposure = C

kz = 0.85	Velocity Exposure Coefficient (ASCE 7-10 Table 27.3-1)
kzt = 1	Topographic Factor (ASCE 7-10 Figure 26.8-1)
kd = 0.85	Wind Directionality Factor (ASCE 7-10 Table 26.6-1)
G = 0.85	Gust Effect Factor (ASCE 7-10 Section 26.9.1)
qh (ULT) = 15.0	psf - Velocity Pressure (ASCE 7-10 Section 27.3.2 EQ 27.3-1)
qh (ASD) = 9.0	psf - Velocity Pressure (ULT) * 0.6

90 MPH WIND PRESSURES - ASCE 7-10 (UNFACTORED)

Tilt Angle - 10

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-8.91	-14.01	13.16	19.53
LC B	CNW	CNL	CNW	CNL
	-19.95	0.00	21.22	5.09

Tilt Angle - 30

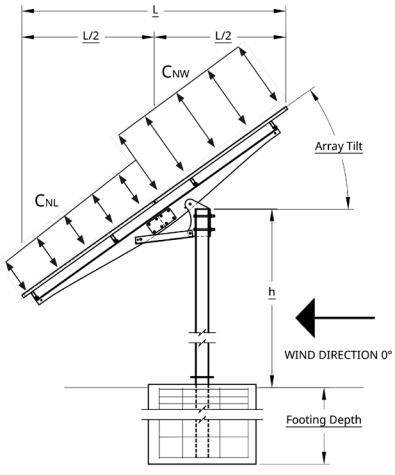
PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-22.92	-22.92	26.74	26.74
LC B	CNW	CNL	CNW	CNL
	-31.84	-6.37	33.11	12.73

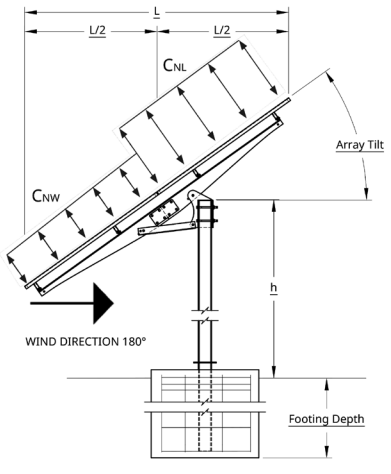
Tilt Angle - 45

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-20.38	-22.92	28.02	31.84
LC B	CNW	CNL	CNW	CNL
	-29.29	-8.91	33.11	17.83

Tilt Angle - 50

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-19.74	-23.56	29.29	33.11
LC B	CNW	CNL	CNW	CNL
	-28.85	-9.55	32.47	20.38





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1-844-687-6527

MT SOLAR GROUND MOUNT ENGINEERING

90 MPH WIND LOAD

CONCRETE PIER

FOOTING DEPTH FOR 16" DIAMETER DRILLED PIER in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
90	0	6.35	6.49785	6.6841	6.93035	7.2	7.69285	8.2541	8.72	9.5
	10	6.336	6.403275	6.5574	6.806525	7.115	7.604775	8.1614	8.74	9.5
	20	6.318	6.403275	6.5574	6.806525	7.05	7.604775	8.1614	8.74	9.5
	30	6.29	6.292	6.4085	6.635	7	7.418	7.9745	8.72	9.5
	40	6.27	6.3067	6.4377	6.6727	6.98	7.4787	8.0617	8.68	9.5
	50	6.24	6.34295	6.4852	6.69245	6.975	7.39195	7.9292	8.62	9.5
	60	6.206	6.42715	6.6159	6.82965	6.99	7.54215	8.1459	8.54	9.5
	70	6.14	6.4564	6.6259	6.7154	7	6.9544	7.2539	8.44	9.5

CONCRETE DESIGN	
f'c min =	4000 psi
Rebar Grade =	60
Vert Bar Size =	#4
# Vert Bars =	6
Tie Size =	#3
Tie Spacing =	(3) @ 2" O.C. TOP, 10" O.C. Remaining
Concrete Cover =	3 inches

SOIL PARAMETERS	
Allowable Vertical Bearing Pressure =	1500 psf
Allowable Lateral Bearing Pressure =	150 psf/ft

DRIVEN POST

FOOTING DEPTH FOR 6" X 9" DRIVEN POST in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
90	0	8.9	8.9511	9.1386	9.4661	9.9	10.5411	11.2886	12.1	12.8
	10	8.864	8.9091	9.0946	9.4261	9.864	10.526	11.295	12.122	12.8
	20	8.83	8.8731	9.0566	9.3901	9.83	10.505	11.285	12.124	12.8
	30	8.8	8.8392	9.0237	9.3582	9.8	10.4772	11.2617	12.1	12.8
	40	8.768	8.8191	8.9986	9.3301	9.768	10.445	11.217	12.068	12.8
	50	8.74	8.8011	8.9786	9.3061	9.74	10.406	11.159	12.01	12.8
	60	8.714	8.7891	8.9646	9.2861	9.714	10.361	11.085	11.932	12.8
	70	8.7	8.7629	8.9534	9.2739	9.7	10.3049	11.0154	11.8	12.8

POST DESIGN	SOIL PARAMETERS	
W6x9	Allowable Vertical Bearing Pressure =	1500 psf
	Allowable Lateral Bearing Pressure =	150 psf/ft

MT SOLAR GROUND MOUNT ENGINEERING

100 MPH WIND LOAD

POST SPACING in feet

based on 6inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
100	0	9	8.1825	7.578	7.1885	7	7.0545	7.31	7.75	7.75
	10	8.091	7.5855	7.241	7.0445	7.002	7.0311	7.29	7.75	7.75
	20	7.262	6.9885	6.864	6.8405	6.924	6.8571	7.28	7.75	7.75
	30	6.5	6.4358	6.4513	6.5418	6.75	6.9478	7.2633	7.75	7.75
	40	5.844	5.7945	5.99	6.2525	6.528	6.5091	7.17	7.75	7.75
	50	5.255	5.1975	5.493	5.8685	6.21	6.3351	7.05	7.75	7.75
	60	4.746	4.6005	4.956	5.4245	5.812	6.1611	6.9	7.75	7.75
	70	4.25	4.243	4.404	4.73	5.25	5.877	6.698	7.75	7.75

ANGLE_NODE_SNOW		X (LBS)	LC	Y (LBS)	LC	M (FT*LBS)	LC
10_BASE_0PSF	max	248	12	2214	4	4497	6
10_BASE_0PSF	min	-174	3	-487	11	-941	11
10_BASE_30PSF	max	179	12	2501	8	4277	10
10_BASE_30PSF	min	-126	3	-351	11	-680	11
10_BASE_70PSF	max	117	12	2731	2	4216	10
10_BASE_70PSF	min	-82	3	-230	11	-445	11
30_BASE_0PSF	max	902	4	2198	4	5122	5
30_BASE_0PSF	min	-773	11	-956	11	-1414	12
30_BASE_30PSF	max	870	4	2444	8	4990	9
30_BASE_30PSF	min	-745	11	-922	11	-1364	12
30_BASE_70PSF	max	677	4	2628	8	4974	9
30_BASE_70PSF	min	-580	11	-717	11	-1061	12
45_BASE_0PSF	max	1581	4	2284	4	8197	5
45_BASE_0PSF	min	-1144	11	-719	11	-7668	12
45_BASE_30PSF	max	1581	4	2300	8	8197	5
45_BASE_30PSF	min	-1144	11	-719	11	-7668	12
45_BASE_70PSF	max	1581	4	2851	8	8197	5
45_BASE_70PSF	min	-1144	11	-719	11	-7668	12
50_BASE_0PSF	max	1786	12	2202	4	9115	5
50_BASE_0PSF	min	-1239	3	-615	11	-9931	12
50_BASE_30PSF	max	1786	4	2202	4	9114	5
50_BASE_30PSF	min	-1239	11	-615	11	-9931	12
50_BASE_70PSF	max	1786	4	2527	8	9114	5
50_BASE_70PSF	min	-1239	11	-615	11	-9931	12

LOAD CASE DESCRIPTION

1 - DL
2 - DL + SL
3 - DL + 0.6WLCA.0
4 - DL + 0.6WLCA.180
5 - DL + 0.6WLCB.0
6 - DL + 0.6WLCB.180
7 - DL + 0.45WLCA.0 + 0.75SL
8 - DL + 0.45WLCA.180 + 0.75SL
9 - DL + 0.45WLCB.0 + 0.75SL
10 - DL + 0.45WLCB.180 + 0.75SL
11 - 0.6DL + 0.6WLCA.0
12 - 0.6DL + 0.6WLCA.180
13 - 0.6DL + 0.6WLCB.0
14 - 0.6DL + 0.6WLCB.180

Exposure = C
kz = 0.85 — Velocity Exposure Coefficient (ASCE 7-10 Table 27.3-1)
kzt = 1 — Topographic Factor (ASCE 7-10 Figure 26.8-1)
kd = 0.85 — Wind Directionality Factor (ASCE 7-10 Table 26.6-1)
G = 0.85 — Gust Effect Factor (ASCE 7-10 Section 26.9.1)
qh (ULT) = 15.0 — psf - Velocity Pressure (ASCE 7-10 Section 27.3.2 EQ 27.3-1)
qh (ASD) = 9.0 — psf - Velocity Pressure (ULT) * 0.6

100 MPH WIND PRESSURES - ASCE 7-10 (UNFACTORED)

Tilt Angle - 10

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-11.01	-17.29	16.25	24.11
LC B	CNW	CNL	CNW	CNL
	-24.63	0.00	26.20	6.29

Tilt Angle - 30

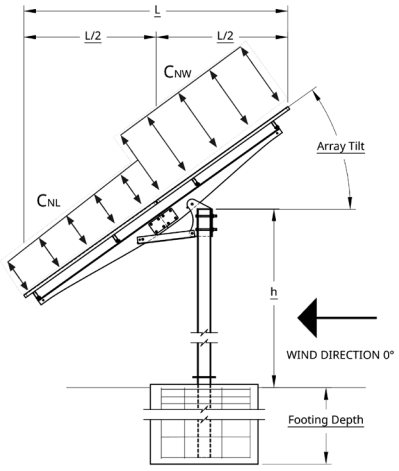
PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-28.30	-28.30	33.02	33.02
LC B	CNW	CNL	CNW	CNL
	-39.30	-7.86	40.88	15.72

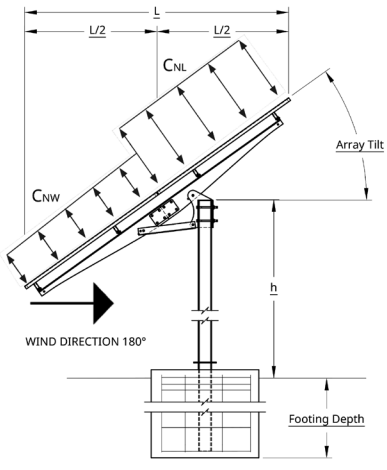
Tilt Angle - 45

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-25.15	-28.30	34.59	39.30
LC B	CNW	CNL	CNW	CNL
	-36.16	-11.01	40.88	22.01

Tilt Angle - 50

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-24.37	-29.08	36.16	40.88
LC B	CNW	CNL	CNW	CNL
	-35.37	-11.79	40.09	25.15





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MT SOLAR MADE IN MONTANA, USA

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MT SOLAR GROUND MOUNT ENGINEERING

100 MPH WIND LOAD

CONCRETE PIER

FOOTING DEPTH FOR 16" DIAMETER DRILLED PIER in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
100	0	6.48	6.4142	6.4487	6.5882	6.79	7.1385	7.5695	8.1	8.75
	10	6.421	6.4142	6.4487	6.5882	6.8	7.1385	7.5695	8.1	8.8
	20	6.374	6.4142	6.4487	6.5882	6.8	7.1385	7.5695	8.1	8.8
	30	6.34	6.2987	6.3547	6.5057	6.77	7.0927	7.5287	8.1	8.75
	40	6.316	6.2987	6.3547	6.5057	6.8	7.0927	7.5287	8.1	8.8
	50	6.305	6.2987	6.3547	6.5057	6.8	7.0927	7.5287	8.1	8.8
	60	6.306	6.2987	6.3547	6.5057	6.8	7.0927	7.5287	8.1	8.8
	70	6.32	6.2987	6.3547	6.5057	6.76	7.0927	7.5287	8.13	8.75

CONCRETE DESIGN	
f'c min =	4000 psi
Rebar Grade =	60
Vert Bar Size =	#4
# Vert Bars =	6
Tie Size =	#3
Tie Spacing =	(3) @ 2" O.C. TOP, 10" O.C. Remaining
Concrete Cover =	3 inches

SOIL PARAMETERS	
Allowable Vertical Bearing Pressure =	1500 psf
Allowable Lateral Bearing Pressure =	150 psf/ft

DRIVEN POST

FOOTING DEPTH FOR 6" X 9" DRIVEN POST in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
100	0	9.1	9.1938	9.4118	9.7298	10.1	10.6658	11.2838	12.3	12.8
	10	9.015	9.1375	9.3788	9.7158	10.097	10.671	11.289	12.3	12.8
	20	8.95	9.0806	9.3318	9.6818	10.054	10.656	11.278	12.3	12.8
	30	8.9	9.022	9.2685	9.615	10	10.608	11.2545	12.3	12.8
	40	8.88	8.965	9.1958	9.5538	9.848	10.566	11.208	12.3	12.8
	50	8.875	8.9063	9.1068	9.4598	9.685	10.491	11.149	12.3	12.8
	60	8.89	8.847	9.0038	9.3458	9.482	10.396	11.074	12.3	12.8
	70	8.9	8.7848	8.8778	9.1458	9.4	10.2068	10.9998	12.3	12.8

POST DESIGN	SOIL PARAMETERS	
W6x9	Allowable Vertical Bearing Pressure =	1500 psf
	Allowable Lateral Bearing Pressure =	150 psf/ft

MT SOLAR GROUND MOUNT ENGINEERING

110 MPH WIND LOAD

POST SPACING in feet

based on 6inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
110	0	8	7.08	6.394	5.938	5.75	5.716	5.95	6.5	6.5
	10	7.282	6.662	6.21	5.925	5.817	5.8605	6.076	6.5	6.5
	20	6.604	6.238	5.986	5.852	5.804	5.9435	6.162	6.5	6.5
	30	6	5.8072	5.7027	5.6882	5.75	5.9292	6.1847	6.5	6.5
	40	5.368	5.372	5.418	5.526	5.538	5.9295	6.214	6.5	6.5
	50	4.81	4.93	5.074	5.273	5.285	5.8325	6.18	6.5	6.5
	60	4.292	4.482	4.69	4.96	4.952	5.6755	6.106	6.5	6.5
	70	4	4.0261	4.1636	4.4161	4.75	5.2661	5.8636	6.5	6.5

ANGLE_NODE_SNOW		X (LBS)	LC	Y (LBS)	LC	M (FT*LBS)	LC
10_BASE_0PSF	max	267	12	2228	4	4622	6
10_BASE_0PSF	min	-187	3	-615	11	-1142	11
10_BASE_30PSF	max	200	12	2455	8	4299	10
10_BASE_30PSF	min	-140	3	-461	11	-857	11
10_BASE_70PSF	max	133	12	2581	8	4202	10
10_BASE_70PSF	min	-93	3	-308	11	-572	11
30_BASE_0PSF	max	896	4	2075	4	4928	5
30_BASE_0PSF	min	-768	11	-1016	11	-1504	12
30_BASE_30PSF	max	896	4	2284	8	4928	5
30_BASE_30PSF	min	-768	11	-1016	11	-1504	12
30_BASE_70PSF	max	741	4	2545	8	4946	9
30_BASE_70PSF	min	-635	11	-839	11	-1243	12
45_BASE_0PSF	max	1604	4	2194	4	8151	5
45_BASE_0PSF	min	-1161	11	-804	11	-7879	12
45_BASE_30PSF	max	1604	4	2194	4	8151	5
45_BASE_30PSF	min	-1161	11	-804	11	-7879	12
45_BASE_70PSF	max	1604	4	2599	8	8151	5
45_BASE_70PSF	min	-1161	11	-804	11	-7879	12
50_BASE_0PSF	max	1813	12	2111	4	9091	5
50_BASE_0PSF	min	-1258	3	-699	11	-10166	12
50_BASE_30PSF	max	1813	4	2111	4	9090	5
50_BASE_30PSF	min	-1258	11	-699	11	-10166	12
50_BASE_70PSF	max	1813	4	2317	8	9090	5
50_BASE_70PSF	min	-1258	11	-699	11	-10166	12

LOAD CASE DESCRIPTION

1 - DL
2 - DL + SL
3 - DL + 0.6WLCA.0
4 - DL + 0.6WLCA.180
5 - DL + 0.6WLCB.0
6 - DL + 0.6WLCB.180
7 - DL + 0.45WLCA.0 + 0.75SL
8 - DL + 0.45WLCA.180 + 0.75SL
9 - DL + 0.45WLCB.0 + 0.75SL
10 - DL + 0.45WLCB.180 + 0.75SL
11 - 0.6DL + 0.6WLCA.0
12 - 0.6DL + 0.6WLCA.180
13 - 0.6DL + 0.6WLCB.0
14 - 0.6DL + 0.6WLCB.180

Exposure = C

kz = 0.85	Velocity Exposure Coefficient (ASCE 7-10 Table 27.3-1)
kzt = 1	Topographic Factor (ASCE 7-10 Figure 26.8-1)
kd = 0.85	Wind Directionality Factor (ASCE 7-10 Table 26.6-1)
G = 0.85	Gust Effect Factor (ASCE 7-10 Section 26.9.1)
qh (ULT) = 15.0	psf - Velocity Pressure (ASCE 7-10 Section 27.3.2 EQ 27.3-1)
qh (ASD) = 9.0	psf - Velocity Pressure (ULT) * 0.6

110 MPH WIND PRESSURES - ASCE 7-10 (UNFACTORED)

Tilt Angle - 10

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-13.32	-20.93	19.66	29.17
LC B	CNW	CNL	CNW	CNL
	-29.80	0.00	31.71	7.61

Tilt Angle - 30

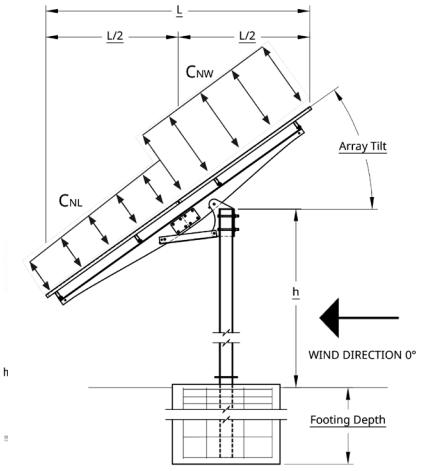
PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-34.24	-34.24	39.95	39.95
LC B	CNW	CNL	CNW	CNL
	-47.56	-9.51	49.46	19.02

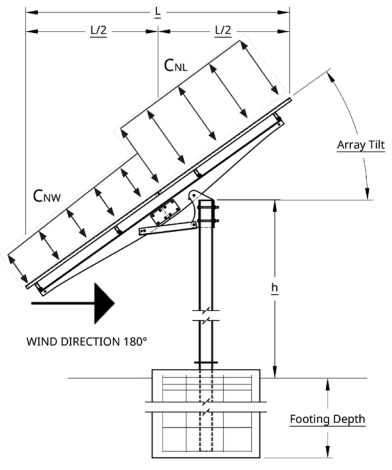
Tilt Angle - 45

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-30.44	-34.24	41.85	47.56
LC B	CNW	CNL	CNW	CNL
	-43.75	-13.32	49.46	26.63

Tilt Angle - 50

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-29.49	-35.19	43.75	49.46
LC B	CNW	CNL	CNW	CNL
	-42.80	-14.27	48.51	30.44





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MT SOLAR GROUND MOUNT ENGINEERING

110 MPH WIND LOAD

CONCRETE PIER

FOOTING DEPTH FOR 16" DIAMETER DRILLED PIER in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
110	0	6.52	6.2791	6.2276	6.3661	6.69	7.2131	7.9216	8.81	8.85
	10	6.446	6.2271	6.1916	6.3411	6.6887	7.1931	7.8936	8.81	8.85
	20	6.386	6.1871	6.1636	6.3221	6.6888	7.1811	7.8736	8.81	8.85
	30	6.34	6.1539	6.1464	6.3139	6.69	7.1739	7.8664	8.81	8.85
	40	6.308	6.1431	6.1316	6.3021	6.6932	7.1811	7.8936	8.81	8.85
	50	6.29	6.1391	6.1276	6.3011	6.6975	7.1931	7.8736	8.81	8.85
	60	6.286	6.1471	6.1316	6.3061	6.7032	7.2131	7.8616	8.81	8.85
	70	6.3	6.1428	6.1573	6.3418	6.71	7.2208	7.9153	8.81	8.85

CONCRETE DESIGN	
f'c min =	4000 psi
Rebar Grade =	60
Vert Bar Size =	#4
# Vert Bars =	6
Tie Size =	#3
Tie Spacing =	(3) @ 2" O.C. TOP, 10" O.C. Remaining
Concrete Cover =	3 inches

SOIL PARAMETERS	
Allowable Vertical Bearing Pressure =	1500 psf
Allowable Lateral Bearing Pressure =	150 psf/ft

DRIVEN POST

FOOTING DEPTH FOR 6" X 9" DRIVEN POST in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
110	0	9.2	9.2567	9.4452	9.7487	10.1	10.7007	11.3492	12.3	12.9
	10	9.067	9.1857	9.4182	9.7547	10.144	10.725	11.358	12.3	12.9
	20	8.954	9.1167	9.3752	9.7407	10.148	10.729	11.351	12.3	12.9
	30	8.9	9.0519	9.3169	9.6769	10.1	10.6819	11.3269	12.3	12.9
	40	8.788	8.9847	9.2412	9.6527	10.036	10.677	11.289	12.3	12.9
	50	8.735	8.9217	9.1502	9.5787	9.92	10.621	11.234	12.3	12.9
	60	8.702	8.8607	9.0432	9.4847	9.764	10.545	11.163	12.3	12.9
	70	8.9	8.8147	8.9262	9.2077	9.5	10.2807	11.0722	12.3	12.9

POST DESIGN	SOIL PARAMETERS	
W6x9	Allowable Vertical Bearing Pressure =	1500 psf
	Allowable Lateral Bearing Pressure =	150 psf/ft

MT SOLAR GROUND MOUNT ENGINEERING

120 MPH WIND LOAD

POST SPACING in feet

based on 6inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
120	0	7	6.4237	5.9797	5.6657	5.5	5.4277	5.5037	5.75	5.75
	10	6.482	6.1387	5.8747	5.6927	5.594	5.5727	5.6237	5.75	5.75
	20	5.982	5.8137	5.6897	5.6197	5.608	5.6377	5.6837	5.75	5.75
	30	5.5	5.4704	5.4629	5.4804	5.5	5.5904	5.6829	5.75	5.75
	40	5.036	5.0437	5.0797	5.1737	5.396	5.5277	5.6237	5.75	5.75
	50	4.59	4.5987	4.6547	4.8007	5.17	5.3527	5.5037	5.75	5.75
	60	4.162	4.1137	4.1497	4.3277	4.864	5.0977	5.3237	5.75	5.75
	70	3.75	3.7049	3.7689	3.9379	4.25	4.5909	5.0749	5.75	5.75

ANGLE_NODE_SNOW		X (LBS)	LC	Y (LBS)	LC	M (FT*LBS)	LC
10_BASE_0PSF	max	278	12	2199	4	4641	6
10_BASE_0PSF	min	-195	3	-713	11	-1290	11
10_BASE_30PSF	max	218	12	2397	8	4292	10
10_BASE_30PSF	min	-153	3	-560	11	-1014	11
10_BASE_70PSF	max	149	12	2520	8	4179	10
10_BASE_70PSF	min	-104	3	-382	11	-692	11
30_BASE_0PSF	max	928	4	2061	4	4969	5
30_BASE_0PSF	min	-795	11	-1103	11	-1634	12
30_BASE_30PSF	max	928	4	2178	8	4969	5
30_BASE_30PSF	min	-795	11	-1103	11	-1634	12
30_BASE_70PSF	max	788	4	2440	8	4861	9
30_BASE_70PSF	min	-676	11	-938	11	-1389	12
45_BASE_0PSF	max	1689	4	2210	4	8445	5
45_BASE_0PSF	min	-1222	11	-906	11	-8377	12
45_BASE_30PSF	max	1689	4	2210	4	8445	5
45_BASE_30PSF	min	-1222	11	-906	11	-8377	12
45_BASE_70PSF	max	1689	4	2501	8	8445	5
45_BASE_70PSF	min	-1222	11	-906	11	-8377	12
50_BASE_0PSF	max	1908	12	2122	4	9440	5
50_BASE_0PSF	min	-1324	3	-795	11	-10781	12
50_BASE_30PSF	max	1908	4	2122	4	9440	5
50_BASE_30PSF	min	-1324	11	-795	11	-10781	12
50_BASE_70PSF	max	1908	4	2242	8	9440	5
50_BASE_70PSF	min	-1324	11	-795	11	-10781	12

LOAD CASE	DESCRIPTION
1	DL
2	DL + SL
3	DL + 0.6WLCA.0
4	DL + 0.6WLCA.180
5	DL + 0.6WLCB.0
6	DL + 0.6WLCB.180
7	DL + 0.45WLCA.0 + 0.75SL
8	DL + 0.45WLCA.180 + 0.75SL
9	DL + 0.45WLCB.0 + 0.75SL
10	DL + 0.45WLCB.180 + 0.75SL
11	0.6DL + 0.6WLCA.0
12	0.6DL + 0.6WLCA.180
13	0.6DL + 0.6WLCB.0
14	0.6DL + 0.6WLCB.180

Exposure = C

kz = 0.85	Velocity Exposure Coefficient (ASCE 7-10 Table 27.3-1)
kzt = 1	Topographic Factor (ASCE 7-10 Figure 26.8-1)
kd = 0.85	Wind Directionality Factor (ASCE 7-10 Table 26.6-1)
G = 0.85	Gust Effect Factor (ASCE 7-10 Section 26.9.1)
qh (ULT) = 15.0	psf - Velocity Pressure (ASCE 7-10 Section 27.3.2 EQ 27.3-1)
qh (ASD) = 9.0	psf - Velocity Pressure (ULT) * 0.6

120 MPH WIND PRESSURES - ASCE 7-10 (UNFACTORED)

Tilt Angle - 10

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-15.85	-24.90	23.39	34.71
LC B	CNW	CNL	CNW	CNL
	-35.47	0.00	37.73	9.06

Tilt Angle - 30

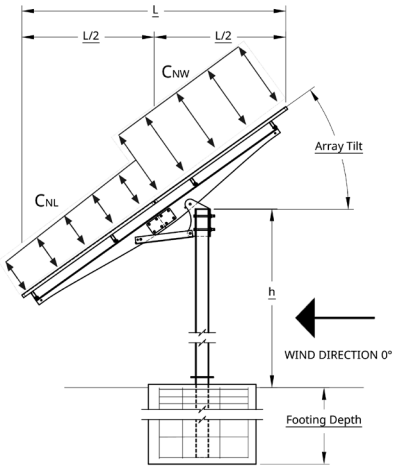
PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-40.75	-40.75	47.54	47.54
LC B	CNW	CNL	CNW	CNL
	-56.60	-11.32	58.86	22.64

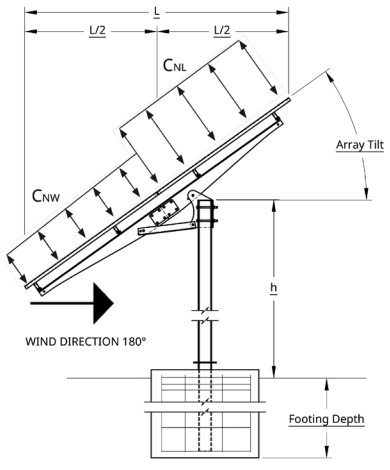
Tilt Angle - 45

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-36.22	-40.75	49.81	56.60
LC B	CNW	CNL	CNW	CNL
	-52.07	-15.85	58.86	31.69

Tilt Angle - 50

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-35.09	-41.88	52.07	58.86
LC B	CNW	CNL	CNW	CNL
	-50.94	-16.98	57.73	36.22





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MT SOLAR GROUND MOUNT ENGINEERING

120 MPH WIND LOAD

CONCRETE PIER

FOOTING DEPTH FOR 16" DIAMETER DRILLED PIER in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
120	0	6.54	6.368125	6.3425	6.456875	6.73	7.090625	7.6025	8.29	9.06
	10	6.458	6.3271	6.3265	6.4519	6.737	7.0816	7.5835	8.29	9.06
	20	6.39	6.2901	6.3085	6.4429	6.736	7.0786	7.5785	8.29	9.06
	30	6.34	6.25315	6.2844	6.43165	6.73	7.08015	7.5844	8.29	9.06
	40	6.296	6.2281	6.2665	6.4129	6.71	7.0906	7.6105	8.29	9.06
	50	6.27	6.2031	6.2425	6.3919	6.685	7.1056	7.6475	8.29	9.06
	60	6.258	6.1821	6.2165	6.3669	6.652	7.1266	7.6985	8.29	9.06
	70	6.28	6.14445	6.1707	6.35195	6.63	7.14945	7.7507	8.29	9.06

CONCRETE DESIGN		SOIL PARAMETERS	
f'c min =	4000 psi	Allowable Vertical Bearing Pressure =	1500 psf
Rebar Grade =	60	Allowable Lateral Bearing Pressure =	150 psf/ft
Vert Bar Size =	#4		
# Vert Bars =	6		
Tie Size =	#3		
Tie Spacing =	(3) @ 2" O.C. TOP, 10" O.C. Remaining		
Concrete Cover =	3 inches		

DRIVEN POST

FOOTING DEPTH FOR 6" X 9" DRIVEN POST in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
120	0	9.2	9.2932	9.5227	9.8672	10.2	10.9012	11.5907	12.6	13.1
	10	9.067	9.2202	9.4927	9.8682	10.234	10.924	11.603	12.6	13.1
	20	8.954	9.1512	9.4507	9.8492	10.228	10.927	11.597	12.6	13.1
	30	8.9	9.0884	9.3944	9.7954	10.2	10.8824	11.5684	12.6	13.1
	40	8.788	9.0252	9.3307	9.7512	10.096	10.873	11.531	12.6	13.1
	50	8.735	8.9682	9.2527	9.6722	9.97	10.816	11.471	12.6	13.1
	60	8.702	8.9152	9.1627	9.5732	9.804	10.739	11.393	12.6	13.1
	70	8.9	8.88	9.0495	9.374	9.7	10.488	11.2775	12.6	13.1

POST DESIGN	SOIL PARAMETERS	
W6x9	Allowable Vertical Bearing Pressure =	1500 psf
	Allowable Lateral Bearing Pressure =	150 psf/ft

MT SOLAR GROUND MOUNT ENGINEERING

130 MPH WIND LOAD

POST SPACING in feet

based on 6inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
130	0	6.61	6.36185	6.3071	6.44235	6.66	7.25285	7.9131	8.4	9.25
	10	6.478	6.2729	6.2461	6.3914	6.652	7.1729	7.8071	8.4	9.25
	20	6.366	6.2039	6.2051	6.3604	6.652	7.1129	7.7411	8.4	9.25
	30	6.3	6.17395	6.1937	6.35745	6.66	7.11095	7.6977	8.4	9.25
	40	6.202	6.1259	6.1831	6.3584	6.676	7.0529	7.7291	8.4	9.25
	50	6.15	6.1169	6.2021	6.3874	6.7	7.0529	7.7831	8.4	9.25
	60	6.118	6.1279	6.2411	6.4364	6.732	7.0729	7.8771	8.4	9.25
	70	6.25	6.2582	6.3507	6.5482	6.77	7.3182	7.9207	8.4	9.25

ANGLE_NODE_SNOW		X (LBS)	LC	Y (LBS)	LC	M (FT*LBS)	LC
10_BASE_0PSF	max	291	12	2205	4	4724	6
10_BASE_0PSF	min	-204	3	-807	11	-1435	11
10_BASE_30PSF	max	233	12	2325	8	4250	10
10_BASE_30PSF	min	-163	3	-645	11	-1149	11
10_BASE_70PSF	max	163	12	2454	8	4144	10
10_BASE_70PSF	min	-114	3	-452	11	-805	11
30_BASE_0PSF	max	925	4	1989	4	4856	5
30_BASE_0PSF	min	-793	11	-1141	11	-1691	12
30_BASE_30PSF	max	925	4	2029	8	4856	5
30_BASE_30PSF	min	-793	11	-1141	11	-1691	12
30_BASE_70PSF	max	871	4	2464	8	5022	9
30_BASE_70PSF	min	-747	11	-1074	11	-1591	12
45_BASE_0PSF	max	1724	4	2176	4	8512	5
45_BASE_0PSF	min	-1247	11	-972	11	-8610	12
45_BASE_30PSF	max	1724	4	2176	4	8512	5
45_BASE_30PSF	min	-1247	11	-972	11	-8610	12
45_BASE_70PSF	max	1724	4	2366	8	8512	5
45_BASE_70PSF	min	-1247	11	-972	11	-8610	12
50_BASE_0PSF	max	1948	12	2087	4	9531	5
50_BASE_0PSF	min	-1351	3	-859	11	-11061	12
50_BASE_30PSF	max	1948	4	2087	4	9531	5
50_BASE_30PSF	min	-1351	11	-859	11	-11061	12
50_BASE_70PSF	max	1948	4	2130	8	9531	5
50_BASE_70PSF	min	-1351	11	-859	11	-11061	12

LOAD CASE	DESCRIPTION
1	DL
2	DL + SL
3	DL + 0.6WLCA.0
4	DL + 0.6WLCA.180
5	DL + 0.6WLCB.0
6	DL + 0.6WLCB.180
7	DL + 0.45WLCA.0 + 0.75SL
8	DL + 0.45WLCA.180 + 0.75SL
9	DL + 0.45WLCB.0 + 0.75SL
10	DL + 0.45WLCB.180 + 0.75SL
11	0.6DL + 0.6WLCA.0
12	0.6DL + 0.6WLCA.180
13	0.6DL + 0.6WLCB.0
14	0.6DL + 0.6WLCB.180

Exposure = C

kz = 0.85		Velocity Exposure Coefficient (ASCE 7-10 Table 27.3-1)
kzt = 1		Topographic Factor (ASCE 7-10 Figure 26.8-1)
kd = 0.85		Wind Directionality Factor (ASCE 7-10 Table 26.6-1)
G = 0.85		Gust Effect Factor (ASCE 7-10 Section 26.9.1)
qh (ULT) = 15.0	psf - Velocity Pressure (ASCE 7-10 Section 27.3.2 EQ 27.3-1)	
qh (ASD) = 9.0	psf - Velocity Pressure (ULT) * 0.6	

130 MPH WIND PRESSURES - ASCE 7-10 (UNFACTORED)

Tilt Angle - 10

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-18.60	-29.23	27.46	40.74
LC B	CNW	CNL	CNW	CNL
	-41.63	0.00	44.28	10.63

Tilt Angle - 30

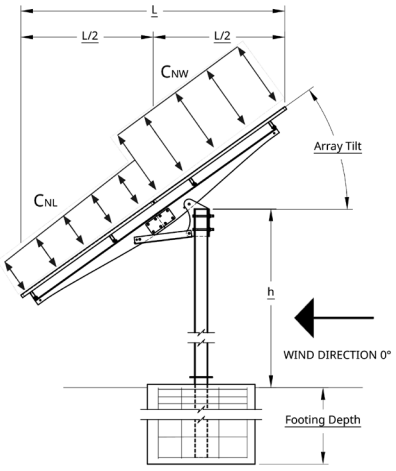
PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-47.83	-47.83	55.80	55.80
LC B	CNW	CNL	CNW	CNL
	-66.42	-13.28	69.08	26.57

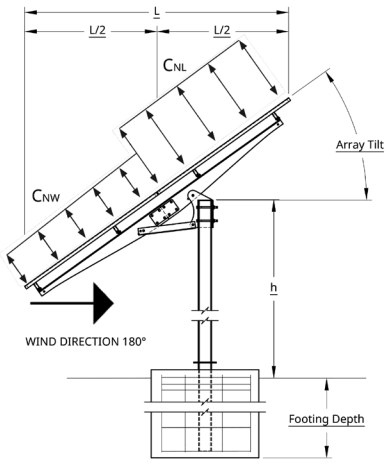
Tilt Angle - 45

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-42.51	-47.83	58.45	66.42
LC B	CNW	CNL	CNW	CNL
	-61.11	-18.60	69.08	37.20

Tilt Angle - 50

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-41.18	-49.15	61.11	69.08
LC B	CNW	CNL	CNW	CNL
	-59.78	-19.93	67.75	42.51





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MT SOLAR GROUND MOUNT ENGINEERING

130 MPH WIND LOAD

CONCRETE PIER

FOOTING DEPTH FOR 16" DIAMETER DRILLED PIER in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
130	0	6.61	6.36185	6.3071	6.44235	6.66	7.25285	7.9131	8.4	9.25
	10	6.478	6.2729	6.2461	6.3914	6.652	7.1729	7.8071	8.4	9.25
	20	6.366	6.2039	6.2051	6.3604	6.652	7.1129	7.7411	8.4	9.25
	30	6.3	6.17395	6.1937	6.35745	6.66	7.11095	7.6977	8.4	9.25
	40	6.202	6.1259	6.1831	6.3584	6.676	7.0529	7.7291	8.4	9.25
	50	6.15	6.1169	6.2021	6.3874	6.7	7.0529	7.7831	8.4	9.25
	60	6.118	6.1279	6.2411	6.4364	6.732	7.0729	7.8771	8.4	9.25
	70	6.25	6.2582	6.3507	6.5482	6.77	7.3182	7.9207	8.4	9.25

CONCRETE DESIGN	
f'c min =	4000 psi
Rebar Grade =	60
Vert Bar Size =	#4
# Vert Bars =	6
Tie Size =	#3
Tie Spacing =	(3) @ 2" O.C. TOP, 10" O.C. Remaining
Concrete Cover =	3 inches

SOIL PARAMETERS	
Allowable Vertical Bearing Pressure =	1500 psf
Allowable Lateral Bearing Pressure =	150 psf/ft

DRIVEN POST

FOOTING DEPTH FOR 6" X 9" DRIVEN POST in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
130	0	9.2	9.2817	9.5082	9.8547	10.2	10.9077	11.6142	12.7	13.2
	10	9.067	9.1997	9.4622	9.8347	10.214	10.909	11.61	12.7	13.2
	20	8.954	9.1317	9.4182	9.8107	10.214	10.902	11.602	12.7	13.2
	30	8.9	9.0769	9.3799	9.7829	10.2	10.8889	11.5919	12.7	13.2
	40	8.88	9.0377	9.3362	9.7507	10.172	10.864	11.574	12.7	13.2
	50	8.85	9.0117	9.2982	9.7147	10.13	10.833	11.554	12.7	13.2
	60	8.83	8.9997	9.2622	9.6747	10.074	10.794	11.53	12.7	13.2
	70	8.8	8.9983	9.2503	9.6273	10	10.7563	11.5083	12.7	13.2

POST DESIGN	SOIL PARAMETERS	
W6x9	Allowable Vertical Bearing Pressure =	1500 psf
	Allowable Lateral Bearing Pressure =	150 psf/ft

MT SOLAR GROUND MOUNT ENGINEERING

140 MPH WIND LOAD

POST SPACING in feet

based on 6inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
140	0	5.5	4.8487	4.3547	4.0157	3.85	3.8027	3.9287	4.25	4.25
	10	5.821	4.7107	4.2817	3.9897	3.868	3.8109	3.9237	4.25	4.25
	20	5.404	4.5527	4.1887	3.9477	3.868	3.8175	3.9267	4.25	4.25
	30	4.75	4.3608	4.0763	3.8918	3.85	3.8228	3.9383	4.25	4.25
	40	4.606	4.1767	3.9427	3.8157	3.814	3.8259	3.9567	4.25	4.25
	50	4.225	3.9587	3.7897	3.7257	3.76	3.8277	3.9837	4.25	4.25
	60	3.856	3.7207	3.6167	3.6197	3.688	3.8279	4.0187	4.25	4.25
	70	3.4	3.3892	3.4237	3.5082	3.6	3.8272	4.0617	4.25	4.25

ANGLE_NODE_SNOW		X (LBS)	LC	Y (LBS)	LC	M (FT*LBS)	LC
10_BASE_0PSF	max	297	12	2171	4	4709	6
10_BASE_0PSF	min	-208	3	-871	11	-1532	11
10_BASE_30PSF	max	256	12	2358	8	4395	10
10_BASE_30PSF	min	-180	3	-752	11	-1324	11
10_BASE_70PSF	max	183	12	2490	8	4281	10
10_BASE_70PSF	min	-129	3	-539	11	-948	11
30_BASE_0PSF	max	972	4	2033	4	5017	5
30_BASE_0PSF	min	-833	11	-1232	11	-1826	12
30_BASE_30PSF	max	972	4	2033	4	5017	5
30_BASE_30PSF	min	-833	11	-1232	11	-1826	12
30_BASE_70PSF	max	909	4	2380	8	4953	9
30_BASE_70PSF	min	-779	11	-1152	11	-1708	12
45_BASE_0PSF	max	1699	4	2083	4	8309	5
45_BASE_0PSF	min	-1229	11	-995	11	-8534	12
45_BASE_30PSF	max	1699	4	2083	4	8309	5
45_BASE_30PSF	min	-1229	11	-995	11	-8534	12
45_BASE_70PSF	max	1699	4	2186	8	8309	5
45_BASE_70PSF	min	-1229	11	-995	11	-8534	12
50_BASE_0PSF	max	1920	12	1995	4	9318	5
50_BASE_0PSF	min	-1332	3	-884	11	-10944	12
50_BASE_30PSF	max	1920	4	1995	4	9317	5
50_BASE_30PSF	min	-1332	11	-884	11	-10944	12
50_BASE_70PSF	max	1920	4	1995	4	9317	5
50_BASE_70PSF	min	-1332	11	-884	11	-10944	12

LOAD CASE	DESCRIPTION
1	DL
2	DL + SL
3	DL + 0.6WLCA.0
4	DL + 0.6WLCA.180
5	DL + 0.6WLCB.0
6	DL + 0.6WLCB.180
7	DL + 0.45WLCA.0 + 0.75SL
8	DL + 0.45WLCA.180 + 0.75SL
9	DL + 0.45WLCB.0 + 0.75SL
10	DL + 0.45WLCB.180 + 0.75SL
11	0.6DL + 0.6WLCA.0
12	0.6DL + 0.6WLCA.180
13	0.6DL + 0.6WLCB.0
14	0.6DL + 0.6WLCB.180

Exposure = C

kz = 0.85	Velocity Exposure Coefficient (ASCE 7-10 Table 27.3-1)
kzt = 1	Topographic Factor (ASCE 7-10 Figure 26.8-1)
kd = 0.85	Wind Directionality Factor (ASCE 7-10 Table 26.6-1)
G = 0.85	Gust Effect Factor (ASCE 7-10 Section 26.9.1)
qh (ULT) = 15.0	psf - Velocity Pressure (ASCE 7-10 Section 27.3.2 EQ 27.3-1)
qh (ASD) = 9.0	psf - Velocity Pressure (ULT) * 0.6

140 MPH WIND PRESSURES - ASCE 7-10 (UNFACTORED)

Tilt Angle - 10

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-21.57	-33.90	31.84	47.25
LC B	CNW	CNL	CNW	CNL
	-48.28	0.00	51.36	12.33

Tilt Angle - 30

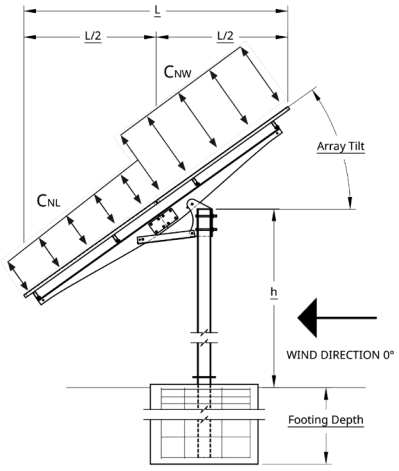
PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-55.47	-55.47	64.71	64.71
LC B	CNW	CNL	CNW	CNL
	-77.04	-15.41	80.12	30.81

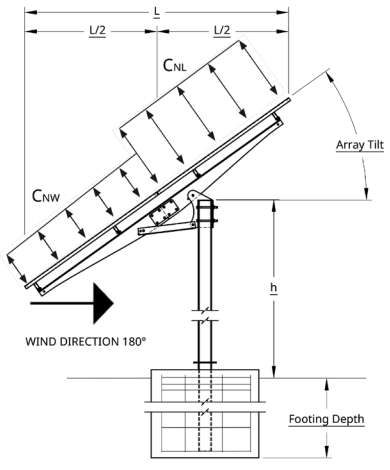
Tilt Angle - 45

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-49.30	-55.47	67.79	77.04
LC B	CNW	CNL	CNW	CNL
	-70.87	-21.57	80.12	43.14

Tilt Angle - 50

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-47.76	-57.01	70.87	80.12
LC B	CNW	CNL	CNW	CNL
	-69.33	-23.11	78.58	49.30





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MT SOLAR MADE IN MONTANA, USA

1-844-687-6527

MT SOLAR GROUND MOUNT ENGINEERING

140 MPH WIND LOAD

CONCRETE PIER

FOOTING DEPTH FOR 16" DIAMETER DRILLED PIER in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
140	0	6.57	6.4477	6.4232	6.5087	6.73	7.0697	7.5752	8.25	9.1
	10	6.501	6.4233	6.4342	6.5547	6.7313	7.2047	7.7572	8.25	9.1
	20	6.444	6.4001	6.4372	6.5827	6.7312	7.2997	7.8592	8.25	9.1
	30	6.4	6.37765	6.4314	6.59015	6.73	7.31265	7.9214	8.25	9.1
	40	6.366	6.3573	6.4192	6.5847	6.7268	7.3697	7.8232	8.25	9.1
	50	6.345	6.3377	6.3982	6.5587	6.7225	7.3447	7.6852	8.25	9.1
	60	6.336	6.3193	6.3692	6.5147	6.7168	7.2797	7.4672	8.25	9.1
	70	6.34	6.3013	6.3278	6.4343	6.71	6.9473	7.3838	8.25	9.1

CONCRETE DESIGN	
f'c min =	4000 psi
Rebar Grade =	60
Vert Bar Size =	#4
# Vert Bars =	6
Tie Size =	#3
Tie Spacing =	(3) @ 2" O.C. TOP, 10" O.C. Remaining
Concrete Cover =	3 inches

SOIL PARAMETERS	
Allowable Vertical Bearing Pressure =	1500 psf
Allowable Lateral Bearing Pressure =	150 psf/ft

DRIVEN POST

FOOTING DEPTH FOR 6" X 9" DRIVEN POST in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
140	0	9.2	9.3733	9.6543	10.0253	10.4	11.0373	11.6783	12.6	13.1
	10	9.1156	9.3363	9.6493	10.047	10.422	11.087	11.736	12.6	13.1
	20	9.0324	9.2953	9.6303	10.049	10.424	11.097	11.754	12.6	13.1
	30	9	9.2512	9.5947	10.0182	10.4	11.1052	11.7687	12.6	13.1
	40	8.97	9.2013	9.5503	9.993	10.368	10.997	11.67	12.6	13.1
	50	8.95	9.1483	9.4893	9.935	10.31	10.887	11.568	12.6	13.1
	60	8.925	9.0913	9.4143	9.857	10.232	10.737	11.426	12.6	13.1
	70	8.9	9.0371	9.3086	9.6851	10.1	10.7531	11.244	12.6	13.1

POST DESIGN	SOIL PARAMETERS	
W6x9	Allowable Vertical Bearing Pressure =	1500 psf
	Allowable Lateral Bearing Pressure =	150 psf/ft

MT SOLAR GROUND MOUNT ENGINEERING

150 MPH WIND LOAD

POST SPACING in feet

based on 6inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
150	0	5	4.3892	3.9237	3.6082	3.4	3.4272	3.5617	3.75	3.75
	10	4.876	4.3072	3.8687	3.5722	3.407	3.3932	3.5097	3.75	3.75
	20	4.712	4.2052	3.7977	3.5302	3.406	3.3712	3.4757	3.75	3.75
	30	4.5	4.0489	3.7114	3.4839	3.4	3.3589	3.4614	3.75	3.75
	40	4.264	3.9412	3.6077	3.4282	3.38	3.3632	3.4617	3.75	3.75
	50	3.98	3.7792	3.4887	3.3682	3.355	3.3772	3.4817	3.75	3.75
	60	3.656	3.5972	3.3537	3.3022	3.322	3.4032	3.5197	3.75	3.75
	70	3.25	3.2072	3.2027	3.2382	3.3	3.4292	3.5847	3.75	3.75

ANGLE_NODE_SNOW		X (LBS)	LC	Y (LBS)	LC	M (FT*LBS)	LC
10_BASE_0PSF	max	310	12	2198	4	4819	6
10_BASE_0PSF	min	-217	3	-949	11	-1655	11
10_BASE_30PSF	max	279	12	2385	8	4528	10
10_BASE_30PSF	min	-196	3	-854	11	-1490	11
10_BASE_70PSF	max	201	12	2490	8	4355	10
10_BASE_70PSF	min	-141	3	-617	11	-1077	11
30_BASE_0PSF	max	986	4	2015	4	5017	5
30_BASE_0PSF	min	-845	11	-1277	11	-1893	12
30_BASE_30PSF	max	986	4	2015	4	5017	5
30_BASE_30PSF	min	-845	11	-1277	11	-1893	12
30_BASE_70PSF	max	957	4	2342	8	4967	9
30_BASE_70PSF	min	-820	11	-1239	11	-1837	12
45_BASE_0PSF	max	1721	4	2060	4	8348	5
45_BASE_0PSF	min	-1245	11	-1038	11	-8683	12
45_BASE_30PSF	max	1721	4	2060	4	8348	5
45_BASE_30PSF	min	-1245	11	-1038	11	-8683	12
45_BASE_70PSF	max	1721	4	2095	8	8348	5
45_BASE_70PSF	min	-1245	11	-1038	11	-8683	12
50_BASE_0PSF	max	1945	12	1971	4	9372	5
50_BASE_0PSF	min	-1349	3	-926	11	-11122	12
50_BASE_30PSF	max	1945	4	1971	4	9372	5
50_BASE_30PSF	min	-1349	11	-926	11	-11122	12
50_BASE_70PSF	max	1945	4	1971	4	9372	5
50_BASE_70PSF	min	-1349	11	-926	11	-11122	12

LOAD CASE DESCRIPTION

1 - DL
2 - DL + SL
3 - DL + 0.6WLCA.0
4 - DL + 0.6WLCA.180
5 - DL + 0.6WLCB.0
6 - DL + 0.6WLCB.180
7 - DL + 0.45WLCA.0 + 0.75SL
8 - DL + 0.45WLCA.180 + 0.75SL
9 - DL + 0.45WLCB.0 + 0.75SL
10 - DL + 0.45WLCB.180 + 0.75SL
11 - 0.6DL + 0.6WLCA.0
12 - 0.6DL + 0.6WLCA.180
13 - 0.6DL + 0.6WLCB.0
14 - 0.6DL + 0.6WLCB.180

Exposure = C
kz = 0.85 — Velocity Exposure Coefficient (ASCE 7-10 Table 27.3-1)
kzt = 1 — Topographic Factor (ASCE 7-10 Figure 26.8-1)
kd = 0.85 — Wind Directionality Factor (ASCE 7-10 Table 26.6-1)
G = 0.85 — Gust Effect Factor (ASCE 7-10 Section 26.9.1)
qh (ULT) = 15.0 psf - Velocity Pressure (ASCE 7-10 Section 27.3.2 EQ 27.3-1)
qh (ASD) = 9.0 psf - Velocity Pressure (ULT) * 0.6

150 MPH WIND PRESSURES - ASCE 7-10 (UNFACTORED)

Tilt Angle - 10

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-24.76	-38.91	36.55	54.24
LC B	CNW	CNL	CNW	CNL
	-55.42	0.00	58.96	14.15

Tilt Angle - 30

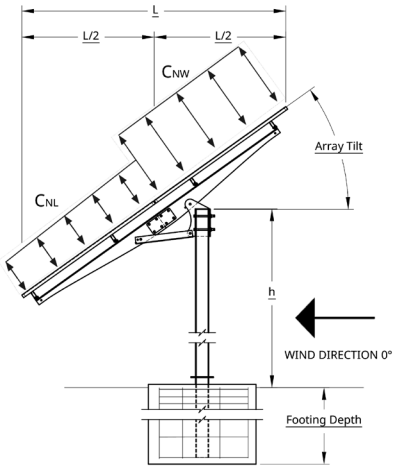
PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-63.67	-63.67	74.28	74.28
LC B	CNW	CNL	CNW	CNL
	-88.43	-17.69	91.97	35.37

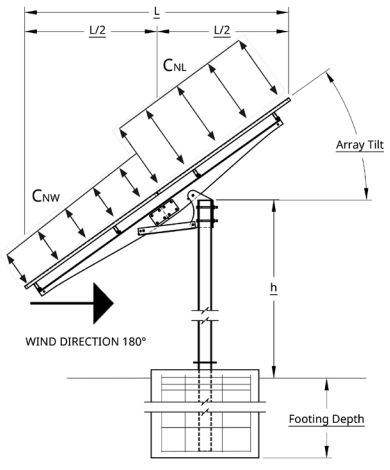
Tilt Angle - 45

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-56.60	-63.67	77.82	88.43
LC B	CNW	CNL	CNW	CNL
	-81.36	-24.76	91.97	49.52

Tilt Angle - 50

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-54.83	-65.44	81.36	91.97
LC B	CNW	CNL	CNW	CNL
	-79.59	-26.53	90.20	56.60





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MT SOLAR MADE IN MONTANA, USA

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MT SOLAR GROUND MOUNT ENGINEERING

150 MPH WIND LOAD

CONCRETE PIER

FOOTING DEPTH FOR 16" DIAMETER DRILLED PIER in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
150	0	6.63	6.441275	6.3874	6.473525	6.7	7.080775	7.6094	8.3	9.15
	10	6.569	6.4119	6.3774	6.4725	6.7	7.0791	7.6018	8.3	9.15
	20	6.516	6.3817	6.3634	6.4675	6.7	7.076	7.595	8.3	9.15
	30	6.47	6.35135	6.3436	6.45585	6.7	7.07035	7.5876	8.3	9.15
	40	6.434	6.3189	6.3234	6.4455	6.7	7.0656	7.5838	8.3	9.15
	50	6.405	6.2863	6.2974	6.4285	6.7	7.0583	7.5794	8.3	9.15
	60	6.384	6.2529	6.2674	6.4075	6.7	7.0496	7.5758	8.3	9.15
	70	6.37	6.21985	6.2246	6.36335	6.7	7.03685	7.5686	8.3	9.15

CONCRETE DESIGN	
f'c min =	4000 psi
Rebar Grade =	60
Vert Bar Size =	#4
# Vert Bars =	6
Tie Size =	#3
Tie Spacing =	(3) @ 2" O.C. TOP, 10" O.C. Remaining
Concrete Cover =	3 inches

SOIL PARAMETERS	
Allowable Vertical Bearing Pressure =	1500 psf
Allowable Lateral Bearing Pressure =	150 psf/ft

DRIVEN POST

FOOTING DEPTH FOR 6" X 9" DRIVEN POST in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
150	0	9.3	9.4347	9.6857	10.0417	10.4	11.0687	11.7397	12.6	13.2
	10	9.221	9.3807	9.6513	10.0203	10.407	11.0523	11.7156	12.6	13.2
	20	9.154	9.3327	9.6181	9.9972	10.406	11.0342	11.6924	12.6	13.2
	30	9.1	9.2902	9.5862	9.9722	10.4	11.0142	11.6702	12.6	13.2
	40	9.056	9.2547	9.5553	9.9468	10.38	10.9938	11.6496	12.6	13.2
	50	9.025	9.2247	9.5257	9.9195	10.355	10.9715	11.63	12.6	13.2
	60	9.006	9.2007	9.4973	9.8908	10.322	10.9478	11.6116	12.6	13.2
	70	9	9.1786	9.4716	9.8596	10.3	10.9206	11.5936	12.6	13.2

POST DESIGN	SOIL PARAMETERS	
W6x9	Allowable Vertical Bearing Pressure =	1500 psf
	Allowable Lateral Bearing Pressure =	150 psf/ft

MT SOLAR GROUND MOUNT ENGINEERING

160 MPH WIND LOAD

POST SPACING in feet

based on 6inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
160	0	4.5	3.9629	3.5534	3.2739	3.1	3.1049	3.2154	3.4	3.4
	10	4.35	3.8679	3.5034	3.2569	3.1	3.125	3.2384	3.4	3.4
	20	4.184	3.7609	3.4474	3.2359	3.1	3.1433	3.2594	3.4	3.4
	30	4	3.6451	3.3811	3.2121	3.1	3.1591	3.2751	3.4	3.4
	40	3.804	3.5109	3.3174	3.1819	3.1	3.1745	3.2954	3.4	3.4
	50	3.59	3.3679	3.2434	3.1489	3.1	3.1874	3.3104	3.4	3.4
	60	3.36	3.2129	3.1634	3.1119	3.1	3.1985	3.3234	3.4	3.4
	70	3.1	3.0629	3.0534	3.0739	3.1	3.2049	3.3154	3.4	3.4

ANGLE_NODE_SNOW		X (LBS)	LC	Y (LBS)	LC	M (FT*LBS)	LC
10_BASE_0PSF	max	317	12	2194	4	4855	6
10_BASE_0PSF	min	-222	3	-1006	11	-1742	11
10_BASE_30PSF	max	282	12	2264	8	4369	10
10_BASE_30PSF	min	-198	3	-894	11	-1549	11
10_BASE_70PSF	max	219	12	2487	8	4422	10
10_BASE_70PSF	min	-153	3	-893	11	-1201	11
30_BASE_0PSF	max	1022	4	2052	4	5146	5
30_BASE_0PSF	min	-876	11	-1348	11	-1998	12
30_BASE_30PSF	max	1022	4	2052	4	5146	5
30_BASE_30PSF	min	-876	11	-1348	11	-1998	12
30_BASE_70PSF	max	1022	4	2361	8	5146	5
30_BASE_70PSF	min	-876	11	-1348	11	-1998	12
45_BASE_0PSF	max	1775	4	2082	4	8552	5
45_BASE_0PSF	min	-1284	11	-1097	11	-8994	12
45_BASE_30PSF	max	1775	4	2082	4	8552	5
45_BASE_30PSF	min	-1284	11	-1097	11	-8994	12
45_BASE_70PSF	max	1775	4	2082	4	8552	5
45_BASE_70PSF	min	-1284	11	-1097	11	-8994	12
50_BASE_0PSF	max	2006	12	1990	4	9612	5
50_BASE_0PSF	min	-1397	3	-984	11	-11509	12
50_BASE_30PSF	max	2006	4	1990	4	9611	5
50_BASE_30PSF	min	2006	4	1990	4	9611	5
50_BASE_70PSF	max	-1397	11	-984	11	-11509	12
50_BASE_70PSF	min						

LOAD CASE DESCRIPTION

1 - DL
2 - DL + SL
3 - DL + 0.6WLCA.0
4 - DL + 0.6WLCA.180
5 - DL + 0.6WLCB.0
6 - DL + 0.6WLCB.180
7 - DL + 0.45WLCA.0 + 0.75SL
8 - DL + 0.45WLCA.180 + 0.75SL
9 - DL + 0.45WLCB.0 + 0.75SL
10 - DL + 0.45WLCB.180 + 0.75SL
11 - 0.6DL + 0.6WLCA.0
12 - 0.6DL + 0.6WLCA.180
13 - 0.6DL + 0.6WLCB.0
14 - 0.6DL + 0.6WLCB.180

Exposure = C
kz = 0.85 — Velocity Exposure Coefficient (ASCE 7-10 Table 27.3-1)
kzt = 1 — Topographic Factor (ASCE 7-10 Figure 26.8-1)
kd = 0.85 — Wind Directionality Factor (ASCE 7-10 Table 26.6-1)
G = 0.85 — Gust Effect Factor (ASCE 7-10 Section 26.9.1)
qh (ULT) = 15.0 psf - Velocity Pressure (ASCE 7-10 Section 27.3.2 EQ 27.3-1)
qh (ASD) = 9.0 psf - Velocity Pressure (ULT) * 0.6

160 MPH WIND PRESSURES - ASCE 7-10 (UNFACTORED)

Tilt Angle - 10

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-28.17	-44.27	41.59	61.71
LC B	CNW	CNL	CNW	CNL
	-63.05	0.00	67.08	16.10

Tilt Angle - 30

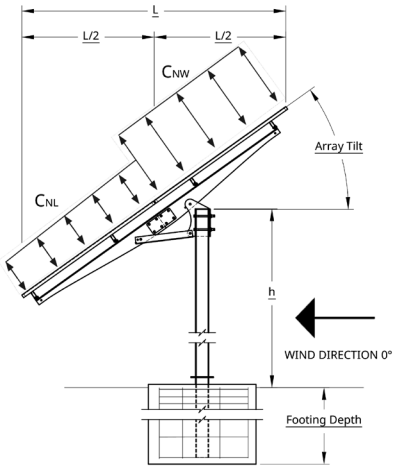
PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-72.45	-72.45	84.52	84.52
LC B	CNW	CNL	CNW	CNL
	-100.62	-20.12	104.64	40.25

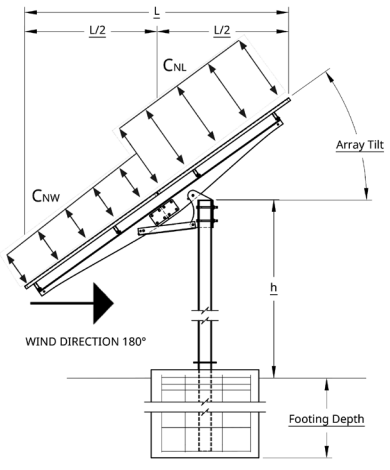
Tilt Angle - 45

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-64.40	-72.45	88.54	100.62
LC B	CNW	CNL	CNW	CNL
	-92.57	-28.17	104.64	56.35

Tilt Angle - 50

PSF	Wind @ 0 Degrees		Wind @ 180 Degrees	
LC A	CNW	CNL	CNW	CNL
	-62.38	-74.46	92.57	104.64
LC B	CNW	CNL	CNW	CNL
	-90.56	-30.19	102.63	64.40





sales@mtsolar.us

MT SOLAR MADE IN MONTANA, USA

1-844-687-6527

MT SOLAR GROUND MOUNT ENGINEERING

160 MPH WIND LOAD

CONCRETE PIER

FOOTING DEPTH FOR 16" DIAMETER DRILLED PIER in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
160	0	6.66	6.39825	6.3425	6.46675	6.81	7.16525	7.6945	8.5	9.25
	10	6.53899	6.3323	6.3115	6.4588	6.81	7.1736	7.7042	8.5	9.25
	20	6.43792	6.2823	6.2885	6.4548	6.81	7.1825	7.7153	8.5	9.25
	30	6.39	6.2476	6.2736	6.4496	6.81	7.1916	7.7276	8.5	9.25
	40	6.29536	6.2303	6.2665	6.4588	6.81	7.2021	7.7417	8.5	9.25
	50	6.25375	6.2283	6.2675	6.4668	6.81	7.2128	7.757	8.5	9.25
	60	6.23184	6.2423	6.2765	6.4788	6.81	7.2241	7.7737	8.5	9.25
	70	6.41	6.2644	6.2899	6.4704	6.81	7.2364	7.7919	8.5	9.25

CONCRETE DESIGN	
f'c min =	4000 psi
Rebar Grade =	60
Vert Bar Size =	#4
# Vert Bars =	6
Tie Size =	#3
Tie Spacing =	(3) @ 2" O.C. TOP, 10" O.C. Remaining
Concrete Cover =	3 inches

SOIL PARAMETERS	
Allowable Vertical Bearing Pressure =	1500 psf
Allowable Lateral Bearing Pressure =	150 psf/ft

DRIVEN POST

FOOTING DEPTH FOR 6" X 9" DRIVEN POST in feet

based on 6 inch beam, 10x12 SPLIT WING - 72 CELL module with 18" FRONT GROUND CLEARANCE

WIND (MPH)	GROUND SNOW (PSF)	TILT ANGLE								
		10	15	20	25	30	35	40	45	50
160	0	9.3	9.5115	9.8235	10.2205	10.6	11.2695	11.9215	12.8	13.3
	10	9.167	9.4235	9.7685	10.19	10.6	11.3	11.9	12.8	13.3
	20	9.054	9.3555	9.7255	10.165	10.6	11.3	11.9	12.8	13.3
	30	9	9.3067	9.6952	10.1487	10.6	11.2507	11.8992	12.8	13.3
	40	8.888	9.2795	9.6755	10.133	10.6	11.3	11.9	12.8	13.3
	50	8.835	9.2715	9.6685	10.126	10.6	11.3	11.9	12.8	13.3
	60	8.802	9.2835	9.6735	10.125	10.6	11.3	11.9	12.8	13.3
	70	9	9.3067	9.6952	10.1487	10.6	11.2507	11.8992	12.8	13.3

POST DESIGN	SOIL PARAMETERS	
W6x9	Allowable Vertical Bearing Pressure =	1500 psf
	Allowable Lateral Bearing Pressure =	150 psf/ft