Printing Input Parameters.....

parameters	unit	values	Unnamed: 3
Basin Area	sq mile	6.0	nan
Avg_GL	feet-PWD	4.92	nan
Highest Water Level ,RS	feet-PWD	11.48	nan
Lowest Water Level,RS	feet-PWD	-4.92	14.76
Moonsoon Lowest Water Level	feet-PWD	-5.4	nan
Embankment Crest Level	feet-PWD	16.4	nan
Embankment Top Width	feet-PWD	19.68	nan
C/S Slope (1:N)	nan	2.0	nan
R/S Slope	nan	3.0	nan
Invert Level	feet-PWD	-3.28	nan
Discharge/sq mile	cfs/sqmile	51.0	nan
No Vent	nan	2.0	nan
Vent Width	feet	5.0	nan
Vent Height	feet	6.0	nan
Pier_width	inch	15.0	nan
Abutment_width	inch	18.0	nan
flare_Angle_min	degree	10.0	nan
flare_Angle_max	degree	15.0	nan
glacis_drop_min	feet	3.0	nan
glacis_drop_max	feet	4.0	nan
Barrel Length	feet	32.0	nan
cutoff_depth_min	min	9.84	nan

cutoff_depth_max	max	21.32	nan
Laycey's Silt Factor	nan	0.4	nan
maximum head difference	feet	15.0	nan
Allowable Exit Gradient	nan	0.143	nan
maximum_floor_thickness	feet	3.28	nan
Top_slab_thickness	inch	12.0	nan
unit weight of fill soil	pcf	120.0	nan
friction Angle of fill soil	degree	30.0	nan
surcharge height	feet	12.68	nan
return wall level	fee-pwd	11.35	nan

Printing Stilling Basin Calcualtion in FPS unit.....

Q	FAngle	g_drop	Bc	q	dc	vc	B1	q1	d1	v1	B2	q2	d2	v2	Fr1	LJ	Eff	Del_E	Del_E(%)
687.03	10.0	3.0	11.25	61.069	4.874	12.528	14.424	47.631	2.067	23.042	27.126	25.327	7.287	3.475	2.824	36.02	77.1	2.361	22.9
687.03	10.0	4.0	11.25	61.069	4.874	12.528	15.482	44.376	1.792	24.76	29.16	23.561	7.413	3.178	3.259	38.786	70.5	3.342	29.5
687.03	11.0	3.0	11.25	61.069	4.874	12.528	14.749	46.582	2.015	23.115	28.743	23.903	7.232	3.305	2.869	35.996	76.4	2.435	23.6
687.03	11.0	4.0	11.25	61.069	4.874	12.528	15.915	43.168	1.739	24.83	30.93	22.212	7.336	3.028	3.319	38.624	69.6	3.438	30.4
687.03	12.0	3.0	11.25	61.069	4.874	12.528	15.076	45.571	1.966	23.184	30.363	22.627	7.177	3.153	2.914	35.96	75.7	2.508	24.3
687.03	12.0	4.0	11.25	61.069	4.874	12.528	16.351	42.016	1.688	24.896	32.698	21.011	7.261	2.894	3.377	38.453	68.8	3.531	31.2
687.03	13.0	3.0	11.25	61.069	4.874	12.528	15.406	44.596	1.918	23.25	31.988	21.477	7.123	3.015	2.958	35.914	75.0	2.58	25.0
687.03	13.0	4.0	11.25	61.069	4.874	12.528	16.791	40.917	1.639	24.958	34.464	19.935	7.187	2.774	3.435	38.275	68.0	3.622	32.0
687.03	14.0	3.0	11.25	61.069	4.874	12.528	15.738	43.654	1.873	23.313	33.618	20.436	7.069	2.891	3.002	35.857	74.3	2.65	25.7
687.03	14.0	4.0	11.25	61.069	4.874	12.528	17.234	39.865	1.594	25.017	36.228	18.964	7.114	2.666	3.492	38.091	67.2	3.71	32.8
687.03	15.0	3.0	11.25	61.069	4.874	12.528	16.073	42.744	1.829	23.373	35.254	19.488	7.016	2.778	3.046	35.791	73.6	2.719	26.4
687.03	15.0	4.0	11.25	61.069	4.874	12.528	17.681	38.857	1.55	25.073	37.992	18.083	7.043	2.568	3.549	37.902	66.4	3.796	33.6

Printing Stilling Basin Calcualtion in MKS unit.....

Q	FAngle	g_drop	Bc	q	dc	vc	B1	q1	d1	v1	B2	q2	d2	v2	Fr1	LJ	Eff	Del_E	Del_E(%)
19.46	10.0	0.91	3.43	5.68	1.49	3.82	4.4	4.43	0.63	7.03	8.27	2.35	2.22	1.06	2.824	11.0	77.1	0.72	22.9
19.46	10.0	1.22	3.43	5.68	1.49	3.82	4.72	4.12	0.55	7.55	8.89	2.19	2.26	0.97	3.259	12.0	70.5	1.02	29.5
19.46	11.0	0.91	3.43	5.68	1.49	3.82	4.5	4.33	0.61	7.05	8.76	2.22	2.2	1.01	2.869	11.0	76.4	0.74	23.6
19.46	11.0	1.22	3.43	5.68	1.49	3.82	4.85	4.01	0.53	7.57	9.43	2.06	2.24	0.92	3.319	12.0	69.6	1.05	30.4
19.46	12.0	0.91	3.43	5.68	1.49	3.82	4.6	4.24	0.6	7.07	9.26	2.1	2.19	0.96	2.914	11.0	75.7	0.76	24.3
19.46	12.0	1.22	3.43	5.68	1.49	3.82	4.99	3.9	0.51	7.59	9.97	1.95	2.21	0.88	3.377	12.0	68.8	1.08	31.2
19.46	13.0	0.91	3.43	5.68	1.49	3.82	4.7	4.14	0.58	7.09	9.75	2.0	2.17	0.92	2.958	11.0	75.0	0.79	25.0
19.46	13.0	1.22	3.43	5.68	1.49	3.82	5.12	3.8	0.5	7.61	10.51	1.85	2.19	0.85	3.435	12.0	68.0	1.1	32.0
19.46	14.0	0.91	3.43	5.68	1.49	3.82	4.8	4.06	0.57	7.11	10.25	1.9	2.16	0.88	3.002	11.0	74.3	0.81	25.7
19.46	14.0	1.22	3.43	5.68	1.49	3.82	5.25	3.7	0.49	7.63	11.05	1.76	2.17	0.81	3.492	12.0	67.2	1.13	32.8
19.46	15.0	0.91	3.43	5.68	1.49	3.82	4.9	3.97	0.56	7.13	10.75	1.81	2.14	0.85	3.046	11.0	73.6	0.83	26.4
19.46	15.0	1.22	3.43	5.68	1.49	3.82	5.39	3.61	0.47	7.64	11.58	1.68	2.15	0.78	3.549	12.0	66.4	1.16	33.6

Printing Basin Selection Data.....

Parmeter Name	Unit	Values
Discharge/ft	cfs/ft	61.069
Flare Angle	Degree	10.0
Glasis_Drop	Feet	4.0
Exit Velocity	Feet/sec	3.18
Fr1		3.26
Jump_Length	Feet	38.79
Energy Loss(%)	%	29.5
Floor Length	Feet	146.0
Point_1	Feet	0.0
Point_2	Feet	57.0
Point_3	Feet	89.0
Point_4	Feet	146.0

Printing Seepage Calcualtion Data.....

locations	uncorrected	mc_corr	t_corrr	corrected
Phi_E	33.52	-1.6504756170209134	1.6	33.57
Phi_C1	66.48	1.6504756170209134	1.6	69.73

Printing thickness calcualtion data.....

location	p(%)	p(feet)	th_min(feet)
1.0	69.73	10.46	0.0
2.0	55.61	8.34	0.0
3.0	47.69	7.15	5.11
4.0	33.57	5.04	3.6

Printing Detiled thickness calcualtion data.....

dist	P%	Hw	Bi	-WwL	Net(Hw)	t_req
0.0	33.57	5.04	48.0	1.13	3.91	2.79
3.0	34.31301369863014	5.15	46.07	1.18	3.97	2.84
6.0	35.05602739726027	5.26	44.13	1.23	4.03	2.88
9.0	35.79904109589041	5.37	42.2	1.29	4.08	2.91
12.0	36.542054794520546	5.48	40.26	1.35	4.13	2.95
15.0	37.28506849315069	5.59	38.33	1.42	4.17	2.98
18.0	38.028082191780825	5.7	36.39	1.49	4.21	3.01
21.0	38.77109589041096	5.82	34.46	1.58	4.24	3.03
24.0	39.5141095890411	5.93	32.53	1.67	4.26	3.04
27.0	40.257123287671234	6.04	30.59	1.78	4.26	3.04
30.0	41.00013698630137	6.15	28.66	1.9	4.25	3.04
33.0	41.74315068493151	6.26	26.72	2.04	4.22	3.01
36.0	42.48616438356164	6.37	24.79	2.19	4.18	2.99
39.0	43.22917808219178	6.48	22.86	2.38	4.1	2.93
42.0	43.972191780821916	6.6	20.92	2.6	4.0	2.86
45.0	44.71520547945205	6.71	18.99	2.87	3.84	2.74
48.0	45.458219178082196	6.82	17.05	3.19	3.63	2.59
51.0	46.20123287671233	6.93	15.12	3.6	3.33	2.38
54.0	46.94424657534247	7.04	13.18	4.13	2.91	2.08
57.0	47.687260273972605	7.15	11.25	4.84	2.31	1.65

Printing Input Data for Load Calcualtions.....

Parameter Name	Unit	Parameter Value	Detail Name
VW	feet	5.0	Vent Inner Span/width
VH	feet	6.0	Vent Height
NV	nos	2.0	No of Vents
Tt	inch	12.0	Top Slab thicjness
Ts	inch	18.0	Abutmet Thicknes
Tb	inch	36.480000000000004	Bottom Slab Thicknes
Tp	inch	15.0	Pier Thicknes
gamma_s	pcf	120.0	Soil Fill Unit Wieght
phi	degree	30.0	friction angle of back fill soil
H	feet	12.68	Height of srcharge above pier
MPF	unitless	1.2	Multiple Presnce Factor
IM	unitless	1.3	Impact factor for Dynamic Loading
INVERT_LEVEL	ft-pwd	-3.28	Invert Level of Regulator
EMBANKMENT_CREST_LEVEL	ft-pwd	16.4	Emnakment Crest Level
h_prime	ft	3.0	Additional Surcharge load above Embankemt

Printing Barrel Load.....

Notations	LoadName	LoadUnits	LoadType	Load_Value_Maximum	Load_Value_Minimum
TSL	Load on Top Slab	klf	UDL	-1.723	-1.723
BSL	Load on Bottom Slab	klf	UDL	1.992	1.992
SWL+	Load on Left Side Wall	klf	Trapizoidal	1.0008	1.4819999999999998
SWL(-)	Load on Right Side Wall	klf	Trapizoidal	-1.0008	-1.4819999999999998

Wrtitng Node Info.....

JointNo	Marker	Xcoordiante	Ycoordinate	R_x	R_y	R_rotation
1	A	0.0	96.24000000000001	1	1	0
2	B	76.5	96.24000000000001	1	1	0
3	C	153.0	96.24000000000001	1	1	0
4	D	0.0	0.0	1	1	0
5	E	76.5	0.0	1	1	0
6	F	153.0	0.0	1	1	0

Writing Member Info.....

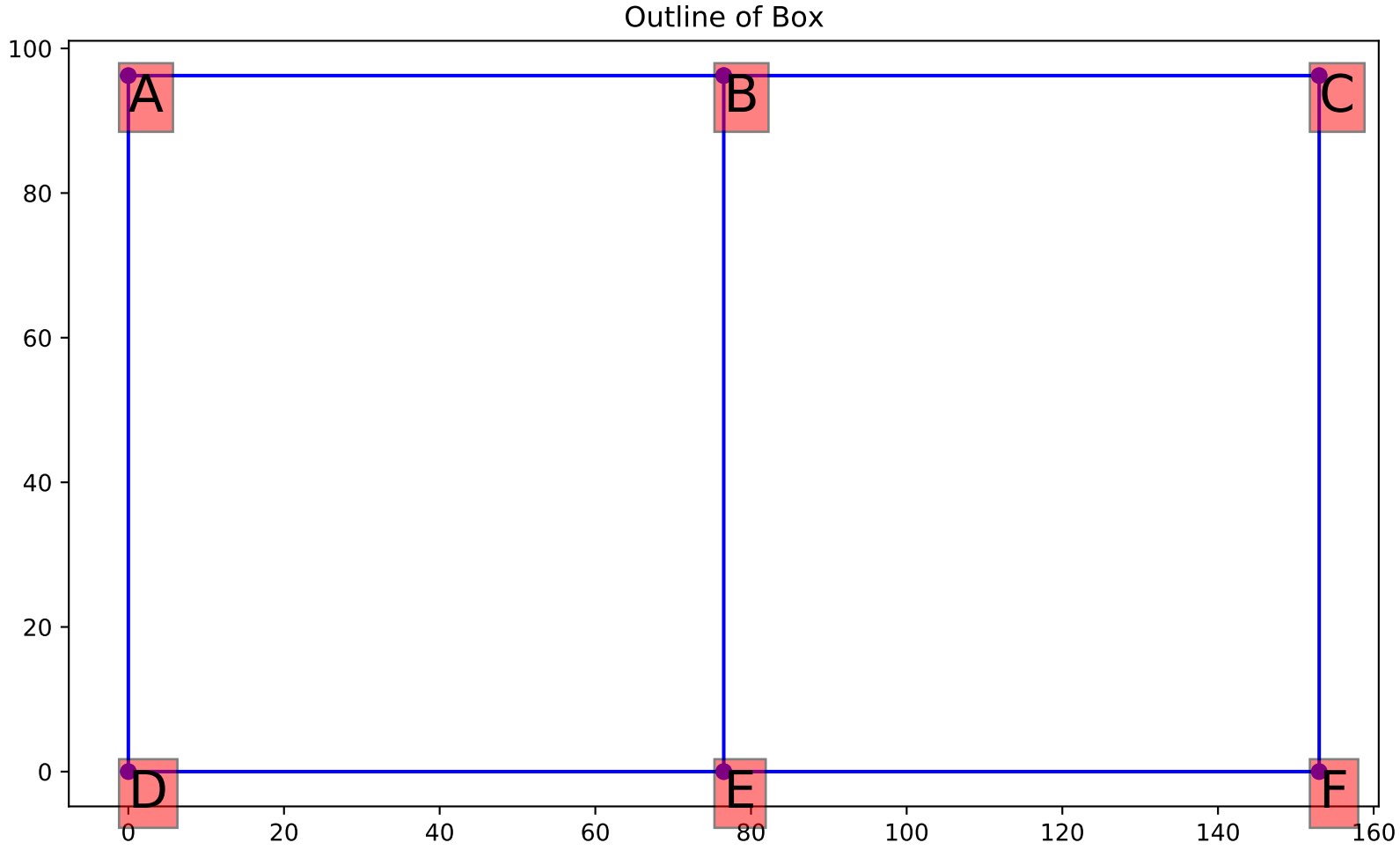
MemberNo	joint_i	joint_k	Area	I	E
1.0	1.0	2.0	144.0	1728.0	3122.0
2.0	2.0	3.0	144.0	1728.0	3122.0
3.0	4.0	5.0	437.76000000000005	48547.23379200001	3122.0
4.0	5.0	6.0	437.76000000000005	48547.23379200001	3122.0
5.0	1.0	4.0	1.5	5832.0	3122.0
6.0	2.0	5.0	180.0	3375.0	3122.0
7.0	3.0	6.0	1.5	5832.0	3122.0

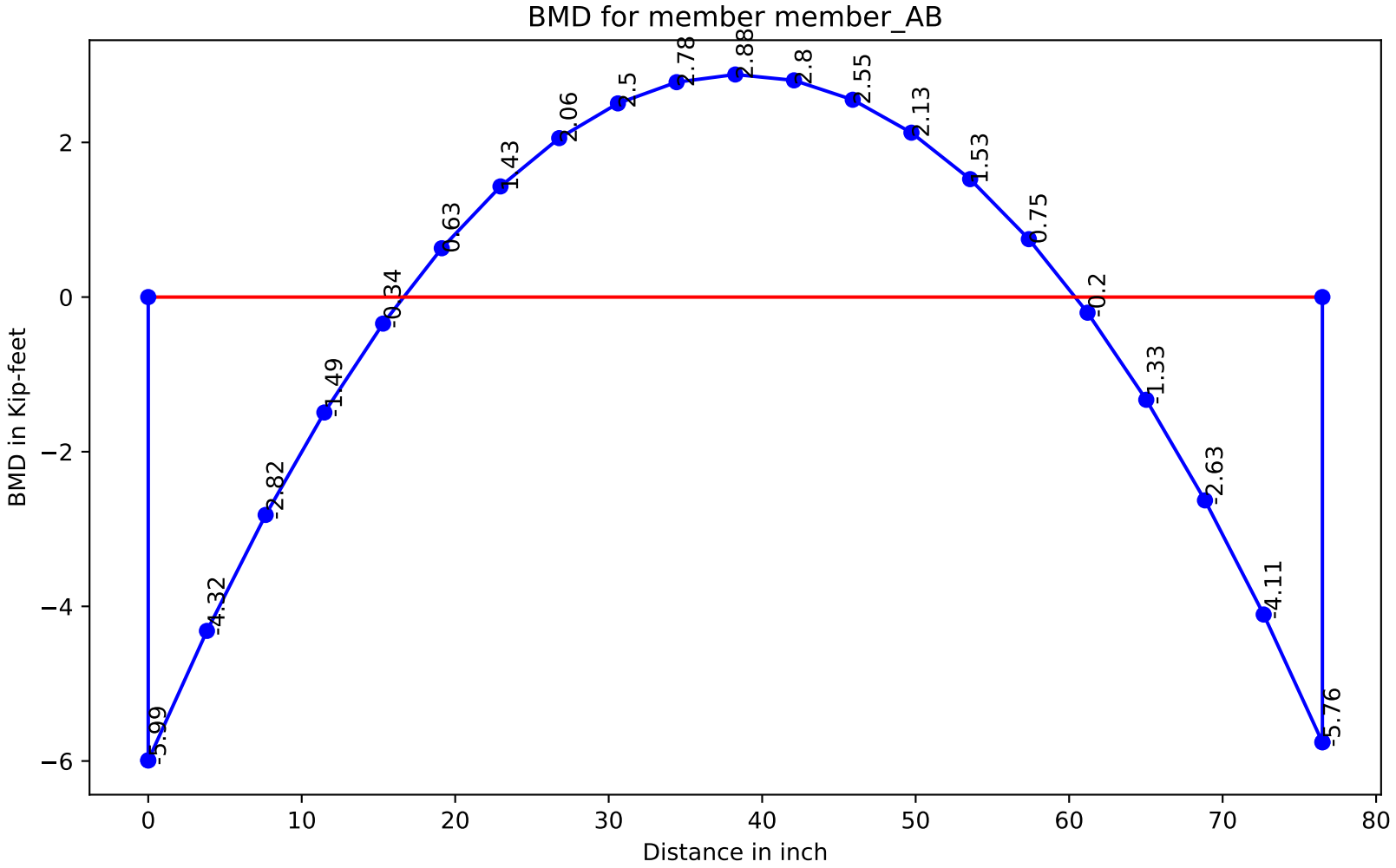
Writing Member Load Info.....

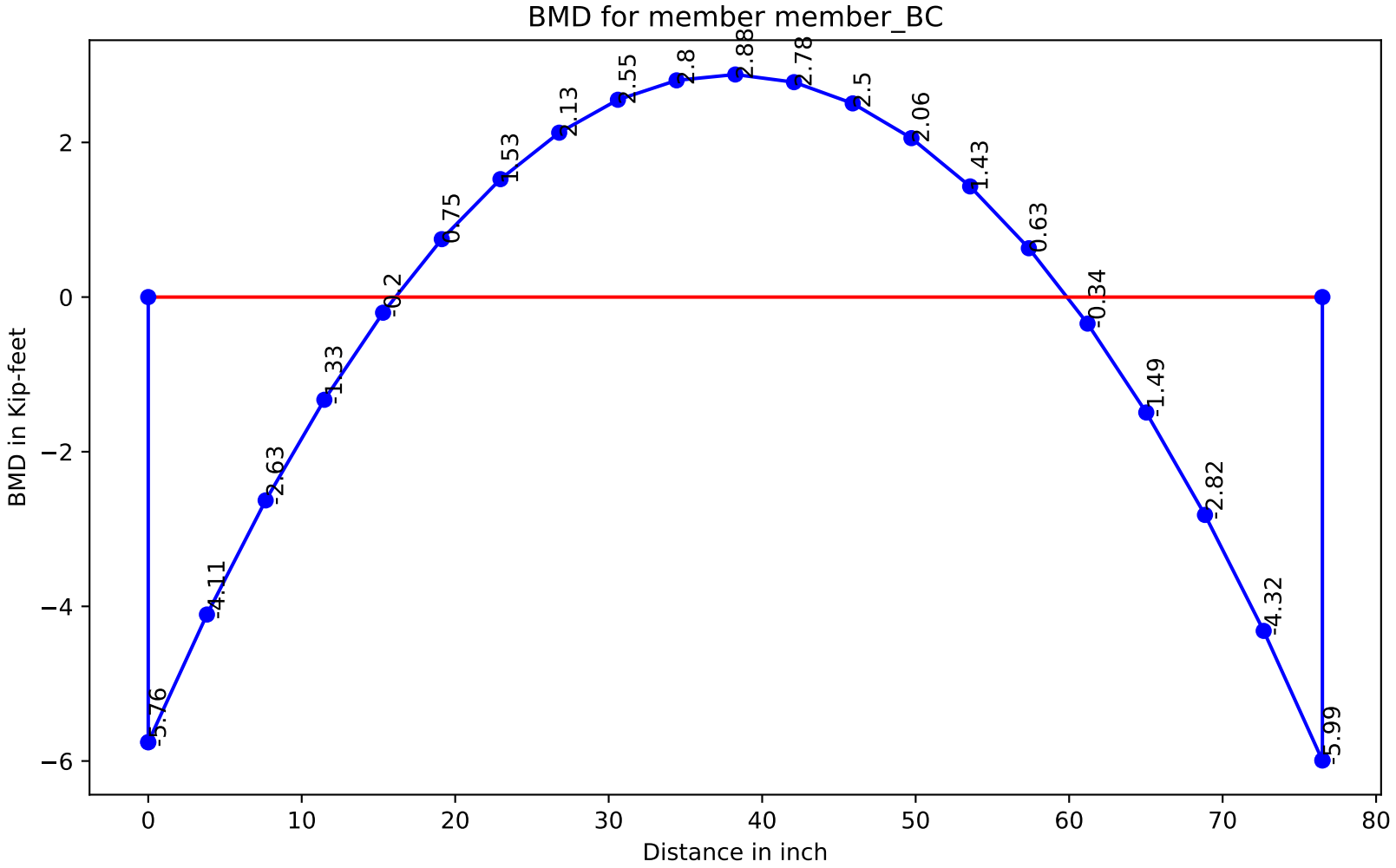
load_value	application_point	Type	memberNo	w2
-0.14358333333333334	0.0	3.0	1.0	-0.14358333333333334
-0.14358333333333334	0.0	3.0	2.0	-0.14358333333333334
0.166	0.0	3.0	3.0	0.166
0.166	0.0	3.0	4.0	0.166
0.08339999999999999	0.0	7.0	5.0	0.12349999999999998
-0.08339999999999999	0.0	7.0	7.0	-0.12349999999999998

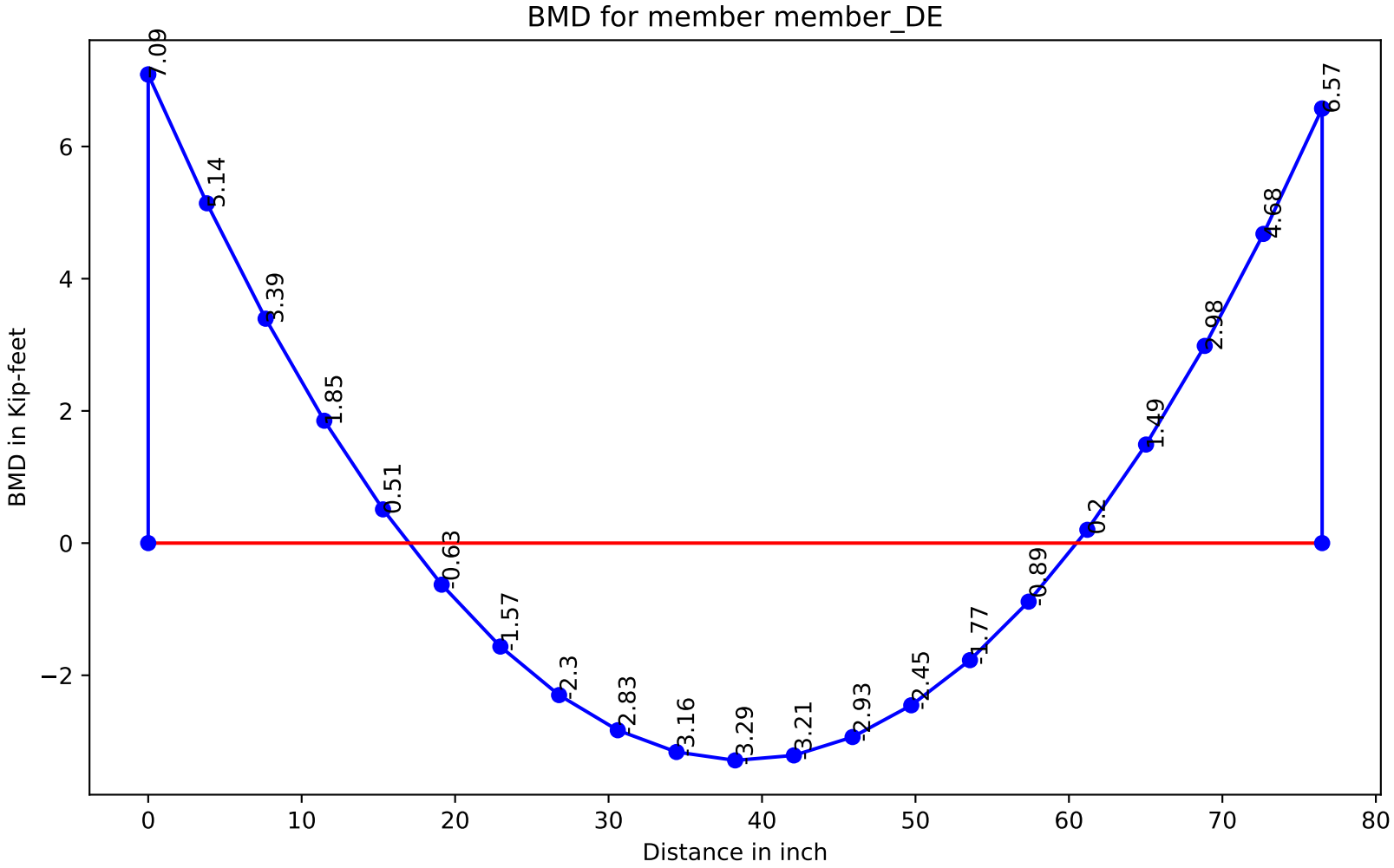
Wrting Joint Load Info.....

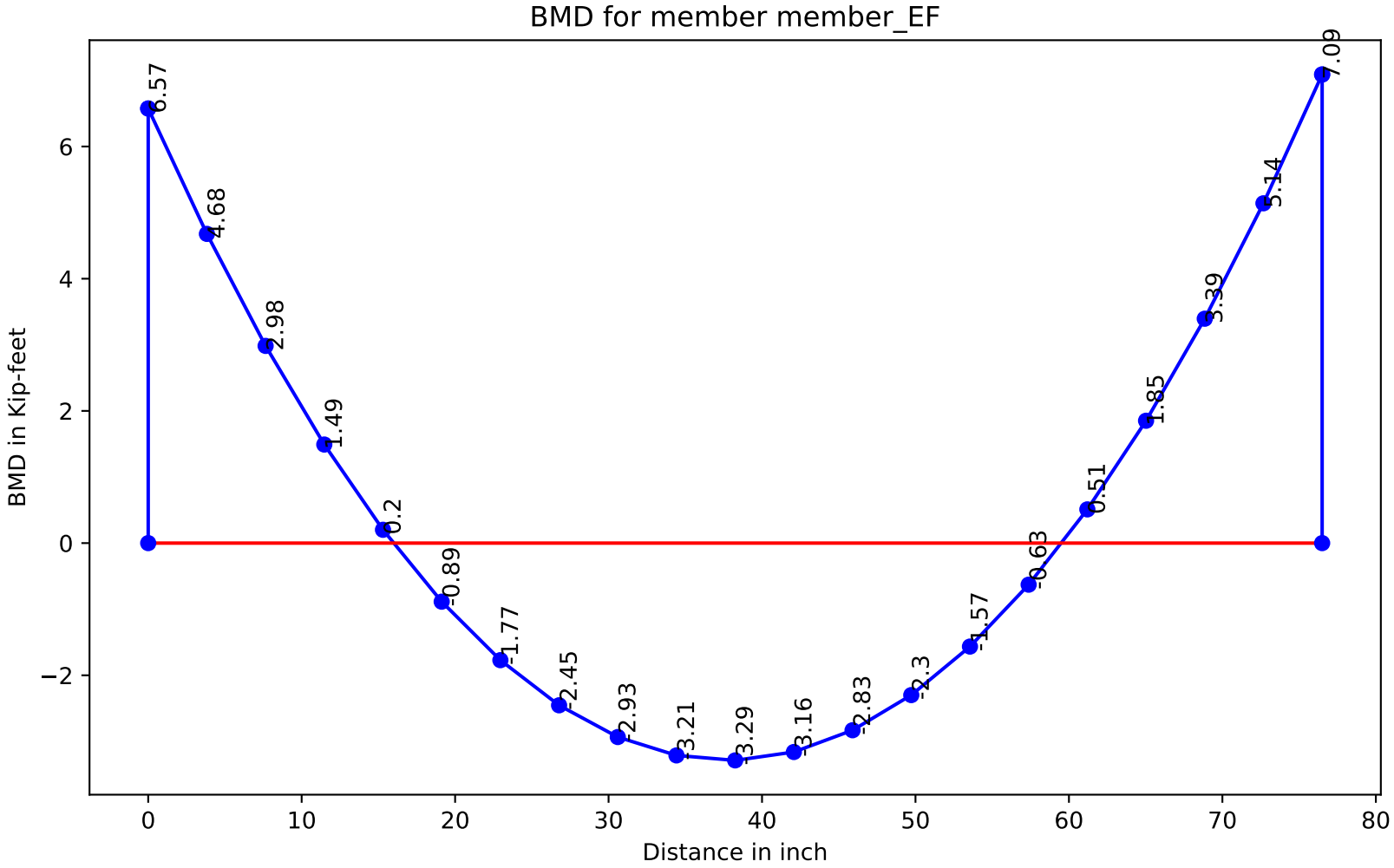
JointNo	xvalue	yvalue	mvalue
0	0	0	0

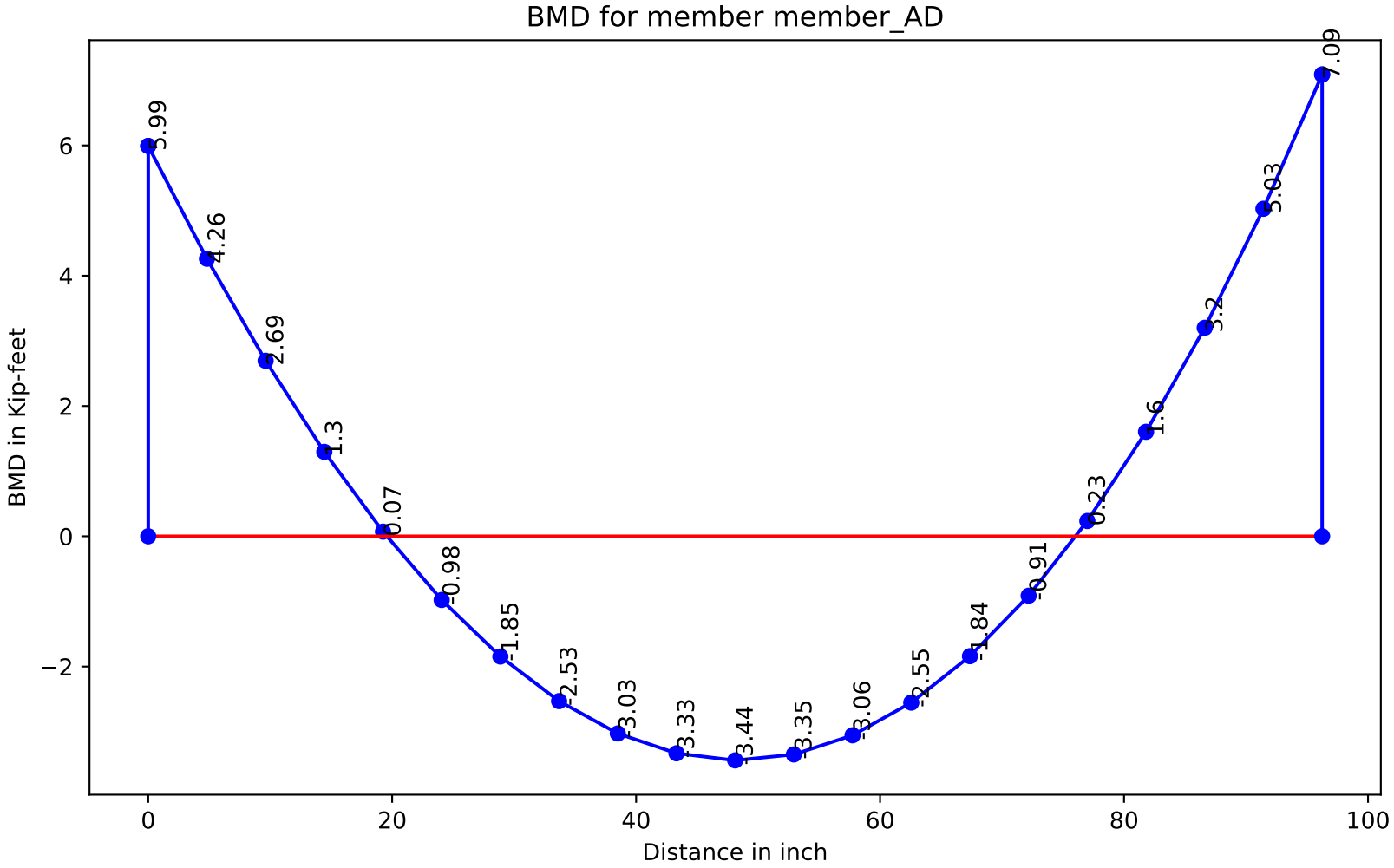

Outline of Box
A
B
C
D
E
F
100
80
60
40
20
0
0
20
40
60
80
100
120
140
160

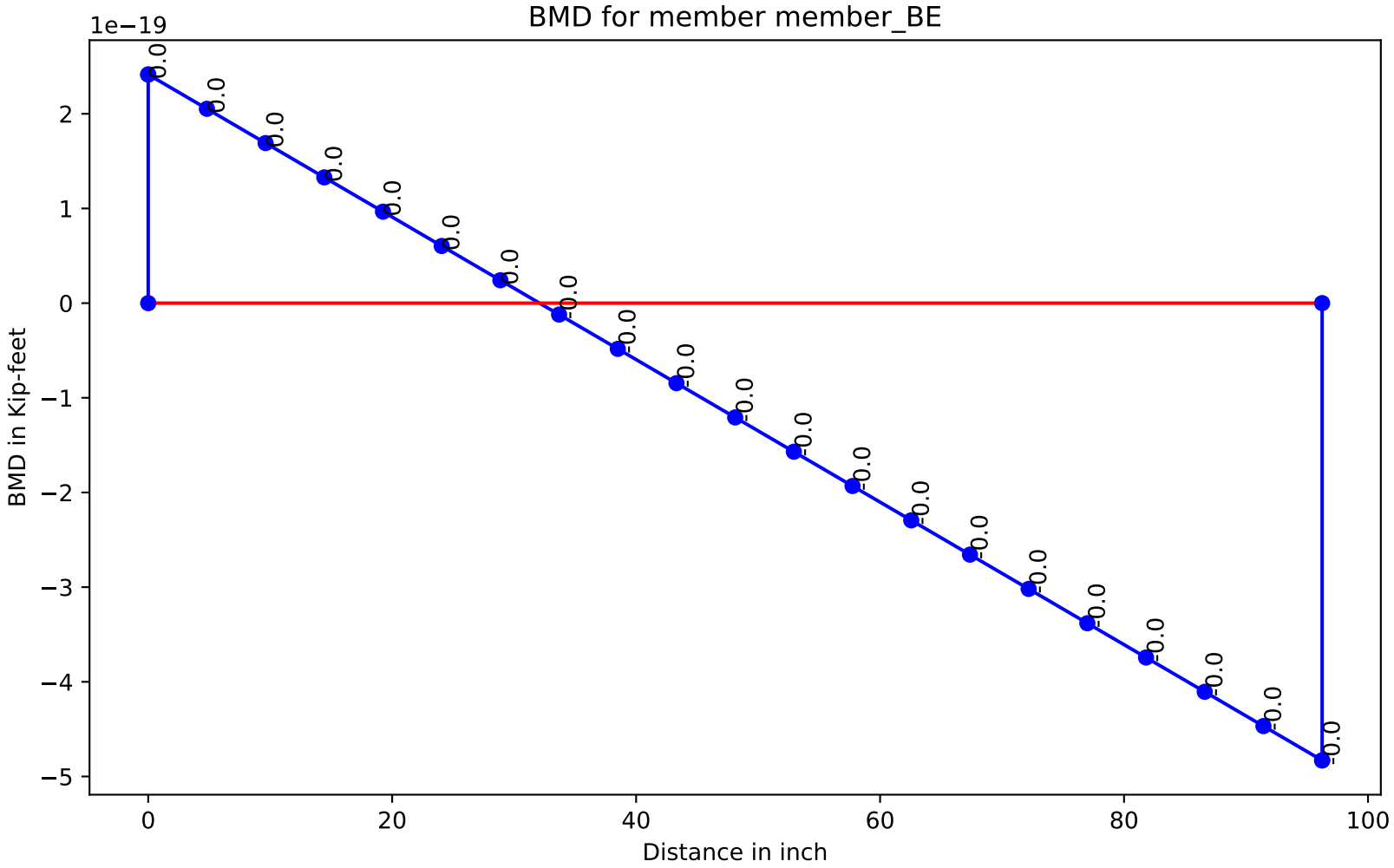

BMD for member member_AB
BMD in Kip-feet
Distance in inch
-5.99
-4.32
-2.82
-1.49
-0.34
0.63
1.43
2.06
2.5
2.78
2.88
2.8
2.55
2.13
1.53
0.75
-0.2
-1.33
-2.63
-4.11
-5.76
0
10
20
30
40
50
60
70
80
2
0
−2
−4
−6

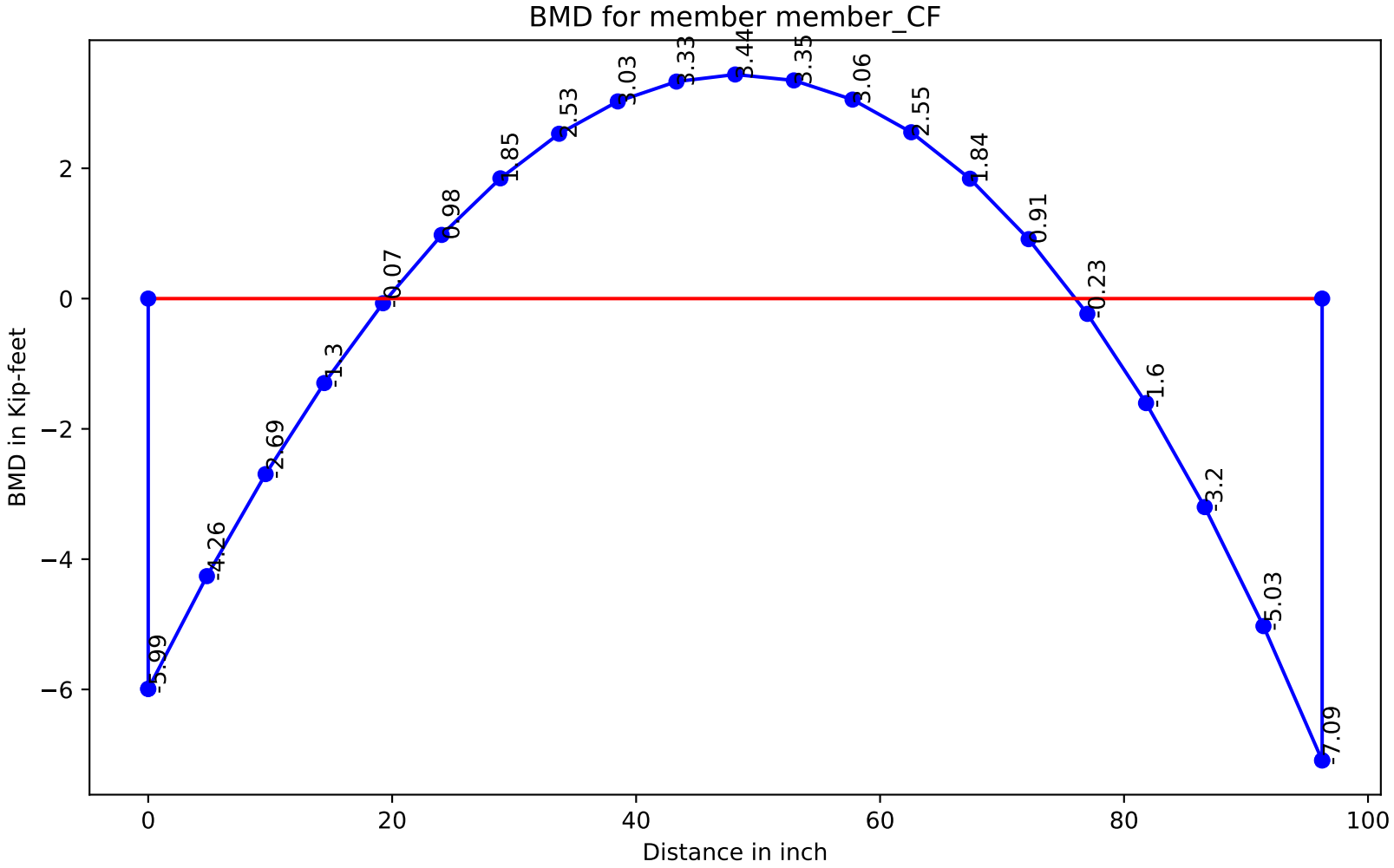

BMD for member member_BC
BMD in Kip-feet
Distance in inch
-5.76
-4.11
-2.63
-1.33
-0.2
0.75
1.53
2.13
2.55
2.8
2.88
2.78
2.5
2.06
1.43
0.63
-0.34
-1.49
-2.82
-4.32
-5.99
0
10
20
30
40
50
60
70
80
2
0
−2
−4
−6


BMD for member member_DE
BMD in Kip-feet
Distance in inch
7.09
5.14
3.39
1.85
0.51
-0.63
-1.57
-2.3
-2.83
-3.16
-3.29
-3.21
-2.93
-2.45
-1.77
-0.89
0.2
1.49
2.98
4.68
6.57
6
4
2
0
−2
0
10
20
30
40
50
60
70
80


BMD for member member_EF
BMD in Kip-feet
Distance in inch
6.57
4.68
2.98
1.49
0.2
-0.89
-1.77
-2.45
-2.93
-3.21
-3.29
-3.16
-2.83
-2.3
-1.57
-0.63
0.51
1.85
3.39
5.14
7.09
6
4
2
0
−2
0
10
20
30
40
50
60
70
80


BMD for member member_AD
BMD in Kip-feet
Distance in inch
6
4
2
0
−2
0
20
40
60
80
100
5.99
4.26
2.69
1.3
0.07
-0.98
-1.85
-2.53
-3.03
-3.33
-3.44
-3.35
-3.06
-2.55
-1.84
-0.91
0.23
1.6
3.2
5.03
7.09


BMD for member member_BE
1e−19
BMD in Kip-feet
Distance in inch
2
1
0
−1
−2
−3
−4
−5
0
20
40
60
80
100
0.0


BMD for member member_CF
BMD in Kip-feet
Distance in inch
-5.99
-4.26
-2.69
-1.3
-0.07
0.98
1.85
2.53
3.03
3.33
3.44
3.35
3.06
2.55
1.84
0.91
-0.23
-1.6
-3.2
-5.03
-7.09
2
0
−2
−4
−6
0
20
40
60
80
100