



8653 E. Highway 67
Alvarado, TX 76009
Office: 817-852-1700
www.SabreTubularStructures.com

WPE Class: C6 940 Lb Load Max. Section Length = 55 ft
Top Dia. (in) = 6
One Section Taper = 0.0355
Multi-Section Taper = 0.1200
Taper for height > 120' = 0.1200
Shape (sides) = 8
Slip joint Factor = 1.65
Max. Top Section Length = 47.5 ft
Top Section Length for 55' - 60' = 40 ft
Top Section Thk. = 0.1875 in
Max. Mid Section Length = 35 ft
Mid Section Thk. = 0.1875 in
Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.1875 in
Bot Section Thk. (if 3 sections) = 0.1875 in
Bot Section Thk. (Height > 120') = 0.1875 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

C6

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	6	7.0650	0.1875	402													402	5.0000	6.8875	65.00	38.85	35.9	21.6	60.23%
35	35	6	7.2425	0.1875	476													476	5.5000	7.0473	65.00	40.75	37.6	25.9	68.66%
40	40	6	7.4200	0.1875	552													552	6.0000	7.2070	65.00	42.70	39.4	30.1	76.25%
45	45	6	7.5975	0.1875	629													629	6.5000	7.3668	65.00	44.69	41.3	34.3	83.10%
50	50	6	7.7750	0.1875	708													708	7.0000	7.5265	65.00	46.73	43.2	38.5	89.28%
55	55	6	7.9525	0.1875	789													789	7.5000	7.6863	65.00	48.81	45.1	42.8	94.85%
60	40	6	10.8000	0.1875	695							1.5	21.5000	10.2450	12.8250	0.1875	516	1210	8.0000	11.8650	65.00	119.40	110.3	47.0	42.61%
65	47.5	6	11.7000	0.1875	870							1.75	19.2500	11.1150	13.4250	0.1875	492	1362	8.5000	12.4050	65.00	130.79	120.8	51.2	42.40%
70	47.5	6	11.7000	0.1875	870							1.75	24.2500	11.1150	14.0250	0.1875	635	1505	9.0000	12.9450	65.00	142.70	131.8	55.5	42.07%
75	47.5	6	11.7000	0.1875	870							1.75	29.2500	11.1150	14.6250	0.1875	784	1654	9.5000	13.4850	65.00	155.13	143.3	59.7	41.65%
80	47.5	6	11.7000	0.1875	870							1.75	34.2500	11.1150	15.2250	0.1875	940	1810	10.0000	14.0250	65.00	168.08	155.3	63.9	41.16%
85	47.5	6	11.7000	0.1875	870							1.75	39.2500	11.1150	15.8250	0.1875	1102	1972	10.5000	14.5650	65.00	181.54	167.7	68.2	40.63%
90	47.5	6	11.7000	0.1875	870							1.75	44.2500	11.1150	16.4250	0.1875	1271	2141	11.0000	15.1050	65.00	195.53	180.6	72.4	40.07%
95	47.5	6	11.7000	0.1875	870							1.75	49.2500	11.1150	17.0250	0.1875	1446	2315	11.5000	15.6450	65.00	210.03	194.0	76.6	39.48%
100	47.5	6	11.7000	0.1875	870							1.75	54.2500	11.1150	17.6250	0.1875	1627	2497	12.0000	16.1850	65.00	225.05	207.9	80.8	38.88%
105	52	6	12.2400	0.1875	982							1.75	54.7500	11.6550	18.2250	0.1875	1708	2690	12.5000	16.7250	64.47	238.62	220.5	85.1	38.59%
110	47.5	6	11.7000	0.1875	870	1.75	35.0000	11.1150	15.3150	0.1875	964	2.25	31.5000	14.6700	18.4500	0.1875	1090	2924	13.0000	16.8900	64.16	242.26	223.8	89.3	39.90%
115	47.5	6	11.7000	0.1875	870	1.75	35.0000	11.1150	15.3150	0.1875	964	2.25	36.5000	14.6700	19.0500	0.1875	1287	3121	13.5000	17.4300	63.15	254.20	234.8	93.5	39.83%
120	47.5	6	11.7000	0.1875	870	1.75	35.0000	11.1150	15.3150	0.1875	964	2.25	41.5000	14.6700	19.6500	0.1875	1489	3323	14.0000	17.9700	62.13	266.12	245.9	97.8	39.76%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	6.9905	65.00	37.0	24.3	65.78%	6.1775	65.00	28.6	8	26.30%										
35	2.4500	7.1555	65.00	38.9	28.7	73.89%	6.1775	65.00	28.6	8	26.30%										
40	2.8000	7.3206	65.00	40.8	33.1	81.20%	6.1775	65.00	28.6	8	26.30%										
45	3.1500	7.4857	65.00	42.7	37.5	87.76%	6.1775	65.00	28.6	8	26.30%										
50	3.5000	7.6508	65.00	44.7	41.8	93.66%	6.1775	65.00	28.6	8	26.30%										
55	3.8500	7.8158	65.00	46.7	46.2	98.97%	6.1775	65.00	28.6	8	26.30%										
60	4.2000	12.3210	65.00	119.2	50.6	42.44%	6.6000	65.00	32.8	8	22.90%	10.6200	65.00	87.9	34	39.04%	6.6000	65.00	0.0	0	6.60%
65	4.5500	12.8790	65.00	130.5	54.9	42.11%	6.6000	65.00	32.8	8	22.90%	11.4900	65.00	103.3	41	39.82%	6.6000	65.00	0.0	0	6.60%
70	4.9000	13.4370	65.00	142.3	59.3	41.69%	6.6000	65.00	32.8	8	22.90%	11.4900	65.00	103.3	41	39.82%	6.6000	65.00	0.0	0	6.60%
75	5.2500	13.9950	65.00	154.6	63.7	41.19%	6.6000	65.00	32.8	8	22.90%	11.4900	65.00	103.3	41	39.82%	6.6000	65.00	0.0	0	6.60%
80	5.6000	14.5530	65.00	167.4	68.1	40.64%	6.6000	65.00	32.8	8	22.90%	11.4900	65.00	103.3	41	39.82%	6.6000	65.00	0.0	0	6.60%
85	5.9500	15.1110	65.00	180.8	72.4	40.06%	6.6000	65.00	32.8	8	22.90%	11.4900	65.00	103.3	41	39.82%	6.6000	65.00	0.0	0	6.60%
90	6.3000	15.6690	65.00	194.6	76.8	39.45%	6.6000	65.00	32.8	8	22.90%	11.4900	65.00	103.3	41	39.82%	6.6000	65.00	0.0	0	6.60%
95	6.6500	16.2270	65.00	209.0	81.2	38.83%	6.6000	65.00	32.8	8	22.90%	11.4900	65.00	103.3	41	39.82%	6.6000	65.00	0.0	0	6.60%
100	7.0000	16.7850	64.35	221.7	85.5	38.59%	6.6000	65.00	32.8	8	22.90%	11.4900	65.00	103.3	41	39.82%	6.6000	65.00	0.0	0	6.60%
105	7.3500	17.3430	63.31	233.1	89.9	38.58%	6.6000	65.00	32.8	8	22.90%	12.0300	65.00	113.5	45	39.97%	6.6000	65.00	0.0	0	6.60%
110	7.7000	17.9260	62.97	236.8	94.3	39.81%	6.6000	65.00	32.8	8	22.90%	11.4900	65.00	103.3	41	39.82%	15.0450	65.00	179.2	72	40.13%
115	8.0500	18.0840	61.92	248.2	98.7	39.75%	6.6000	65.00	32.8	8	22.90%	11.4900	65.00	103.3	41	39.82%	15.0450	65.00	179.2	72	40.13%
120	8.4000	18.6420	60.87	259.5	103.0	39.70%	6.6000	65.00	32.8	8	22.90%	11.4900	65.00	103.3	41	39.82%	15.0450	65.00	179.2	72	40.13%

* The weights shown are for bare shafts only, do not include cap, bearing plate, groundsleeve, other attachments, hardware, galvanizing, and corrotcote.



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WPE Class: C5 1200 Lb Load Max. One Section Length = 53 ft
Top Dia. (in) = 6 Max. Top Section Length = 47.5 ft
One Section Taper = 0.0557 Top Section Length for 55' - 60' = 40 ft
Multi-Section Taper = 0.1200 Top Section Thk. = 0.1875 in
Taper for height > 120' = 0.1200
Shape (sides) = 8 Max. Mid Section Length = 35 ft
Slip joint Factor = 1.65 Mid Section Thk. = 0.1875 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

C5

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	6	7.6710	0.1875	422													422	5.0000	7.3925	65.00	45.01	41.6	27.6	66.37%
35	35	6	7.9495	0.1875	502													502	5.5000	7.6432	65.00	48.24	44.6	33.0	74.04%
40	40	6	8.2280	0.1875	586													586	6.0000	7.8938	65.00	51.58	47.7	38.4	80.58%
45	45	6	8.5065	0.1875	672													672	6.5000	8.1445	65.00	55.03	50.8	43.8	86.15%
50	50	6	8.7850	0.1875	762													762	7.0000	8.3951	65.00	58.59	54.1	49.2	90.88%
55	55	6	9.0635	0.1875	854													854	7.5000	8.6458	65.00	62.27	57.5	54.6	94.91%
60	40	6	10.8000	0.1875	695	1.5	21.5000	10.2450	12.8250	0.1875	516	1.5	21.5000	10.2450	12.8250	0.1875	516	1210	8.0000	11.8650	65.00	119.40	110.3	60.0	54.39%
65	47.5	6	11.7000	0.1875	870	1.75	19.2500	11.1150	13.4250	0.1875	492	1.75	19.2500	11.1150	13.4250	0.1875	492	1362	8.5000	12.4050	65.00	130.79	120.8	65.4	54.12%
70	47.5	6	11.7000	0.1875	870	1.75	24.2500	11.1150	14.0250	0.1875	635	1.75	24.2500	11.1150	14.0250	0.1875	635	1505	9.0000	12.9450	65.00	142.70	131.8	70.8	53.70%
75	47.5	6	11.7000	0.1875	870	1.75	29.2500	11.1150	14.6250	0.1875	784	1.75	29.2500	11.1150	14.6250	0.1875	784	1654	9.5000	13.4850	65.00	155.13	143.3	76.2	53.17%
80	47.5	6	11.7000	0.1875	870	1.75	34.2500	11.1150	15.2250	0.1875	940	1.75	34.2500	11.1150	15.2250	0.1875	940	1810	10.0000	14.0250	65.00	168.08	155.3	81.6	52.55%
85	47.5	6	11.7000	0.1875	870	1.75	39.2500	11.1150	15.8250	0.1875	1102	1.75	39.2500	11.1150	15.8250	0.1875	1102	1972	10.5000	14.5650	65.00	181.54	167.7	87.0	51.87%
90	47.5	6	11.7000	0.1875	870	1.75	44.2500	11.1150	16.4250	0.1875	1271	1.75	44.2500	11.1150	16.4250	0.1875	1271	2141	11.0000	15.1050	65.00	195.53	180.6	92.4	51.15%
95	47.5	6	11.7000	0.1875	870	1.75	49.2500	11.1150	17.0250	0.1875	1446	1.75	49.2500	11.1150	17.0250	0.1875	1446	2315	11.5000	15.6450	65.00	210.03	194.0	97.8	50.40%
100	47.5	6	11.7000	0.1875	870	1.75	54.2500	11.1150	17.6250	0.1875	1627	1.75	54.2500	11.1150	17.6250	0.1875	1627	2497	12.0000	16.1850	65.00	225.05	207.9	103.2	49.63%
105	52	6	12.2400	0.1875	982	1.75	59.2500	11.1150	18.2250	0.1875	1708	1.75	54.7500	11.6550	18.2250	0.1875	1708	2690	12.5000	16.7250	64.47	238.62	220.5	108.6	49.26%
110	47.5	6	11.7000	0.1875	870	1.75	35.0000	11.1150	15.3150	0.1875	964	2.25	31.5000	14.6700	18.4500	0.1875	1090	2924	13.0000	16.8900	64.16	242.26	223.8	114.0	50.93%
115	47.5	6	11.7000	0.1875	870	1.75	35.0000	11.1150	15.3150	0.1875	964	2.25	36.5000	14.6700	19.0500	0.1875	1287	3121	13.5000	17.4300	63.15	254.20	234.8	119.4	50.84%
120	47.5	6	11.7000	0.1875	870	1.75	35.0000	11.1150	15.3150	0.1875	964	2.25	41.5000	14.6700	19.6500	0.1875	1489	3323	14.0000	17.9700	62.13	266.12	245.9	124.8	50.76%

Height	Fixity Point						5 Ft from Top						Top Slip-Joint						Bot Slip-Joint					
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage			
30	2.1000	7.5540	65.00	43.5	31.1	71.45%	6.2785	65.00	29.6	10	32.45%													
35	2.4500	7.8130	65.00	46.6	36.7	78.59%	6.2785	65.00	29.6	10	32.45%													
40	2.8000	8.0720	65.00	49.9	42.2	84.63%	6.2785	65.00	29.6	10	32.45%													
45	3.1500	8.3310	65.00	53.3	47.8	89.75%	6.2785	65.00	29.6	10	32.45%													
50	3.5000	8.5901	65.00	56.8	53.4	94.07%	6.2785	65.00	29.6	10	32.45%													
55	3.8500	8.8491	65.00	60.4	59.0	97.71%	6.2785	65.00	29.6	10	32.45%													
60	4.2000	12.3210	65.00	119.2	64.6	54.17%	6.6000	65.00	32.8	10	29.23%	10.6200	65.00	87.9	44	49.84%	10.6200	65.00	87.9	44	49.84%			
65	4.5500	12.8790	65.00	130.5	70.1	53.76%	6.6000	65.00	32.8	10	29.23%	11.4900	65.00	103.3	53	50.83%	10.6200	65.00	87.9	44	49.84%			
70	4.9000	13.4370	65.00	142.3	75.7	53.22%	6.6000	65.00	32.8	10	29.23%	11.4900	65.00	103.3	53	50.83%	10.6200	65.00	87.9	44	49.84%			
75	5.2500	13.9950	65.00	154.6	81.3	52.59%	6.6000	65.00	32.8	10	29.23%	11.4900	65.00	103.3	53	50.83%	10.6200	65.00	87.9	44	49.84%			
80	5.6000	14.5530	65.00	167.4	86.9	51.89%	6.6000	65.00	32.8	10	29.23%	11.4900	65.00	103.3	53	50.83%	10.6200	65.00	87.9	44	49.84%			
85	5.9500	15.1110	65.00	180.8	92.5	51.14%	6.6000	65.00	32.8	10	29.23%	11.4900	65.00	103.3	53	50.83%	10.6200	65.00	87.9	44	49.84%			
90	6.3000	15.6690	65.00	194.6	98.0	50.37%	6.6000	65.00	32.8	10	29.23%	11.4900	65.00	103.3	53	50.83%	10.6200	65.00	87.9	44	49.84%			
95	6.6500	16.2270	65.00	209.0	103.6	49.57%	6.6000	65.00	32.8	10	29.23%	11.4900	65.00	103.3	53	50.83%	9.9500	65.00	9.9	50	50.83%			
100	7.0000	16.7850	64.35	221.7	109.2	49.26%	6.6000	65.00	32.8	10	29.23%	11.4900	65.00	103.3	53	50.83%	9.9500	65.00	9.9	50	50.83%			
105	7.3500	17.3430	63.31	233.1	114.8	49.25%	6.6000	65.00	32.8	10	29.23%	12.0300	65.00	113.5	58	51.02%	9.9500	65.00	9.9	50	50.83%			
110	7.7000	17.5260	62.97	236.8	120.4	50.83%	6.6000	65.00	32.8	10	29.23%	11.4900	65.00	103.3	53	50.83%	15.0450	65.00	179.2	92	51.23%			
115	8.0500	18.0840	61.92	248.2	125.9	50.74%	6.6000	65.00	32.8	10	29.23%	11.4900	65.00	103.3	53	50.83%	15.0450	65.00	179.2	92	51.23%			
120	8.4000	18.6420	60.87	259.5	131.5	50.68%	6.6000	65.00	32.8	10	29.23%	11.4900	65.00	103.3	53	50.83%	15.0450	65.00	179.2	92	51.23%			

* The weights shown are for bare shafts only, do not include cap, bearing plate, groundsleeve, other attachments, hardware, galvanizing, and corrotcote.



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WPE Class: C4 1500 Lb Load Max. One Section Length = 55 ft
Top Dia. (in) = 6
One Section Taper = 0.0765
Multi-Section Taper = 0.1200
Taper for height > 120' = 0.1200
Shape (sides) = 8
Slip joint Factor = 1.65
Max. Top Section Length = 47.5 ft
Top Section Length for 55' - 60' = 40 ft
Top Section Thk. = 0.1875 in
Max. Mid Section Length = 35 ft
Mid Section Thk. = 0.1875 in
Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.1875 in
Bot Section Thk. (if 3 sections) = 0.1875 in
Bot Section Thk. (Height > 120') = 0.1875 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

C4

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	6	8.2950	0.1875	441													441	5.0000	7.9125	65.00	51.83	47.9	34.5	72.04%
35	35	6	8.6775	0.1875	529													529	5.5000	8.2568	65.00	56.61	52.3	41.3	78.86%
40	40	6	9.0600	0.1875	621													621	6.0000	8.6010	65.00	61.61	56.9	48.0	84.33%
45	45	6	9.4425	0.1875	717													717	6.5000	8.9453	65.00	66.81	61.7	54.8	88.70%
50	50	6	9.8250	0.1875	817													817	7.0000	9.2895	65.00	72.22	66.7	61.5	92.17%
55	55	6	10.2075	0.1875	921													921	7.5000	9.6338	65.00	77.84	71.9	68.3	94.90%
60	40	6	10.8000	0.1875	695							1.5	21.5000	10.2450	12.8250	0.1875	516	1210	8.0000	11.8650	65.00	119.40	110.3	75.0	67.99%
65	47.5	6	11.7000	0.1875	870							1.75	19.2500	11.1150	13.4250	0.1875	492	1362	8.5000	12.4050	65.00	130.79	120.8	81.8	67.65%
70	47.5	6	11.7000	0.1875	870							1.75	24.2500	11.1150	14.0250	0.1875	635	1505	9.0000	12.9450	65.00	142.70	131.8	88.5	67.13%
75	47.5	6	11.7000	0.1875	870							1.75	29.2500	11.1150	14.6250	0.1875	784	1654	9.5000	13.4850	65.00	155.13	143.3	95.3	66.46%
80	47.5	6	11.7000	0.1875	870							1.75	34.2500	11.1150	15.2250	0.1875	940	1810	10.0000	14.0250	65.00	168.08	155.3	102.0	65.69%
85	47.5	6	11.7000	0.1875	870							1.75	39.2500	11.1150	15.8250	0.1875	1102	1972	10.5000	14.5650	65.00	181.54	167.7	108.8	64.84%
90	47.5	6	11.7000	0.1875	870							1.75	44.2500	11.1150	16.4250	0.1875	1271	2141	11.0000	15.1050	65.00	195.53	180.6	115.5	63.94%
95	47.5	6	11.7000	0.1875	870							1.75	49.2500	11.1150	17.0250	0.1875	1446	2315	11.5000	15.6450	65.00	210.03	194.0	122.3	63.00%
100	47.5	6	11.7000	0.1875	870							1.75	54.2500	11.1150	17.6250	0.1875	1627	2497	12.0000	16.1850	65.00	225.05	207.9	129.0	62.04%
105	52	6	12.2400	0.1875	982							1.75	54.7500	11.6550	18.2250	0.1875	1708	2690	12.5000	16.7250	64.47	238.62	220.5	135.8	61.58%
110	47.5	6	11.7000	0.1875	870	1.75	35.0000	11.1150	15.3150	0.1875	964	2.25	31.5000	14.6700	18.4500	0.1875	1090	2924	13.0000	16.8900	64.16	242.26	223.8	142.5	63.67%
115	47.5	6	11.7000	0.1875	870	1.75	35.0000	11.1150	15.3150	0.1875	964	2.25	36.5000	14.6700	19.0500	0.1875	1287	3121	13.5000	17.4300	63.15	254.20	234.8	149.3	63.55%
120	47.5	6	11.7000	0.1875	870	1.75	35.0000	11.1150	15.3150	0.1875	964	2.25	41.5000	14.6700	19.6500	0.1875	1489	3323	14.0000	17.9700	62.13	266.12	245.9	156.0	63.45%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	8.1344	65.00	50.7	38.9	76.61%	6.3825	65.00	30.6	12	39.19%										
35	2.4500	8.4901	65.00	55.4	45.8	82.70%	6.3825	65.00	30.6	12	39.19%										
40	2.8000	8.8458	65.00	60.3	52.8	87.54%	6.3825	65.00	30.6	12	39.19%										
45	3.1500	9.2015	65.00	65.4	59.8	91.36%	6.3825	65.00	30.6	12	39.19%										
50	3.5000	9.5573	65.00	70.7	66.8	94.35%	6.3825	65.00	30.6	12	39.19%										
55	3.8500	9.9130	65.00	76.3	73.7	96.66%	6.3825	65.00	30.6	12	39.19%										
60	4.2000	12.3210	65.00	119.2	80.7	67.72%	6.6000	65.00	32.8	12	36.54%	10.6200	65.00	87.9	55	62.30%	0.0000	0.00	0.0	0	0.00%
65	4.5500	12.8790	65.00	130.5	87.7	67.20%	6.6000	65.00	32.8	12	36.54%	11.4900	65.00	103.3	66	63.53%	0.0000	0.00	0.0	0	0.00%
70	4.9000	13.4370	65.00	142.3	94.7	66.52%	6.6000	65.00	32.8	12	36.54%	11.4900	65.00	103.3	66	63.53%	0.0000	0.00	0.0	0	0.00%
75	5.2500	13.9950	65.00	154.6	101.6	65.73%	6.6000	65.00	32.8	12	36.54%	11.4900	65.00	103.3	66	63.53%	0.0000	0.00	0.0	0	0.00%
80	5.6000	14.5530	65.00	167.4	108.6	64.86%	6.6000	65.00	32.8	12	36.54%	11.4900	65.00	103.3	66	63.53%	0.0000	0.00	0.0	0	0.00%
85	5.9500	15.1110	65.00	180.8	115.6	63.93%	6.6000	65.00	32.8	12	36.54%	11.4900	65.00	103.3	66	63.53%	0.0000	0.00	0.0	0	0.00%
90	6.3000	15.6690	65.00	194.6	122.6	62.96%	6.6000	65.00	32.8	12	36.54%	11.4900	65.00	103.3	66	63.53%	0.0000	0.00	0.0	0	0.00%
95	6.6500	16.2270	65.00	209.0	129.5	61.97%	6.6000	65.00	32.8	12	36.54%	11.4900	65.00	103.3	66	63.53%	0.0000	0.00	0.0	0	0.00%
100	7.0000	16.7850	64.35	221.7	136.5	61.58%	6.6000	65.00	32.8	12	36.54%	11.4900	65.00	103.3	66	63.53%	0.0000	0.00	0.0	0	0.00%
105	7.3500	17.3430	63.31	233.1	143.5	61.56%	6.6000	65.00	32.8	12	36.54%	12.0300	65.00	113.5	72	63.78%	0.0000	0.00	0.0	0	0.00%
110	7.7000	17.5260	62.97	236.8	150.5	63.53%	6.6000	65.00	32.8	12	36.54%	11.4900	65.00	103.3	66	63.53%	15.0450	65.00	179.2	115	64.04%
115	8.0500	18.0840	61.92	248.2	157.4	63.43%	6.6000	65.00	32.8	12	36.54%	11.4900	65.00	103.3	66	63.53%	15.0450	65.00	179.2	115	64.04%
120	8.4000	18.6420	60.87	259.5	164.4	63.35%	6.6000	65.00	32.8	12	36.54%	11.4900	65.00	103.3	66	63.53%	15.0450	65.00	179.2	115	64.04%

* The weights shown are for bare shafts only, do not include cap, bearing plate, groundsleeve, other attachments, hardware, galvanizing, and corrotcote.



8653 E. Highway 67
Alvarado, TX 76009
Office: 817-852-1700
www.SabreTubularStructures.com

WPE Class: C3 1875 Lb Load Max. One Section Length = 55 ft
Top Dia. (in) = 6
One Section Taper = 0.1000
Multi-Section Taper = 0.1200
Taper for height > 120' = 0.1200
Shape (sides) = 8
Slip joint Factor = 1.65
Max. Top Section Length = 47.5 ft
Top Section Length for 55' - 60' = 40 ft
Top Section Thk. = 0.1875 in
Max. Mid Section Length = 35 ft
Mid Section Thk. = 0.1875 in
Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.1875 in
Bot Section Thk. (if 3 sections) = 0.1875 in
Bot Section Thk. (Height > 120') = 0.1875 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

C3

Height	Top Section					Middle Section						Bottom Section						Total	Ground Line						
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	6	9.0000	0.1875	464													464	5.0000	8.5000	65.00	60.12	55.5	43.1	77.64%
35	35	6	9.5000	0.1875	560													560	5.5000	8.9500	65.00	66.88	61.8	51.6	83.45%
40	40	6	10.0000	0.1875	661													661	6.0000	9.4000	65.00	74.00	68.4	60.0	87.76%
45	45	6	10.5000	0.1875	767													767	6.5000	9.8500	65.00	81.48	75.3	68.4	90.91%
50	50	6	11.0000	0.1875	879													879	7.0000	10.3000	65.00	89.33	82.5	76.9	93.15%
55	55	6	11.5000	0.1875	996													996	7.5000	10.7500	65.00	97.53	90.1	85.3	94.68%
60	40	6	10.8000	0.1875	695	0	11.2323	10.2023	10.2323	0	1.5	21.5000	10.2450	12.8250	0.1875	516	1210	8.0000	11.8650	65.00	119.40	110.3	93.8	84.98%	
65	47.5	6	11.7000	0.1875	870	0	10.2626	10.0000	10.2626	0	1.75	19.2500	11.1150	13.4250	0.1875	492	1362	8.5000	12.4050	65.00	130.79	120.8	102.2	84.57%	
70	47.5	6	11.7000	0.1875	870	0	10.2626	10.0000	10.2626	0	1.75	24.2500	11.1150	14.0250	0.1875	635	1505	9.0000	12.9450	65.00	142.70	131.8	110.6	83.91%	
75	47.5	6	11.7000	0.1875	870	0	10.2626	10.0000	10.2626	0	1.75	29.2500	11.1150	14.6250	0.1875	784	1654	9.5000	13.4850	65.00	155.13	143.3	119.1	83.07%	
80	47.5	6	11.7000	0.1875	870	0	10.2626	10.0000	10.2626	0	1.75	34.2500	11.1150	15.2250	0.1875	940	1810	10.0000	14.0250	65.00	168.08	155.3	127.5	82.11%	
85	47.5	6	11.7000	0.1875	870	0	10.2626	10.0000	10.2626	0	1.75	39.2500	11.1150	15.8250	0.1875	1102	1972	10.5000	14.5650	65.00	181.54	167.7	135.9	81.05%	
90	47.5	6	11.7000	0.1875	870	0	10.2626	10.0000	10.2626	0	1.75	44.2500	11.1150	16.4250	0.1875	1271	2141	11.0000	15.1050	65.00	195.53	180.6	144.4	79.92%	
95	47.5	6	11.7000	0.1875	870	0	10.2626	10.0000	10.2626	0	1.75	49.2500	11.1150	17.0250	0.1875	1446	2315	11.5000	15.6450	65.00	210.03	194.0	152.8	78.75%	
100	47.5	6	11.7000	0.1875	870	0	10.2626	10.0000	10.2626	0	1.75	54.2500	11.1150	17.6250	0.1875	1627	2497	12.0000	16.1850	65.00	225.05	207.9	161.3	77.55%	
105	52	6	12.2400	0.1875	982	0	10.2626	10.0000	10.2626	0	1.75	54.7500	11.6550	18.2250	0.1875	1708	2690	12.5000	16.7250	64.47	238.62	220.5	169.7	76.97%	
110	47.5	6	11.7000	0.1875	870	1.75	35.0000	11.1150	15.3150	0.1875	964	2.25	31.5000	14.6700	18.4500	0.1875	1090	2924	13.0000	16.8900	64.16	242.26	223.8	178.1	79.58%
115	47.5	6	11.7000	0.1875	870	1.75	35.0000	11.1150	15.3150	0.1875	964	2.25	36.5000	14.6700	19.0500	0.1875	1287	3121	13.5000	17.4300	63.15	254.20	234.8	186.6	79.44%
120	47.5	6	11.7000	0.1875	870	1.75	35.0000	11.1150	15.3150	0.1875	964	2.25	41.5000	14.6700	19.6500	0.1875	1489	3323	14.0000	17.9700	62.13	266.12	245.9	195.0	79.31%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	8.7900	65.00	59.5	48.6	81.58%	6.5000	65.00	31.8	15	47.16%										
35	2.4500	9.2550	65.00	66.2	57.3	86.51%	6.5000	65.00	31.8	15	47.16%										
40	2.8000	9.7200	65.00	73.2	66.0	90.10%	6.5000	65.00	31.8	15	47.16%										
45	3.1500	10.1850	65.00	80.6	74.7	92.65%	6.5000	65.00	31.8	15	47.16%										
50	3.5000	10.6500	65.00	88.4	83.4	94.40%	6.5000	65.00	31.8	15	47.16%										
55	3.8500	11.1150	65.00	96.5	92.2	95.50%	6.5000	65.00	31.8	15	47.16%										
60	4.2000	12.3210	65.00	119.2	100.9	84.65%	6.6000	65.00	32.8	15	45.68%	10.6200	65.00	87.9	68	77.88%	10.6000	65.00	87.9	68	77.88%
65	4.5500	12.8790	65.00	130.5	109.6	84.00%	6.6000	65.00	32.8	15	45.68%	11.4900	65.00	103.3	82	79.42%	10.6000	65.00	87.9	68	77.88%
70	4.9000	13.4370	65.00	142.3	118.3	83.15%	6.6000	65.00	32.8	15	45.68%	11.4900	65.00	103.3	82	79.42%	10.6000	65.00	87.9	68	77.88%
75	5.2500	13.9950	65.00	154.6	127.0	82.16%	6.6000	65.00	32.8	15	45.68%	11.4900	65.00	103.3	82	79.42%	10.6000	65.00	87.9	68	77.88%
80	5.6000	14.5530	65.00	167.4	135.8	81.07%	6.6000	65.00	32.8	15	45.68%	11.4900	65.00	103.3	82	79.42%	10.6000	65.00	87.9	68	77.88%
85	5.9500	15.1110	65.00	180.8	144.5	79.91%	6.6000	65.00	32.8	15	45.68%	11.4900	65.00	103.3	82	79.42%	10.6000	65.00	87.9	68	77.88%
90	6.3000	15.6690	65.00	194.6	153.2	78.70%	6.6000	65.00	32.8	15	45.68%	11.4900	65.00	103.3	82	79.42%	10.6000	65.00	87.9	68	77.88%
95	6.6500	16.2270	65.00	209.0	161.9	77.46%	6.6000	65.00	32.8	15	45.68%	11.4900	65.00	103.3	82	79.42%	10.6000	65.00	87.9	68	77.88%
100	7.0000	16.7850	64.35	221.7	170.6	76.97%	6.6000	65.00	32.8	15	45.68%	11.4900	65.00	103.3	82	79.42%	10.6000	65.00	87.9	68	77.88%
105	7.3500	17.3430	63.31	233.1	179.3	76.95%	6.6000	65.00	32.8	15	45.68%	12.0300	65.00	113.5	90	79.72%	10.6000	65.00	87.9	68	77.88%
110	7.7000	17.5260	62.97	236.8	188.1	79.42%	6.6000	65.00	32.8	15	45.68%	11.4900	65.00	103.3	82	79.42%	15.0450	65.00	179.2	143	80.05%
115	8.0500	18.0840	61.92	248.2	196.8	79.29%	6.6000	65.00	32.8	15	45.68%	11.4900	65.00	103.3	82	79.42%	15.0450	65.00	179.2	143	80.05%
120	8.4000	18.6420	60.87	259.5	205.5	79.18%	6.6000	65.00	32.8	15	45.68%	11.4900	65.00	103.3	82	79.42%	15.0450	65.00	179.2	143	80.05%

* The weights shown are for bare shafts only, do not include cap, bearing plate, groundsleeve, other attachments, hardware, galvanizing, and corrotcote.



8653 E. Highway 67
Alvarado, TX 76009
Office: 817-852-1700
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WPE Class: C2 2325 Lb Load Max. One Section Length = 53 ft
Top Dia. (in) = 6.5 Max. Top Section Length = 47.5 ft
One Section Taper = 0.1141 Top Section Length for 55' - 60' = 40 ft
Multi-Section Taper = 0.1225 Top Section Thk. = 0.1875 in
Taper for height > 120' = 0.1225
Shape (sides) = 8
Slip joint Factor = 1.65
Max. Mid Section Length = 35 ft
Mid Section Thk. = 0.1875 in
Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.1875 in
Bot Section Thk. (if 3 sections) = 0.1875 in
Bot Section Thk. (Height > 120') = 0.1875 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

C2

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	6.5	9.9230	0.1875	509													509	5.0000	9.3525	65.00	73.23	67.7	53.5	79.04%
35	35	6.5	10.4935	0.1875	615													615	5.5000	9.8660	65.00	81.76	75.5	63.9	84.65%
40	40	6.5	11.0640	0.1875	727													727	6.0000	10.3794	65.00	90.75	83.8	74.4	88.74%
45	45	6.5	11.6345	0.1875	845													845	6.5000	10.8929	65.00	100.21	92.6	84.9	91.66%
50	50	6.5	12.2050	0.1875	969													969	7.0000	11.4063	65.00	110.14	101.8	95.3	93.68%
55	55	6.5	12.7755	0.1875	1099													1099	7.5000	11.9198	65.00	120.54	111.4	105.8	95.00%
60	40	6.5	11.4000	0.1875	741							1.75	21.7500	10.8106	13.4750	0.1875	550	1291	8.0000	12.4950	65.00	132.74	122.6	116.3	94.79%
65	47.5	6.5	12.3188	0.1875	926							1.75	19.2500	11.7294	14.0875	0.1875	518	1444	8.5000	13.0463	65.00	144.99	134.0	126.7	94.59%
70	47.5	6.5	12.3188	0.1875	926							1.75	24.2500	11.7294	14.7000	0.1875	668	1594	9.0000	13.5975	65.00	157.78	145.8	137.2	94.10%
75	47.5	6.5	12.3188	0.1875	926							1.75	29.2500	11.7294	15.3125	0.1875	825	1751	9.5000	14.1488	65.00	171.12	158.1	147.6	93.39%
80	47.5	6.5	12.3188	0.1875	926							1.75	34.2500	11.7294	15.9250	0.1875	988	1914	10.0000	14.7000	65.00	184.99	170.9	158.1	92.51%
85	47.5	6.5	12.3188	0.1875	926							1.75	39.2500	11.7294	16.5375	0.1875	1157	2083	10.5000	15.2513	65.00	199.40	184.2	168.6	91.50%
90	47.5	6.5	12.3188	0.1875	926							1.75	44.2500	11.7294	17.1500	0.1875	1333	2259	11.0000	15.8025	65.00	214.36	198.0	179.0	90.40%
95	47.5	6.5	12.3188	0.1875	926							1.75	49.2500	11.7294	17.7625	0.1875	1516	2442	11.5000	16.3538	65.00	229.85	212.4	189.5	89.23%
100	47.5	6.5	12.3188	0.1875	926							1.75	54.2500	11.7294	18.3750	0.1875	1705	2631	12.0000	16.9050	64.13	242.59	224.1	200.0	89.21%
105	52	6.5	12.8700	0.1875	1044							1.75	54.7500	12.2806	18.9875	0.1875	1788	2832	12.5000	17.4563	63.10	254.78	235.4	210.4	89.39%
110	47.5	6.5	12.3188	0.1875	926	1.75	35.0000	11.7294	16.0169	0.1875	1013	2.25	31.5000	15.3663	19.2250	0.1875	1139	3078	13.0000	17.6325	62.77	258.67	239.0	220.9	92.42%
115	47.5	6.5	12.3188	0.1875	926	1.75	35.0000	11.7294	16.0169	0.1875	1013	2.25	36.5000	15.3663	19.8375	0.1875	1344	3283	13.5000	18.1838	61.73	270.83	250.2	231.3	92.46%
120	47.5	6.5	12.3188	0.1875	926	1.75	35.0000	11.7294	16.0169	0.1875	1013	2.25	41.5000	15.3663	20.4500	0.1875	1555	3494	14.0000	18.7350	60.70	282.95	261.4	241.8	92.50%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	9.6834	65.00	72.7	60.2	82.85%	7.0705	65.00	37.9	19	49.07%										
35	2.4500	10.2140	65.00	81.1	71.0	87.57%	7.0705	65.00	37.9	19	49.07%										
40	2.8000	10.7445	65.00	90.0	81.8	90.92%	7.0705	65.00	37.9	19	49.07%										
45	3.1500	11.2751	65.00	99.4	92.7	93.24%	7.0705	65.00	37.9	19	49.07%										
50	3.5000	11.8057	65.00	109.2	103.5	94.76%	7.0705	65.00	37.9	19	49.07%										
55	3.8500	12.3362	65.00	119.5	114.3	95.65%	7.0705	65.00	37.9	19	49.07%										
60	4.2000	12.9605	65.00	132.2	125.1	94.64%	7.1125	65.00	38.4	19	48.46%	11.1856	65.00	97.8	84	86.21%	11.1856	65.00	97.8	84	86.21%
65	4.5500	13.5301	65.00	144.3	135.9	94.17%	7.1125	65.00	38.4	19	48.46%	12.1044	65.00	114.9	102	88.51%	12.1044	65.00	114.9	102	88.51%
70	4.9000	14.0998	65.00	157.0	146.7	93.46%	7.1125	65.00	38.4	19	48.46%	12.1044	65.00	114.9	102	88.51%	12.1044	65.00	114.9	102	88.51%
75	5.2500	14.6694	65.00	170.2	157.5	92.56%	7.1125	65.00	38.4	19	48.46%	12.1044	65.00	114.9	102	88.51%	12.1044	65.00	114.9	102	88.51%
80	5.6000	15.2390	65.00	183.9	168.3	91.52%	7.1125	65.00	38.4	19	48.46%	12.1044	65.00	114.9	102	88.51%	12.1044	65.00	114.9	102	88.51%
85	5.9500	15.8086	65.00	198.2	179.1	90.39%	7.1125	65.00	38.4	19	48.46%	12.1044	65.00	114.9	102	88.51%	12.1044	65.00	114.9	102	88.51%
90	6.3000	16.3783	65.00	213.0	190.0	89.18%	7.1125	65.00	38.4	19	48.46%	12.1044	65.00	114.9	102	88.51%	12.1044	65.00	114.9	102	88.51%
95	6.6500	16.9479	64.05	225.0	200.8	89.23%	7.1125	65.00	38.4	19	48.46%	12.1044	65.00	114.9	102	88.51%	12.1044	65.00	114.9	102	88.51%
100	7.0000	17.5175	62.98	236.6	211.6	89.41%	7.1125	65.00	38.4	19	48.46%	12.1044	65.00	114.9	102	88.51%	12.1044	65.00	114.9	102	88.51%
105	7.3500	18.0871	61.91	248.2	222.4	89.58%	7.1125	65.00	38.4	19	48.46%	12.6556	65.00	125.9	112	89.11%	12.6556	65.00	125.9	112	89.11%
110	7.7000	18.2818	61.55	252.2	233.2	92.46%	7.1125	65.00	38.4	19	48.46%	12.1044	65.00	114.9	102	88.51%	15.7413	65.00	196.5	178	90.52%
115	8.0500	18.8514	60.48	263.8	244.0	92.51%	7.1125	65.00	38.4	19	48.46%	12.1044	65.00	114.9	102	88.51%	15.7413	65.00	196.5	178	90.52%
120	8.4000	19.4210	59.41	275.3	254.8	92.58%	7.1125	65.00	38.4	19	48.46%	12.1044	65.00	114.9	102	88.51%	15.7413	65.00	196.5	178	90.52%

* The weights shown are for bare shafts only, do not include cap, bearing plate, groundsleeve, other attachments, hardware, galvanizing, and corrotate.



8653 E. Highway 67
Alvarado, TX 76009
Office: 817-852-1700
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WPE Class: C1 2825 Lb Load Max. One Section Length = 55 ft
Top Dia. (in) = 8
One Section Taper = 0.1080
Multi-Section Taper = 0.1400
Taper for height > 120' = 0.1400
Shape (sides) = 12
Slip joint Factor = 1.65
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

Max. Top Section Length = 47.5 ft
Top Section Length for 55' - 65' = 40 ft
Top Section Thk. = 0.1875 in
Max. Mid Section Length = 35.5 ft
Mid Section Thk. = 0.1875 in

Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.1875 in
Bot Section Thk. (if 3 sections) = 0.1875 in
Bot Section Thk. (Height > 120') = 0.1875 in

Material Grade = 65 ksi
Bend Radius = 4 x thickness

Min. GL to Bot of Slip-Joint = 7 ft

C1

LD1

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F.F Cap	P-P Cap	Req'd Mom.	Usage
30	30	8	11.2400	0.1875	581													581	5.0000	10.7000	65.00	90.64	87.6	65.0	74.21%
35	35	8	11.7800	0.1875	697													697	5.5000	11.1860	65.00	99.30	95.9	77.7	81.00%
40	40	8	12.3200	0.1875	818													818	6.0000	11.6720	65.00	108.34	104.7	90.4	86.38%
45	45	8	12.8600	0.1875	946													946	6.5000	12.1580	65.00	117.78	113.8	103.1	90.63%
50	50	8	13.4000	0.1875	1078													1078	7.0000	12.6440	65.00	127.62	123.3	115.8	93.96%
55	55	8	13.9400	0.1875	1217													1217	7.5000	13.1300	65.00	137.85	133.1	128.5	96.54%
60	40	8	13.6000	0.1875	871	2	22.0000	12.9450	16.0250	0.1875	645	2	22.0000	12.9450	16.0250	0.1875	645	1516	8.0000	14.9050	65.00	178.56	172.5	141.3	81.90%
65	47.5	8	14.6500	0.1875	1085	2	19.5000	13.9950	16.7250	0.1875	607	2	19.5000	13.9950	16.7250	0.1875	607	1692	8.5000	15.5350	65.00	194.27	187.7	154.0	82.05%
70	47.5	8	14.6500	0.1875	1085	2	24.5000	13.9950	17.4250	0.1875	780	2	24.5000	13.9950	17.4250	0.1875	780	1865	9.0000	16.1650	65.00	210.65	203.5	166.7	81.92%
75	47.5	8	14.6500	0.1875	1085	2	29.5000	13.9950	18.1250	0.1875	961	2	29.5000	13.9950	18.1250	0.1875	961	2046	9.5000	16.7950	65.00	227.69	219.9	179.4	81.57%
80	47.5	8	14.6500	0.1875	1085	2	34.5000	13.9950	18.8250	0.1875	1148	2	34.5000	13.9950	18.8250	0.1875	1148	2233	10.0000	17.4250	65.00	245.39	237.0	192.1	81.05%
85	47.5	8	14.6500	0.1875	1085	2	39.5000	13.9950	19.5250	0.1875	1343	2	39.5000	13.9950	19.5250	0.1875	1343	2428	10.5000	18.0550	65.00	263.75	254.8	204.8	80.39%
90	47.5	8	14.6500	0.1875	1085	2	44.5000	13.9950	20.2250	0.1875	1545	2	44.5000	13.9950	20.2250	0.1875	1545	2630	11.0000	18.6850	65.00	282.78	273.1	217.5	79.64%
95	47.5	8	14.6500	0.1875	1085	2	49.5000	13.9950	20.9250	0.1875	1754	2	49.5000	13.9950	20.9250	0.1875	1754	2839	11.5000	19.3150	65.00	302.47	292.2	230.2	78.80%
100	47.5	8	14.6500	0.1875	1085	2	54.5000	13.9950	21.6250	0.1875	1970	2	54.5000	13.9950	21.6250	0.1875	1970	3056	12.0000	19.9450	65.00	322.82	311.8	243.0	77.91%
105	52.5	8	15.3500	0.1875	1237	2.25	54.7500	14.6600	22.3250	0.1875	2056	2.25	54.7500	14.6600	22.3250	0.1875	2056	3293	12.5000	20.5750	65.00	343.84	332.1	255.7	76.98%
110	47.5	8	14.6500	0.1875	1085	2	35.5000	13.9950	18.9650	0.1875	1187	2.75	31.7500	18.2050	22.6500	0.1875	1318	3590	13.0000	20.8300	65.00	352.54	340.5	268.4	78.81%
115	47.5	8	14.6500	0.1875	1085	2	35.5000	13.9950	18.9650	0.1875	1187	2.75	36.7500	18.2050	23.3500	0.1875	1552	3824	13.5000	21.4600	65.00	374.48	361.7	281.1	77.71%
120	47.5	8	14.6500	0.1875	1085	2	35.5000	13.9950	18.9650	0.1875	1187	2.75	41.7500	18.2050	24.0500	0.1875	1794	4065	14.0000	22.0900	65.00	397.09	383.6	293.8	76.60%
125	47.5	8	14.6500	0.1875	1085	2	35.5000	13.9950	18.9650	0.1875	1187	2.75	46.7500	18.2050	24.7500	0.1875	2042	4314	14.5000	22.7200	65.04	420.64	406.3	306.5	75.44%
130	47.5	8	14.6500	0.1875	1085	2	35.5000	13.9950	18.9650	0.1875	1187	2.75	51.7500	18.2050	25.4500	0.1875	2297	4569	15.0000	23.3500	64.16	438.55	423.6	319.2	75.36%
135	47.5	8	14.6500	0.1875	1085	2	39.2500	13.9950	19.4900	0.1875	1333	2.75	53.0000	18.7300	26.1500	0.1875	2419	4838	15.5000	23.9800	63.28	456.47	440.9	331.9	75.28%
140	47.5	8	14.6500	0.1875	1085	2	44.2500	13.9950	20.1900	0.1875	1535	2.75	53.0000	19.4300	26.8500	0.1875	2496	5116	16.0000	24.6100	62.39	474.34	458.2	344.7	75.22%
145	47.5	8	14.6500	0.1875	1085	2	49.5000	13.9950	20.9250	0.1875	1754	3	53.0000	20.1300	27.5500	0.1875	2572	5411	16.5000	25.2400	61.61	492.17	475.4	357.4	75.17%
150	49	8	14.8600	0.1875	1130	2	53.0000	14.2050	21.6250	0.1875	1927	3	53.0000	20.8300	28.2500	0.1875	2648	5705	17.0000	25.8700	60.63	509.90	492.5	370.1	75.14%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	11.0132	65.00	92.9	73.2	78.76%	8.5400	65.00	55.0	23	41.07%										
35	2.4500	11.5154	65.00	101.8	86.3	84.78%	8.5400	65.00	55.0	23	41.07%										
40	2.8000	12.0176	65.00	111.1	99.4	89.51%	8.5400	65.00	55.0	23	41.07%										
45	3.1500	12.5198	65.00	120.8	112.6	93.19%	8.5400	65.00	55.0	23	41.07%										
50	3.5000	13.0220	65.00	130.9	125.7	96.02%	8.5400	65.00	55.0	23	41.07%										
55	3.8500	13.5242	65.00	141.4	138.8	98.17%	8.5400	65.00	55.0	23	41.07%										
60	4.2000	15.4370	65.00	185.2	152.0	82.04%	8.7000	65.00	57.2	23	39.53%	13.3200	65.00	137.1	102	74.17%					
65	4.5500	16.0880	65.00	201.5	165.1	81.95%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%					
70	4.9000	16.7390	65.00	218.4	178.3	81.60%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%					
75	5.2500	17.3900	65.00	236.1	191.4	81.08%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%					
80	5.6000	18.0410	65.00	254.4	204.5	80.41%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%					
85	5.9500	18.6920	65.00	273.4	217.7	79.63%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%					
90	6.3000	19.3430	65.00	293.0	230.8	78.77%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%					
95	6.6500	19.9940	65.00	313.4	243.9	77.84%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%					
100	7.0000	20.6450	65.00	334.4	257.1	76.87%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%					
105	7.3500	21.2960	65.00	356.1	270.2	75.87%	8.7000	65.00	57.2	23	39.53%	15.0350	65.00	175.6	136	77.64%					
110	7.7000	21.5720	65.00	365.6	283.3	77.51%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%	18.5800	65.00	270.0	215	79.77%
115	8.0500	22.2230	65.00	388.3	296.5	76.36%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%	18.5800	65.00	270.0	215	79.77%
120	8.4000	22.8740	64.83	410.5	309.6	75.42%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%	18.5800	65.00	270.0	215	79.77%
125	8.7500	23.5250	63.91	428.4	322.8	75.34%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%	18.5800	65.00	270.0	215	79.77%
130	9.1000	24.1760	63.00	446.3	335.9	75.26%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%	18.5800	65.00	270.0	215	79.77%
135	9.4500	24.8270	62.09	464.1	349.0	75.20%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%	19.1050	65.00	285.8	226	79.09%
140	9.8000	25.4780	61.18	481.9	362.2	75.16%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%	19.8050	65.00	307.4	240	78.11%
145	10.1500	26.1290	60.27	499.5	375.3	75.13%	8.7000	65.00	57.2	23	39.53%	14.3700	65.00	160.1	123	76.76%	20.5050	65.00	329.8	254	77.08%
150	10.5000	26.7800	59.35	517.1	388.4	75.12%	8.7000	65.00	57.2	23	39.53%	14.5800	65.00	164.9	127	77.10%	21.2050	65.00	353.1	268	76.01%



8653 E. Highway 67
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WPE Class:	H1	3375 Lb Load	Max. One Section Length =	55	ft	Max. Bot Section Length =	53	ft
Top Dia. (in) =	8		Max. Top Section Length =	47.5	ft	Bot Section Thk. (if 2 sections) =	0.1875	in
One Section Taper =	0.1309		Top Section Length for 55' - 65' =	40	ft	Bot Section Thk. (if 3 sections) =	0.1875	in
Multi-Section Taper =	0.1400		Top Section Thk. =	0.1875	in	Bot Section Thk. (Height > 120') =	0.1875	in
Taper for height > 120' =	0.1400							
Shape (sides) =	12		Max. Mid Section Length =	35.5	ft	Material Grade =	65	ksi
Slip joint Factor =	1.65		Mid Section Thk. =	0.1875	in	Bend Radius =	4	x thickness
Embedded length (ft) =	10%	Ht + 2				Min. GL to Bot of Slip-Joint =	7	ft
Fixity from Bot (ft) =	7%	Ht + 0						

H1

LD2

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.		Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.
30	30	8	11.9270	0.1875	602													602	5.0000	11.2725	65.00	100.88	97.4	77.6	79.66%
35	35	8	12.5815	0.1875	725													725	5.5000	11.8616	65.00	111.98	108.2	92.8	85.81%
40	40	8	13.2360	0.1875	856													856	6.0000	12.4506	65.00	123.66	119.4	108.0	90.42%
45	45	8	13.8905	0.1875	993													993	6.5000	13.0397	65.00	135.91	131.3	123.2	93.83%
50	50	8	14.5450	0.1875	1137													1137	7.0000	13.6287	65.00	148.75	143.7	138.4	96.31%
55	55	8	15.1995	0.1875	1288													1288	7.5000	14.2178	65.00	162.17	156.6	153.6	98.03%
60	40	8	13.6000	0.1875	871	2	22.0000	12.9450	16.0250	0.1875	645	2	22.0000	12.9450	16.0250	0.1875	645	1516	8.0000	14.9050	65.00	178.56	172.5	168.8	97.84%
65	47.5	8	14.6500	0.1875	1085	2	19.5000	13.9950	16.7250	0.1875	607	2	19.5000	13.9950	16.7250	0.1875	607	1692	8.5000	15.5350	65.00	194.27	187.7	183.9	98.02%
70	47.5	8	14.6500	0.1875	1085	2	24.5000	13.9950	17.4250	0.1875	780	2	24.5000	13.9950	17.4250	0.1875	780	1865	9.0000	16.1650	65.00	210.65	203.5	199.1	97.86%
75	47.5	8	14.6500	0.1875	1085	2	29.5000	13.9950	18.1250	0.1875	961	2	29.5000	13.9950	18.1250	0.1875	961	2046	9.5000	16.7950	65.00	227.69	219.9	214.3	97.45%
80	47.5	8	14.6500	0.1875	1085	2	34.5000	13.9950	18.8250	0.1875	1148	2	34.5000	13.9950	18.8250	0.1875	1148	2233	10.0000	17.4250	65.00	245.39	237.0	229.5	96.82%
85	47.5	8	14.6500	0.1875	1085	2	39.5000	13.9950	19.5250	0.1875	1343	2	39.5000	13.9950	19.5250	0.1875	1343	2428	10.5000	18.0550	65.00	263.75	254.8	244.7	96.04%
90	47.5	8	14.6500	0.1875	1085	2	44.5000	13.9950	20.2250	0.1875	1545	2	44.5000	13.9950	20.2250	0.1875	1545	2630	11.0000	18.6850	65.00	282.78	273.1	259.9	95.14%
95	47.5	8	14.6500	0.1875	1085	2	49.5000	13.9950	20.9250	0.1875	1754	2	49.5000	13.9950	20.9250	0.1875	1754	2839	11.5000	19.3150	65.00	302.47	292.2	275.1	94.15%
100	47.5	8	14.6500	0.1875	1085	2	54.5000	13.9950	21.6250	0.1875	1970	2	54.5000	13.9950	21.6250	0.1875	1970	3056	12.0000	19.9450	65.00	322.82	311.8	290.3	93.08%
105	52.5	8	15.3500	0.1875	1237	2.25	54.7500	14.6600	22.3250	0.1875	2056	2.25	54.7500	14.6600	22.3250	0.1875	2056	3293	12.5000	20.5750	65.00	343.84	332.1	305.4	91.96%
110	47.5	8	14.6500	0.1875	1085	2	35.5000	13.9950	18.9650	0.1875	1187	2.75	31.7500	18.2050	22.6500	0.1875	1318	3590	13.0000	20.8300	65.00	352.54	340.5	320.6	94.16%
115	47.5	8	14.6500	0.1875	1085	2	35.5000	13.9950	18.9650	0.1875	1187	2.75	36.7500	18.2050	23.3500	0.1875	1552	3824	13.5000	21.4600	65.00	374.48	361.7	335.8	92.84%
120	47.5	8	14.6500	0.1875	1085	2	35.5000	13.9950	18.9650	0.1875	1187	2.75	41.7500	18.2050	24.0500	0.1875	1794	4065	14.0000	22.0900	65.00	397.09	383.6	351.0	91.51%
125	47.5	8	14.6500	0.1875	1085	2	35.5000	13.9950	18.9650	0.1875	1187	2.75	46.7500	18.2050	24.7500	0.1875	2042	4314	14.5000	22.7200	65.04	420.64	406.3	366.2	90.13%
130	47.5	8	14.6500	0.1875	1085	2	35.5000	13.9950	18.9650	0.1875	1187	2.75	51.7500	18.2050	25.4500	0.1875	2297	4569	15.0000	23.3500	64.16	438.55	423.6	381.4	90.03%
135	47.5	8	14.6500	0.1875	1085	2	39.2500	13.9950	19.4900	0.1875	1333	2.75	53.0000	18.7300	26.1500	0.1875	2419	4838	15.5000	23.9800	63.28	456.47	440.9	396.6	89.94%
140	47.5	8	14.6500	0.1875	1085	2	44.2500	13.9950	20.1900	0.1875	1535	2.75	53.0000	19.4300	26.8500	0.1875	2496	5116	16.0000	24.6100	62.39	474.34	458.2	411.8	89.87%
145	47.5	8	14.6500	0.1875	1085	2	49.5000	13.9950	20.9250	0.1875	1754	3	53.0000	20.1300	27.5500	0.1875	2572	5411	16.5000	25.2400	61.51	492.17	475.4	426.9	89.81%
150	49	8	14.8600	0.1875	1130	2	53.0000	14.2050	21.6250	0.1875	1927	3	53.0000	20.8300	28.2500	0.1875	2648	5705	17.0000	25.8700	60.63	509.90	492.5	442.1	89.77%

Height	Fixity Point						5 Ft from Top						Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	
30	2.1000	11.6521	65.00	104.3	87.4	83.82%	8.6545	65.00	56.6	27	47.74%											
35	2.4500	12.2608	65.00	115.7	103.1	89.08%	8.6545	65.00	56.6	27	47.74%											
40	2.8000	12.8695	65.00	127.8	118.8	92.95%	8.6545	65.00	56.6	27	47.74%											
45	3.1500	13.4782	65.00	140.5	134.5	95.75%	8.6545	65.00	56.6	27	47.74%											
50	3.5000	14.0869	65.00	153.7	150.2	97.70%	8.6545	65.00	56.6	27	47.74%											
55	3.8500	14.6955	65.00	167.6	165.9	98.99%	8.6545	65.00	56.6	27	47.74%											
60	4.2000	15.4370	65.00	185.2	181.6	98.02%	8.7000	65.00	57.2	27	47.22%	13.3200	65.00	137.1	122	88.61%	13.3200	65.00	137.1	122	88.61%	
65	4.5500	16.0880	65.00	201.5	197.3	97.90%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	14.3700	65.00	160.1	147	91.71%	
70	4.9000	16.7390	65.00	218.4	213.0	97.49%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	14.3700	65.00	160.1	147	91.71%	
75	5.2500	17.3900	65.00	236.1	228.7	96.86%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	14.3700	65.00	160.1	147	91.71%	
80	5.6000	18.0410	65.00	254.4	244.4	96.06%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	14.3700	65.00	160.1	147	91.71%	
85	5.9500	18.6920	65.00	273.4	260.0	95.13%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	14.3700	65.00	160.1	147	91.71%	
90	6.3000	19.3430	65.00	293.0	275.7	94.10%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	14.3700	65.00	160.1	147	91.71%	
95	6.6500	19.9940	65.00	313.4	291.4	93.00%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	14.3700	65.00	160.1	147	91.71%	
100	7.0000	20.6450	65.00	334.4	307.1	91.84%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	14.3700	65.00	160.1	147	91.71%	
105	7.3500	21.2960	65.00	356.1	322.8	90.64%	8.7000	65.00	57.2	27	47.22%	15.0350	65.00	175.6	163	92.76%	15.0350	65.00	175.6	163	92.76%	
110	7.7000	21.5720	65.00	365.6	338.5	92.60%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	18.5800	65.00	270.0	257	95.30%	
115	8.0500	22.2230	65.00	388.3	354.2	91.23%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	18.5800	65.00	270.0	257	95.30%	
120	8.4000	22.8740	64.83	410.5	369.9	90.10%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	18.5800	65.00	270.0	257	95.30%	
125	8.7500	23.5250	63.91	428.4	385.6	90.00%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	18.5800	65.00	270.0	257	95.30%	
130	9.1000	24.1760	63.00	446.3	401.3	89.92%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	18.5800	65.00	270.0	257	95.30%	
135	9.4500	24.8270	62.09	464.1	417.0	89.84%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	19.1050	65.00	285.8	270	94.49%	
140	9.8000	25.4780	61.18	481.9	432.7	89.79%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	19.8050	65.00	307.4	287	93.32%	
145	10.1500	26.1290	60.27	499.5	448.4	89.76%	8.7000	65.00	57.2	27	47.22%	14.3700	65.00	160.1	147	91.71%	20.5050	65.00	329.8	304	92.09%	
150	10.5000	26.7800	59.35	517.1	464.1	89.75%	8.7000	65.00	57.2	27	47.22%	14.5800	65.00	164.9	152	92.11%	21.2050	65.00	353.1	321	90.81%	



8653 E. Highway 67
Alvarado, TX 76009
Office: 817-852-1700
www.SabreTubularStructures.com

WPE Class: H2 4000 Lb Load Max. One Section Length = 55 ft
Top Dia. (in) = 9.4375 Max. Top Section Length = 47.5 ft
One Section Taper = 0.1291 Top Section Length for 55' - 65' = 40 ft
Multi-Section Taper = 0.1400 Top Section Thk. = 0.1875 in
Taper for height > 120' = 0.1400
Shape (sides) = 12
Slip joint Factor = 1.65
Max. Mid Section Length = 35.5 ft
Mid Section Thk. = 0.1875 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

H2

LD3

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	9.4375	13.3105	0.1875	688													688	5.0000	12.6650	65.00	128.05	123.7	92.0	74.38%
35	35	9.4375	13.9560	0.1875	826													826	5.5000	13.2460	65.00	140.35	135.6	110.0	81.14%
40	40	9.4375	14.6015	0.1875	971													971	6.0000	13.8269	65.00	153.20	148.0	128.0	86.50%
45	45	9.4375	15.2470	0.1875	1122													1122	6.5000	14.4079	65.00	166.62	160.9	146.0	90.71%
50	50	9.4375	15.8925	0.1875	1280													1280	7.0000	14.9888	65.00	180.61	174.5	164.0	94.01%
55	55	9.4375	16.5380	0.1875	1444													1444	7.5000	15.5698	65.00	195.16	188.5	182.0	96.55%
60	40	9.4375	15.0375	0.1875	989		6.0000	9.4375	15.0375	0.1875	0	2.25	22.2500	14.3475	17.4625	0.1875	717	1706	8.0000	16.3425	65.00	215.38	208.0	200.0	96.13%
65	47.5	9.4375	16.0875	0.1875	1225		6.0000	9.4375	16.0875	0.1875	0	2.25	19.7500	15.3975	18.1625	0.1875	672	1898	8.5000	16.9725	65.00	232.61	224.7	218.0	97.03%
70	47.5	9.4375	16.0875	0.1875	1225		6.0000	9.4375	16.0875	0.1875	0	2.25	24.7500	15.3975	18.8625	0.1875	860	2086	9.0000	17.6025	65.00	250.50	242.0	236.0	97.54%
75	47.5	9.4375	16.0875	0.1875	1225		6.0000	9.4375	16.0875	0.1875	0	2.25	29.7500	15.3975	19.5625	0.1875	1055	2281	9.5000	18.2325	65.00	269.05	259.9	254.0	97.74%
80	47.5	9.4375	16.0875	0.1875	1225		6.0000	9.4375	16.0875	0.1875	0	2.25	34.7500	15.3975	20.2625	0.1875	1258	2483	10.0000	18.8625	65.00	288.26	278.4	272.0	97.69%
85	47.5	9.4375	16.0875	0.1875	1225		6.0000	9.4375	16.0875	0.1875	0	2.25	39.7500	15.3975	20.9625	0.1875	1467	2693	10.5000	19.4925	65.00	308.14	297.6	290.0	97.43%
90	47.5	9.4375	16.0875	0.1875	1225		6.0000	9.4375	16.0875	0.1875	0	2.25	44.7500	15.3975	21.6625	0.1875	1684	2909	11.0000	20.1225	65.00	328.68	317.5	308.0	97.01%
95	47.5	9.4375	16.0875	0.1875	1225		6.0000	9.4375	16.0875	0.1875	0	2.25	49.7500	15.3975	22.3625	0.1875	1908	3133	11.5000	20.7525	65.00	349.88	338.0	326.0	96.46%
100	47.5	9.4375	16.0875	0.1875	1225		6.0000	9.4375	16.0875	0.1875	0	2.25	54.7500	15.3975	23.0625	0.1875	2139	3364	12.0000	21.3825	65.00	371.75	359.1	344.0	95.80%
105	52.5	9.4375	16.7875	0.1875	1392		6.0000	9.4375	16.7875	0.1875	0	2.5	55.0000	16.0625	23.7625	0.1875	2226	3618	12.5000	22.0125	65.00	394.27	380.8	362.0	95.05%
110	47.5	9.4375	16.0875	0.1875	1225	2.25	35.5000	15.3975	20.3675	0.1875	1289	2.75	32.0000	19.6075	24.0875	0.1875	1422	3936	13.0000	22.2675	65.00	403.58	389.8	380.0	97.48%
115	47.5	9.4375	16.0875	0.1875	1225	2.25	35.5000	15.3975	20.3675	0.1875	1289	2.75	37.0000	19.6075	24.7875	0.1875	1671	4185	13.5000	22.8975	64.79	425.68	411.2	398.0	96.79%
120	47.5	9.4375	16.0875	0.1875	1225	2.25	35.5000	15.3975	20.3675	0.1875	1289	2.75	42.0000	19.6075	25.4875	0.1875	1927	4441	14.0000	23.5275	63.91	443.60	428.5	416.0	97.09%
125	47.5	9.4375	16.0875	0.1875	1225	2.25	35.5000	15.3975	20.3675	0.1875	1289	2.75	47.0000	19.6075	26.1875	0.1875	2190	4704	14.5000	24.1575	63.03	461.51	445.8	434.0	97.36%
130	47.5	9.4375	16.0875	0.1875	1225	2.25	35.5000	15.3975	20.3675	0.1875	1289	2.75	52.0000	19.6075	26.8875	0.1875	2460	4974	15.0000	24.7875	62.15	479.37	463.0	452.0	97.62%
135	47.5	9.4375	16.0875	0.1875	1225	2.25	39.7500	15.3975	20.9625	0.1875	1467	3	53.0000	20.1675	27.5875	0.1875	2576	5268	15.5000	25.4175	61.26	497.17	480.2	470.0	97.87%
140	47.5	9.4375	16.0875	0.1875	1225	2.25	44.7500	15.3975	21.6625	0.1875	1684	3	53.0000	20.8675	28.2875	0.1875	2652	5561	16.0000	26.0475	60.38	514.88	497.3	488.0	98.12%
145	47.5	9.4375	16.0875	0.1875	1225	2.25	50.0000	15.3975	22.3975	0.1875	1919	3.25	53.0000	21.5675	28.9875	0.1875	2728	5873	16.5000	26.6775	59.50	532.46	514.3	506.0	98.38%
150	49.5	9.4375	16.3675	0.1875	1291	2.25	53.0000	15.6775	23.0975	0.1875	2088	3.25	53.0000	22.2675	29.6875	0.1875	2804	6183	17.0000	27.3075	58.61	549.90	531.2	524.0	98.65%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	13.0394	65.00	131.3	103.6	78.92%	10.0830	65.00	77.5	32	41.29%										
35	2.4500	13.6397	65.00	143.9	122.2	84.91%	10.0830	65.00	77.5	32	41.29%										
40	2.8000	14.2400	65.00	157.1	140.8	89.60%	10.0830	65.00	77.5	32	41.29%										
45	3.1500	14.8403	65.00	171.0	159.4	93.24%	10.0830	65.00	77.5	32	41.29%										
50	3.5000	15.4407	65.00	185.3	178.0	96.04%	10.0830	65.00	77.5	32	41.29%										
55	3.8500	16.0410	65.00	200.3	196.6	98.15%	10.0830	65.00	77.5	32	41.29%										
60	4.2000	16.8745	65.00	222.1	215.2	96.91%	10.1375	65.00	78.4	32	40.84%	14.7225	65.00	168.2	143	85.02%	19.9825	65.00	313.0	304	97.12%
65	4.5500	17.5255	65.00	239.8	233.8	97.49%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	19.9825	65.00	313.0	304	97.12%
70	4.9000	18.1765	65.00	258.3	252.4	97.73%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	19.9825	65.00	313.0	304	97.12%
75	5.2500	18.8275	65.00	277.4	271.0	97.70%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	19.9825	65.00	313.0	304	97.12%
80	5.6000	19.4785	65.00	297.2	289.6	97.44%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	19.9825	65.00	313.0	304	97.12%
85	5.9500	20.1295	65.00	317.7	308.2	97.01%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	19.9825	65.00	313.0	304	97.12%
90	6.3000	20.7805	65.00	338.9	326.8	96.43%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	19.9825	65.00	313.0	304	97.12%
95	6.6500	21.4315	65.00	360.7	345.4	95.75%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	19.9825	65.00	313.0	304	97.12%
100	7.0000	22.0825	65.00	383.3	364.0	94.97%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	19.9825	65.00	313.0	304	97.12%
105	7.3500	22.7335	65.02	406.7	382.6	94.08%	10.1375	65.00	78.4	32	40.84%	16.4375	65.00	210.5	192	91.21%	19.9825	65.00	313.0	304	97.12%
110	7.7000	23.0095	64.64	414.3	401.2	96.85%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	19.9825	65.00	313.0	304	97.12%
115	8.0500	23.6605	63.72	432.1	419.8	97.14%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	19.9825	65.00	313.0	304	97.12%
120	8.4000	24.3115	62.81	450.0	438.4	97.42%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	19.9825	65.00	313.0	304	97.12%
125	8.7500	24.9625	61.90	467.8	457.0	97.69%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	19.9825	65.00	313.0	304	97.12%
130	9.1000	25.6135	60.99	485.6	475.6	97.95%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	19.9825	65.00	313.0	304	97.12%
135	9.4500	26.2645	60.08	503.2	494.2	98.21%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	20.5425	65.00	331.1	320	96.66%
140	9.8000	26.9155	59.16	520.7	512.8	98.48%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	21.2425	65.00	354.3	340	95.96%
145	10.1500	27.5665	58.25	538.0	531.4	98.77%	10.1375	65.00	78.4	32	40.84%	15.7725	65.00	193.5	173	89.39%	21.9425	65.00	378.4	360	95.14%
150	10.5000	28.2175	57.34	555.2	550.0	99.07%	10.1375	65.00	78.4	32	40.84%	16.0525	65.00	200.6	181	90.23%	22.6425	65.00	403.2	380	94.24%



8653 E. Highway 67
Alvarado, TX 76009
Office: 817-852-1700
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WPE Class: H3 4700 Lb Load
Top Dia. (in) = 9.75
One Section Taper = 0.1481
Multi-Section Taper = 0.1591
Taper for height > 120' = 0.1591
Shape (sides) = 12
Slip joint Factor = 1.65
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

Max. One Section Length = 55 ft
Max. Top Section Length = 47.5 ft
Top Section Length for 55' - 65' = 40 ft
Top Section Thk. = 0.1875 in
Max. Mid Section Length = 36 ft
Mid Section Thk. = 0.1875 in

Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.1875 in
Bot Section Thk. (if 3 sections) = 0.1875 in
Bot Section Thk. (Height > 120') = 0.25 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft

H3

LD4

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	9.75	14.1930	0.1875	725													725	5.0000	13.4525	65.00	144.85	139.9	108.1	77.26%
35	35	9.75	14.9335	0.1875	873													873	5.5000	14.1190	65.00	159.88	154.4	129.3	83.69%
40	40	9.75	15.6740	0.1875	1028													1028	6.0000	14.7854	65.00	175.65	169.7	150.4	88.65%
45	45	9.75	16.4145	0.1875	1190													1190	6.5000	15.4519	65.00	192.16	185.6	171.6	92.42%
50	50	9.75	17.1550	0.1875	1361													1361	7.0000	16.1183	65.00	209.41	202.3	192.7	95.27%
55	55	9.75	17.8955	0.1875	1538													1538	7.5000	16.7848	65.00	227.40	219.7	213.9	97.36%
60	40	9.75	16.1140	0.1875	1046	0	0.0000	0.0000	0.0000	0	0	2.25	22.2500	15.3810	18.9210	0.1875	774	1820	8.0000	17.6482	65.00	251.82	243.2	235.0	96.61%
65	47.5	9.75	17.3073	0.1875	1300	0	0.0000	0.0000	0.0000	0	0	2.5	20.0000	16.5345	19.7165	0.1875	736	2036	8.5000	18.3642	65.00	273.01	263.7	256.2	97.13%
70	47.5	9.75	17.3073	0.1875	1300	0	0.0000	0.0000	0.0000	0	0	2.5	25.0000	16.5345	20.5120	0.1875	940	2240	9.0000	19.0801	65.00	295.05	285.0	277.3	97.30%
75	47.5	9.75	17.3073	0.1875	1300	0	0.0000	0.0000	0.0000	0	0	2.5	30.0000	16.5345	21.3075	0.1875	1153	2453	9.5000	19.7961	65.00	317.95	307.1	298.5	97.18%
80	47.5	9.75	17.3073	0.1875	1300	0	0.0000	0.0000	0.0000	0	0	2.5	35.0000	16.5345	22.1030	0.1875	1374	2674	10.0000	20.5120	65.00	341.71	330.1	319.6	96.83%
85	47.5	9.75	17.3073	0.1875	1300	0	0.0000	0.0000	0.0000	0	0	2.5	40.0000	16.5345	22.8985	0.1875	1603	2903	10.5000	21.2280	65.00	366.32	353.8	340.8	96.30%
90	47.5	9.75	17.3073	0.1875	1300	0	0.0000	0.0000	0.0000	0	0	2.5	45.0000	16.5345	23.6940	0.1875	1840	3140	11.0000	21.9439	65.00	391.79	378.4	361.9	95.63%
95	47.5	9.75	17.3073	0.1875	1300	0	0.0000	0.0000	0.0000	0	0	2.5	50.0000	16.5345	24.4895	0.1875	2085	3385	11.5000	22.6599	65.00	418.11	403.9	383.1	94.85%
100	47.5	9.75	17.3073	0.1875	1300	0	0.0000	0.0000	0.0000	0	0	2.5	55.0000	16.5345	25.2850	0.1875	2338	3638	12.0000	23.3758	64.12	439.29	424.3	404.2	95.26%
105	52.5	9.75	18.1028	0.1875	1480							2.5	55.0000	17.3300	26.0805	0.1875	2428	3908	12.5000	24.0918	63.12	459.64	444.0	425.4	95.80%
110	47.5	9.75	17.3073	0.1875	1300	2.5	36.0000	16.5345	22.2621	0.1875	1419	3.25	32.2500	21.3700	26.5010	0.1875	1571	4290	13.0000	24.4327	62.64	469.32	453.3	446.5	98.49%
115	47.5	9.75	17.3073	0.1875	1300	2.5	36.0000	16.5345	22.2621	0.1875	1419	3.25	37.2500	21.3700	27.2965	0.1875	1845	4564	13.5000	25.1487	61.64	489.59	472.9	467.7	98.89%
120	47.5	9.75	17.3073	0.1875	1300	2.5	36.0000	16.5345	22.2621	0.1875	1419	3.25	42.2500	21.3700	28.0920	0.1875	2127	4846	14.0000	25.8646	60.64	509.75	492.4	488.8	99.27%
125	47.5	9.75	17.3073	0.1875	1300	2.5	36.0000	16.5345	22.2621	0.1875	1419	3.25	47.2500	21.3700	28.8875	0.25	3215	5934	14.5000	26.5806	65.00	764.47	738.4	510.0	69.06%
130	47.5	9.75	17.3073	0.1875	1300	2.5	36.0000	16.5345	22.2621	0.1875	1419	3.25	52.2500	21.3700	29.6830	0.25	3613	6331	15.0000	27.2965	65.00	806.81	779.3	531.1	68.15%
135	47.5	9.75	17.3073	0.1875	1300	2.5	40.2500	16.5345	22.9383	0.1875	1614	3.25	53.0000	22.0462	30.4785	0.25	3771	6685	15.5000	28.0125	65.00	850.29	821.3	552.3	67.24%
140	47.5	9.75	17.3073	0.1875	1300	2.5	45.2500	16.5345	23.7338	0.1875	1852	3.25	53.0000	22.8417	31.2740	0.25	3886	7038	16.0000	28.7284	65.00	894.91	864.4	573.4	66.33%
145	47.5	9.75	17.3073	0.1875	1300	2.5	50.5000	16.5345	24.5691	0.1875	2110	3.5	53.0000	23.6372	32.0695	0.25	4002	7411	16.5000	29.4444	65.00	940.67	908.6	594.6	65.43%
150	50	9.75	17.7050	0.1875	1389	2.5	53.0000	16.9323	25.3646	0.1875	2279	3.5	53.0000	24.4327	32.8650	0.25	4117	7785	17.0000	30.1603	65.00	987.58	953.9	615.7	64.54%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	13.8820	65.00	149.2	121.7	81.59%	10.4905	65.00	84.1	38	44.72%										
35	2.4500	14.5707	65.00	164.7	143.6	87.19%	10.4905	65.00	84.1	38	44.72%										
40	2.8000	15.2593	65.00	180.9	165.4	91.44%	10.4905	65.00	84.1	38	44.72%										
45	3.1500	15.9480	65.00	197.9	187.3	94.62%	10.4905	65.00	84.1	38	44.72%										
50	3.5000	16.6367	65.00	215.7	209.2	96.95%	10.4905	65.00	84.1	38	44.72%										
55	3.8500	17.3253	65.00	234.3	231.0	98.60%	10.4905	65.00	84.1	38	44.72%										
60	4.2000	18.2528	65.00	260.5	252.9	97.08%	10.5455	65.00	85.0	38	44.25%	15.7560	65.00	193.1	168	87.00%					
65	4.5500	18.9926	65.00	282.4	274.7	97.30%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	10.5455	65.00	85.0	38	44.25%
70	4.9000	19.7324	65.00	305.1	296.6	97.20%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	10.5455	65.00	85.0	38	44.25%
75	5.2500	20.4722	65.00	328.8	318.4	96.85%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	10.5455	65.00	85.0	38	44.25%
80	5.6000	21.2120	65.00	353.3	340.3	96.31%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	10.5455	65.00	85.0	38	44.25%
85	5.9500	21.9519	65.00	378.7	362.1	95.62%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	10.5455	65.00	85.0	38	44.25%
90	6.3000	22.6917	65.00	405.0	384.0	94.81%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	10.5455	65.00	85.0	38	44.25%
95	6.6500	23.4315	64.05	425.8	405.8	95.30%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	10.5455	65.00	85.0	38	44.25%
100	7.0000	24.1713	63.01	446.2	427.7	95.86%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	10.5455	65.00	85.0	38	44.25%
105	7.3500	24.9111	61.97	466.4	449.6	96.38%	10.5455	65.00	85.0	38	44.25%	17.7050	65.00	244.8	226	92.14%	10.5455	65.00	85.0	38	44.25%
110	7.7000	25.2759	61.46	476.4	471.4	98.96%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	21.7450	65.00	371.5	356	95.83%
115	8.0500	26.0157	60.42	496.5	493.3	99.35%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	21.7450	65.00	371.5	356	95.83%
120	8.4000	26.7556	59.39	516.4	515.1	99.75%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	21.7450	65.00	371.5	356	95.83%
125	8.7500	27.4954	65.00	790.9	537.0	67.90%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	21.7450	65.00	371.5	356	95.83%
130	9.1000	28.2352	65.00	834.6	558.8	66.96%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	21.7450	65.00	371.5	356	95.83%
135	9.4500	28.9750	65.00	879.5	580.7	66.02%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	22.4212	65.00	395.3	376	95.12%
140	9.8000	29.7148	65.00	925.6	602.5	65.10%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	23.2167	64.35	419.9	400	95.13%
145	10.1500	30.4546	64.87	971.0	624.4	64.31%	10.5455	65.00	85.0	38	44.25%	16.9095	65.00	223.0	202	90.63%	24.0122	63.23	441.8	423	95.75%
150	10.5000	31.1945	64.10	1007.1	646.3	64.17%	10.5455	65.00	85.0	38	44.25%	17.3073	65.00	233.8	214	91.47%	24.8077	62.12	463.6	447	96.31%



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WPE Class: H4 5450 Lb Load Max. One Section Length = 55 ft
Top Dia. (in) = 10
One Section Taper = 0.1680
Multi-Section Taper = 0.1853
Taper for height > 120' = 0.1853
Shape (sides) = 12
Slip joint Factor = 1.65
Max. Top Section Length = 47.5 ft
Top Section Length for 55' - 65' = 40 ft
Top Section Thk. = 0.1875 in
Max. Mid Section Length = 36 ft
Mid Section Thk. = 0.1875 in
Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.1875 in
Bot Section Thk. (if 3 sections) = 0.1875 in
Bot Section Thk. (Height > 120') = 0.25 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

H4
LD5

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	10	15.0400	0.1875	759													759	5.0000	14.2000	65.00	161.76	156.2	125.4	80.23%
35	35	10	15.8800	0.1875	916													916	5.5000	14.9560	65.00	179.80	173.7	149.9	86.30%
40	40	10	16.7200	0.1875	1081													1081	6.0000	15.7120	65.00	198.80	192.0	174.4	90.82%
45	45	10	17.5600	0.1875	1255													1255	6.5000	16.4680	65.00	218.76	211.3	198.9	94.14%
50	50	10	18.4000	0.1875	1437													1437	7.0000	17.2240	65.00	239.67	231.5	223.5	96.52%
55	55	10	19.2400	0.1875	1628													1628	7.5000	17.9800	65.00	261.53	252.6	248.0	98.16%
60	40	10	17.4120	0.1875	1109		2.5	22.5000	16.5738	20.7430	0.1875	853	2.5	22.5000	16.5738	20.7430	0.1875	1962	8.0000	19.2606	65.00	300.75	290.5	272.5	93.80%
65	47.5	10	18.8018	0.1875	1385		2.75	20.2500	17.9172	21.6695	0.1875	814	2.75	20.2500	17.9172	21.6695	0.1875	2200	8.5000	20.0945	65.00	327.75	316.6	297.0	93.82%
70	47.5	10	18.8018	0.1875	1385		2.75	25.2500	17.9172	22.5960	0.1875	1040	2.75	25.2500	17.9172	22.5960	0.1875	2425	9.0000	20.9283	65.00	355.92	343.8	321.6	93.53%
75	47.5	10	18.8018	0.1875	1385		2.75	30.2500	17.9172	23.5225	0.1875	1274	2.75	30.2500	17.9172	23.5225	0.1875	2659	9.5000	21.7622	65.00	385.24	372.1	346.1	93.00%
80	47.5	10	18.8018	0.1875	1385		2.75	35.2500	17.9172	24.4490	0.1875	1518	2.75	35.2500	17.9172	24.4490	0.1875	2903	10.0000	22.5960	65.00	415.73	401.6	370.6	92.29%
85	47.5	10	18.8018	0.1875	1385		2.75	40.2500	17.9172	25.3755	0.1875	1772	2.75	40.2500	17.9172	25.3755	0.1875	3157	10.5000	23.4299	64.05	440.82	425.8	395.1	92.80%
90	47.5	10	18.8018	0.1875	1385		2.75	45.2500	17.9172	26.3020	0.1875	2035	2.75	45.2500	17.9172	26.3020	0.1875	3420	11.0000	24.2637	62.88	464.52	448.7	419.7	93.53%
95	47.5	10	18.8018	0.1875	1385		2.75	50.2500	17.9172	27.2285	0.1875	2308	2.75	50.2500	17.9172	27.2285	0.1875	3693	11.5000	25.0976	61.71	488.14	471.5	444.2	94.20%
100	47.5	10	18.8018	0.1875	1385		2.75	55.2500	17.9172	28.1550	0.1875	2590	2.75	55.2500	17.9172	28.1550	0.1875	3975	12.0000	25.9314	60.54	511.62	494.2	468.7	94.84%
105	53	10	19.8209	0.1875	1601		2.75	54.7500	18.9363	29.0815	0.1875	2676	2.75	54.7500	18.9363	29.0815	0.1875	4276	12.5000	26.7653	59.37	534.90	516.7	493.2	95.46%
110	47.5	10	18.8018	0.1875	1385	2.75	36.0000	17.9172	24.5880	0.1875	1556	3.5	32.7500	23.5644	30.6330	0.1875	1774	4715	13.0000	27.2241	58.73	547.60	528.9	517.8	97.88%
115	47.5	10	18.8018	0.1875	1385	2.75	36.0000	17.9172	24.5880	0.1875	1556	3.5	37.7500	23.5644	30.5595	0.1875	2081	5022	13.5000	28.0580	57.56	570.44	551.0	542.3	98.42%
120	47.5	10	18.8018	0.1875	1385	2.75	36.0000	17.9172	24.5880	0.1875	1556	3.5	42.7500	23.5644	31.4860	0.1875	2398	5338	14.0000	28.8918	56.39	592.92	572.7	566.8	98.97%
125	47.5	10	18.8018	0.1875	1385	2.75	36.0000	17.9172	24.5880	0.1875	1556	3.5	47.7500	23.5644	32.4125	0.25	3623	5564	14.5000	29.7257	65.00	958.96	926.3	591.3	63.84%
130	47.5	10	18.8018	0.1875	1385	2.75	36.0000	17.9172	24.5880	0.1875	1556	3.5	52.7500	23.5644	33.3390	0.25	4069	7010	15.0000	30.5595	64.76	1010.52	976.1	615.9	63.09%
135	47.5	10	18.8018	0.1875	1385	2.75	40.7500	17.9172	25.4682	0.1875	1798	3.5	53.0000	24.4446	34.2655	0.25	4219	7402	15.5000	31.3934	63.89	1052.68	1016.8	640.4	62.98%
140	47.5	10	18.8018	0.1875	1385	2.75	46.0000	17.9172	26.4410	0.1875	2075	3.75	53.0000	25.3711	35.1920	0.25	4354	7814	16.0000	32.2272	63.01	1094.81	1057.5	664.9	62.87%
145	47.5	10	18.8018	0.1875	1385	2.75	51.0000	17.9172	27.3675	0.1875	2349	3.75	53.0000	26.2976	36.1185	0.25	4488	8222	16.5000	33.0611	62.13	1136.85	1098.1	689.4	62.78%
150	50.75	10	19.4040	0.1875	1511	2.75	53.0000	18.5194	28.3403	0.1875	2527	4	53.0000	27.2241	37.0450	0.25	4622	8661	17.0000	33.8949	61.26	1178.73	1138.6	714.0	62.71%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	14.6872	65.00	167.4	141.2	84.34%	10.8400	65.00	89.9	44	48.49%										
35	2.4500	15.4684	65.00	186.0	166.5	89.51%	10.8400	65.00	89.9	44	48.49%										
40	2.8000	16.2496	65.00	205.6	191.8	93.29%	10.8400	65.00	89.9	44	48.49%										
45	3.1500	17.0308	65.00	226.3	217.2	95.99%	10.8400	65.00	89.9	44	48.49%										
50	3.5000	17.8120	65.00	247.8	242.5	97.85%	10.8400	65.00	89.9	44	48.49%										
55	3.8500	18.5932	65.00	270.4	267.9	99.05%	10.8400	65.00	89.9	44	48.49%										
60	4.2000	19.9647	65.00	312.5	293.2	93.84%	10.9265	65.00	91.4	44	47.70%	16.9488	65.00	224.0	193	86.36%	10.9265	65.00	91.4	44	47.70%
65	4.5500	20.8264	65.00	340.4	318.6	93.58%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	10.9265	65.00	91.4	44	47.70%
70	4.9000	21.6880	65.00	369.6	343.9	93.06%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	10.9265	65.00	91.4	44	47.70%
75	5.2500	22.5497	65.00	399.9	369.2	92.33%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	10.9265	65.00	91.4	44	47.70%
80	5.6000	23.4113	64.07	425.3	394.6	92.78%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	10.9265	65.00	91.4	44	47.70%
85	5.9500	24.2730	62.87	448.9	419.9	93.53%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	10.9265	65.00	91.4	44	47.70%
90	6.3000	25.1346	61.66	472.5	445.3	94.23%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	10.9265	65.00	91.4	44	47.70%
95	6.6500	25.9963	60.45	495.9	470.6	94.89%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	10.9265	65.00	91.4	44	47.70%
100	7.0000	26.8579	59.24	519.2	496.0	95.53%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	10.9265	65.00	91.4	44	47.70%
105	7.3500	27.7195	58.04	542.1	521.3	96.16%	10.9265	65.00	91.4	44	47.70%	19.3113	65.00	292.1	263	90.04%	10.9265	65.00	91.4	44	47.70%
110	7.7000	28.2062	57.36	554.9	546.6	98.51%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	23.9394	63.33	439.8	410	93.25%
115	8.0500	29.0678	56.15	577.2	572.0	99.09%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	23.9394	63.33	439.8	410	93.25%
120	8.4000	29.9295	54.94	599.2	597.3	99.69%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	23.9394	63.33	439.8	410	93.25%
125	8.7500	30.7911	64.52	987.4	622.7	63.06%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	23.9394	63.33	439.8	410	93.25%
130	9.1000	31.6528	63.61	1029.5	648.0	62.94%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	23.9394	63.33	439.8	410	93.25%
135	9.4500	32.5144	62.71	1071.5	673.3	62.84%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	24.8196	62.10	463.9	436	93.98%
140	9.8000	33.3761	61.80	1113.4	698.7	62.75%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	25.7461	60.80	489.2	463	94.70%
145	10.1500	34.2377	60.90	1155.1	724.0	62.68%	10.9265	65.00	91.4	44	47.70%	18.2922	65.00	261.6	233	89.06%	26.6726	59.50	514.2	491	95.39%
150	10.5000	35.0994	59.99	1196.6	749.4	62.63%	10.9265	65.00	91.4	44	47.70%	18.8944	65.00	279.4	251	89.73%	27.5991	58.21	538.9	518	96.07%



8653 E. Highway 67
Alvarado, TX 76009
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WPE Class: H5 6250 Lb Load Max. One Section Length = 55 ft
Top Dia. (in) = 10
One Section Taper = 0.1926
Multi-Section Taper = 0.2085
Taper for height > 120' = 0.2085
Shape (sides) = 12
Slip joint Factor = 1.65
Max. Top Section Length = 47.5 ft
Top Section Length for 55' - 65' = 40 ft
Top Section Thk. = 0.1875 in
Max. Mid Section Length = 36 ft
Mid Section Thk. = 0.1875 in
Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.1875 in
Bot Section Thk. (if 3 sections) = 0.25 in
Bot Section Thk. (Height > 120') = 0.25 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

H5
LD6

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	10	15.7780	0.1875	782													782	5.0000	14.8150	65.00	176.37	170.4	143.8	84.38%
35	35	10	16.7410	0.1875	947													947	5.5000	15.6817	65.00	198.02	191.3	171.9	89.86%
40	40	10	17.7040	0.1875	1121													1121	6.0000	16.5484	65.00	220.94	213.4	200.0	93.72%
45	45	10	18.6670	0.1875	1306													1306	6.5000	17.4151	65.00	245.11	236.8	228.1	96.36%
50	50	10	19.6300	0.1875	1500													1500	7.0000	18.2818	65.00	270.53	261.3	256.3	98.06%
55	55	10	20.5930	0.1875	1705													1705	7.5000	19.1485	65.00	297.20	287.1	284.4	99.06%
60	40	10	18.3400	0.1875	1147							2.5	22.5000	17.4438	22.1350	0.1875	905	2052	8.0000	20.4670	65.00	340.19	328.6	312.5	95.10%
65	47.5	10	19.9038	0.1875	1439							2.75	20.2500	18.9554	23.1775	0.1875	867	2306	8.5000	21.4053	65.00	372.55	359.9	340.6	94.66%
70	47.5	10	19.9038	0.1875	1439							2.75	25.2500	18.9554	24.2200	0.1875	1109	2547	9.0000	22.3435	65.00	406.38	392.5	368.8	93.94%
75	47.5	10	19.9038	0.1875	1439							2.75	30.2500	18.9554	25.2625	0.1875	1360	2799	9.5000	23.2818	64.26	436.61	421.7	396.9	94.11%
80	47.5	10	19.9038	0.1875	1439							2.75	35.2500	18.9554	26.3050	0.1875	1623	3062	10.0000	24.2200	62.94	463.28	447.5	425.0	94.97%
85	47.5	10	19.9038	0.1875	1439							2.75	40.2500	18.9554	27.3475	0.1875	1896	3335	10.5000	25.1583	61.63	489.86	473.2	453.1	95.76%
90	47.5	10	19.9038	0.1875	1439							2.75	45.2500	18.9554	28.3900	0.1875	2180	3619	11.0000	26.0965	60.31	516.25	498.7	481.3	96.51%
95	47.5	10	19.9038	0.1875	1439							2.75	50.2500	18.9554	29.4325	0.1875	2475	3913	11.5000	27.0348	59.00	542.37	523.9	509.4	97.23%
100	47.5	10	19.9038	0.1875	1439							2.75	55.2500	18.9554	30.4750	0.1875	2780	4219	12.0000	27.9730	57.68	568.13	548.8	537.5	97.95%
105	53	10	21.0505	0.1875	1668							3	55.0000	20.0500	31.5175	0.1875	2888	4556	12.5000	28.9113	56.37	593.44	573.2	565.6	98.68%
110	47.5	10	19.9038	0.1875	1439	2.75	36.0000	18.9554	26.4614	0.1875	1663	3.75	33.0000	25.3045	32.1850	0.25	2572	5674	13.0000	29.4745	65.00	942.62	910.5	884.3	95.21%
115	47.5	10	19.9038	0.1875	1439	2.75	36.0000	18.9554	26.4614	0.1875	1663	3.75	38.0000	25.3045	33.2275	0.25	3016	6118	13.5000	30.4128	64.92	1003.10	968.9	921.9	94.18%
120	47.5	10	19.9038	0.1875	1439	2.75	36.0000	18.9554	26.4614	0.1875	1663	3.75	43.0000	25.3045	34.2700	0.25	3474	6576	14.0000	31.3510	63.93	1050.54	1014.7	950.0	94.06%
125	47.5	10	19.9038	0.1875	1439	2.75	36.0000	18.9554	26.4614	0.1875	1663	3.75	48.0000	25.3045	35.3125	0.25	3947	7049	14.5000	32.2893	62.94	1097.94	1060.5	978.1	93.94%
130	47.5	10	19.9038	0.1875	1439	2.75	36.0000	18.9554	26.4614	0.1875	1663	3.75	53.0000	25.3045	36.3550	0.25	4433	7535	15.0000	33.2275	61.96	1145.22	1106.2	1063.3	93.84%
135	47.5	10	19.9038	0.1875	1439	2.75	41.0000	18.9554	27.5039	0.1875	1938	3.75	53.0000	26.3470	37.3975	0.25	4584	7961	15.5000	34.1658	60.97	1192.29	1151.7	1106.2	93.77%
140	47.5	10	19.9038	0.1875	1439	2.75	46.2500	18.9554	28.5985	0.1875	2238	4	53.0000	27.3895	38.4400	0.25	4735	8412	16.0000	35.1040	59.99	1239.05	1196.8	1151.7	93.71%
145	47.5	10	19.9038	0.1875	1439	2.75	51.5000	18.9554	29.6931	0.1875	2550	4.25	53.0000	28.4320	39.4825	0.25	4887	8875	16.5000	36.0423	59.00	1285.42	1241.6	1196.8	93.68%
150	51.25	10	20.6856	0.1875	1593	3	53.0000	19.6851	30.7356	0.1875	2721	4.25	53.0000	29.4745	40.5250	0.25	5038	9352	17.0000	36.9805	58.01	1331.31	1285.9	1241.6	93.67%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	15.3735	65.00	183.7	161.9	88.12%	10.9630	65.00	92.0	50	54.33%										
35	2.4500	16.2691	65.00	206.1	190.9	92.62%	10.9630	65.00	92.0	50	54.33%										
40	2.8000	17.1647	65.00	229.9	220.0	95.70%	10.9630	65.00	92.0	50	54.33%	0.0000	0.00		0.00		0.0000	0.00	0.00	0	
45	3.1500	18.0603	65.00	254.9	249.1	97.70%	10.9630	65.00	92.0	50	54.33%	0.0000	0.00		0.00		0.0000	0.00	0.00	0	
50	3.5000	18.9559	65.00	281.2	278.1	98.89%	10.9630	65.00	92.0	50	54.33%										
55	3.8500	19.8515	65.00	308.9	307.2	99.46%	10.9630	65.00	92.0	50	54.33%										
60	4.2000	21.2593	65.00	354.9	336.3	94.75%	11.0425	65.00	93.4	50	53.53%	17.8188	65.00	248.0	222	89.45%	11.0425	65.00	93.4	50	53.53%
65	4.5500	22.2288	65.00	388.5	365.3	94.04%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	11.0425	65.00	93.4	50	53.53%
70	4.9000	23.1984	64.37	419.4	394.4	94.02%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	11.0425	65.00	93.4	50	53.53%
75	5.2500	24.1679	63.01	446.1	423.4	94.93%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	11.0425	65.00	93.4	50	53.53%
80	5.6000	25.1374	61.66	472.6	452.5	95.75%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	11.0425	65.00	93.4	50	53.53%
85	5.9500	26.1069	60.30	498.9	481.6	96.52%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	11.0425	65.00	93.4	50	53.53%
90	6.3000	27.0765	58.94	525.0	510.6	97.26%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	11.0425	65.00	93.4	50	53.53%
95	6.6500	28.0460	57.58	550.7	539.7	98.00%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	11.0425	65.00	93.4	50	53.53%
100	7.0000	29.0155	56.22	575.9	568.8	98.76%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	11.0425	65.00	93.4	50	53.53%
105	7.3500	29.9850	54.86	600.5	597.8	99.54%	11.0425	65.00	93.4	50	53.53%	20.4250	65.00	327.2	300	91.68%	11.0425	65.00	93.4	50	53.53%
110	7.7000	30.5796	64.74	977.1	626.9	64.16%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	25.6795	60.90	487.4	469	96.18%
115	8.0500	31.5491	63.72	1024.4	655.9	64.03%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	25.6795	60.90	487.4	469	96.18%
120	8.4000	32.5186	62.70	1071.7	685.0	63.92%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	25.6795	60.90	487.4	469	96.18%
125	8.7500	33.4881	61.68	1118.9	714.1	63.82%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	25.6795	60.90	487.4	469	96.18%
130	9.1000	34.4577	60.67	1165.7	743.1	63.75%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	25.6795	60.90	487.4	469	96.18%
135	9.4500	35.4272	59.65	1212.3	772.2	63.70%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	26.7220	59.43	515.5	500	96.99%
140	9.8000	36.3967	58.63	1258.4	801.3	63.67%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	27.7645	57.97	543.3	531	97.79%
145	10.1500	37.3662	57.61	1304.0	830.3	63.67%	11.0425	65.00	93.4	50	53.53%	19.3304	65.00	292.6	267	91.30%	28.8070	56.51	570.5	563	98.59%
150	10.5000	38.3358	56.59	1349.0	859.4	63.71%	11.0425	65.00	93.4	50	53.53%	20.6601	65.00	315.5	289	91.62%	29.8495	55.05	597.1	594	99.43%



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WPE Class:	H6	7125 Lb Load	Max. One Section Length =	53	ft	Max. Bot Section Length =	53	ft
Top Dia. (in) =	10.5625		Max. Top Section Length =	47.5	ft	Bot Section Thk. (if 2 sections) =	0.25	in
One Section Taper =	0.1563		Top Section Length for 55' - 65' =	40	ft	Bot Section Thk. (if 3 sections) =	0.25	in
Multi-Section Taper =	0.1673		Top Section Thk. =	0.25	in	Bot Section Thk. (Height > 120') =	0.25	in
Taper for height > 120' =	0.1673							
Shape (sides) =	12		Max. Mid Section Length =	36	ft	Material Grade =	65	ksi
Slip joint Factor =	1.65		Mid Section Thk. =	0.25	in	Bend Radius =	4	x thickness
Embedded length (ft) =	10%	Ht + 2				Min. GL to Bot of Slip-Joint =	7	ft
Fixity from Bot (ft) =	7%	Ht + 0						

H6

LD7

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	10.5625	15.2515	0.25	1039													1039	5.0000	14.4700	65.00	221.19	213.7	163.9	76.70%
35	35	10.5625	16.0330	0.25	1249													1249	5.5000	15.1734	65.00	243.82	235.5	195.9	83.20%
40	40	10.5625	16.8145	0.25	1470													1470	6.0000	15.8767	65.00	267.54	258.4	228.0	88.23%
45	45	10.5625	17.5960	0.25	1702													1702	6.5000	16.5801	65.00	292.36	282.4	260.1	92.09%
50	50	10.5625	18.3775	0.25	1945													1945	7.0000	17.2834	65.00	318.29	307.4	292.1	95.02%
55	55	10.5625	19.1590	0.25	2198													2198	7.5000	17.9868	65.00	345.31	333.5	324.2	97.19%
60	40	10.5625	17.2545	0.25	1494							2.5	22.5000	16.3363	20.1005	0.25	1106	2600	8.0000	18.7621	65.00	376.38	363.6	356.3	97.99%
65	47.5	10.5625	18.5093	0.25	1856							2.5	20.0000	17.5910	20.9370	0.25	1040	2896	8.5000	19.5150	65.00	407.83	393.9	388.3	98.57%
70	47.5	10.5625	18.5093	0.25	1856							2.5	25.0000	17.5910	21.7735	0.25	1329	3185	9.0000	20.2678	65.00	440.54	425.5	420.4	98.79%
75	47.5	10.5625	18.5093	0.25	1856							2.5	30.0000	17.5910	22.6100	0.25	1629	3485	9.5000	21.0207	65.00	474.51	458.3	452.4	98.71%
80	47.5	10.5625	18.5093	0.25	1856							2.5	35.0000	17.5910	23.4465	0.25	1940	3797	10.0000	21.7735	65.00	509.75	492.4	484.5	98.40%
85	47.5	10.5625	18.5093	0.25	1856							2.5	40.0000	17.5910	24.2830	0.25	2263	4120	10.5000	22.5264	65.00	546.24	527.6	516.6	97.90%
90	47.5	10.5625	18.5093	0.25	1856							2.5	45.0000	17.5910	25.1195	0.25	2598	4454	11.0000	23.2792	65.00	584.00	564.1	548.6	97.26%
95	47.5	10.5625	18.5093	0.25	1856							2.5	50.0000	17.5910	25.9560	0.25	2944	4800	11.5000	24.0321	65.00	623.02	601.8	580.7	96.49%
100	47.5	10.5625	18.5093	0.25	1856							2.5	55.0000	17.5910	26.7925	0.25	3301	5157	12.0000	24.7849	65.00	663.30	640.7	612.8	95.64%
105	53	10.5625	19.4294	0.25	2138							2.75	54.7500	18.4693	27.6290	0.25	3414	5552	12.5000	25.5378	65.00	704.84	680.8	644.8	94.71%
110	47.5	10.5625	18.5093	0.25	1856	2.5	36.0000	17.5910	23.6138	0.25	2004	3.25	32.2500	22.5701	27.9655	0.25	2207	6067	13.0000	25.7906	65.00	719.08	694.6	676.9	97.45%
115	47.5	10.5625	18.5093	0.25	1856	2.5	36.0000	17.5910	23.6138	0.25	2004	3.25	37.2500	22.5701	28.8020	0.25	2592	6452	13.5000	26.5435	65.00	762.31	736.3	708.9	96.28%
120	47.5	10.5625	18.5093	0.25	1856	2.5	36.0000	17.5910	23.6138	0.25	2004	3.25	42.2500	22.5701	29.6385	0.25	2988	6848	14.0000	27.2963	65.00	806.80	779.3	741.0	95.08%
125	47.5	10.5625	18.5093	0.25	1856	2.5	36.0000	17.5910	23.6138	0.25	2004	3.25	47.2500	22.5701	30.4750	0.25	3396	7256	14.5000	28.0492	65.00	852.55	823.5	773.1	93.88%
130	47.5	10.5625	18.5093	0.25	1856	2.5	36.0000	17.5910	23.6138	0.25	2004	3.25	52.2500	22.5701	31.3115	0.25	3815	7675	15.0000	28.8020	65.00	899.56	868.9	805.1	92.66%
135	47.5	10.5625	18.5093	0.25	1856	2.5	40.5000	17.5910	24.3667	0.25	2296	3.5	53.0000	23.2811	32.1480	0.25	3982	8134	15.5000	29.5549	65.00	947.84	915.5	837.2	91.44%
140	47.5	10.5625	18.5093	0.25	1856	2.5	45.5000	17.5910	25.2032	0.25	2632	3.5	53.0000	24.1176	32.9845	0.25	4103	8591	16.0000	30.3077	65.03	997.79	963.8	869.3	90.19%
145	47.5	10.5625	18.5093	0.25	1856	2.5	50.7500	17.5910	26.0815	0.25	2997	3.75	53.0000	24.9541	33.8210	0.25	4224	9077	16.5000	31.0606	64.24	1035.85	1000.6	901.3	90.08%
150	50.5	10.5625	19.0112	0.25	2008	2.75	53.0000	18.0511	26.9180	0.25	3223	3.75	53.0000	25.7906	34.6575	0.25	4345	9577	17.0000	31.8134	63.44	1073.91	1037.3	933.4	89.98%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	14.9233	65.00	227.6	184.5	81.07%	11.3440	65.00	129.4	57	44.04%										
35	2.4500	15.6501	65.00	250.9	217.7	86.75%	11.3440	65.00	129.4	57	44.04%										
40	2.8000	16.3769	65.00	275.4	250.8	91.08%	11.3440	65.00	129.4	57	44.04%										
45	3.1500	17.1037	65.00	300.9	283.9	94.35%	11.3440	65.00	129.4	57	44.04%										
50	3.5000	17.8305	65.00	327.7	317.1	96.77%	11.3440	65.00	129.4	57	44.04%										
55	3.8500	18.5572	65.00	355.5	350.2	98.51%	11.3440	65.00	129.4	57	44.04%										
60	4.2000	19.3978	65.00	389.1	383.3	98.51%	11.3990	65.00	130.7	57	43.61%	16.8363	65.00	291.4	253	86.80%	11.3990	65.00	130.7	57	43.61%
65	4.5500	20.1758	65.00	421.6	416.5	98.78%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	11.3990	65.00	130.7	57	43.61%
70	4.9000	20.9537	65.00	455.4	449.6	98.73%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	11.3990	65.00	130.7	57	43.61%
75	5.2500	21.7317	65.00	490.5	482.7	98.42%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	11.3990	65.00	130.7	57	43.61%
80	5.6000	22.5096	65.00	526.8	515.9	97.92%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	11.3990	65.00	130.7	57	43.61%
85	5.9500	23.2876	65.00	564.5	549.0	97.25%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	11.3990	65.00	130.7	57	43.61%
90	6.3000	24.0655	65.00	603.5	582.1	96.46%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	11.3990	65.00	130.7	57	43.61%
95	6.6500	24.8435	65.00	643.8	615.2	95.57%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	11.3990	65.00	130.7	57	43.61%
100	7.0000	25.6214	65.00	685.4	648.4	94.60%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	11.3990	65.00	130.7	57	43.61%
105	7.3500	26.3993	65.00	728.2	681.5	93.58%	11.3990	65.00	130.7	57	43.61%	18.9693	65.00	371.8	344	92.46%	11.3990	65.00	130.7	57	43.61%
110	7.7000	26.6773	65.00	743.9	714.6	96.07%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	23.0701	65.00	553.8	540	97.45%
115	8.0500	27.4552	65.00	788.5	747.8	94.83%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	23.0701	65.00	553.8	540	97.45%
120	8.4000	28.2332	65.00	834.5	780.9	93.58%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	23.0701	65.00	553.8	540	97.45%
125	8.7500	29.0111	65.00	881.7	814.0	92.32%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	23.0701	65.00	553.8	540	97.45%
130	9.1000	29.7891	65.00	930.3	847.2	91.06%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	23.0701	65.00	553.8	540	97.45%
135	9.4500	30.5670	64.75	976.5	880.3	90.15%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	23.7811	65.00	589.1	570	96.76%
140	9.8000	31.3450	63.94	1014.4	913.4	90.04%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	24.6176	65.00	631.9	606	95.83%
145	10.1500	32.1229	63.12	1052.4	946.6	89.94%	11.3990	65.00	130.7	57	43.61%	18.0910	65.00	337.5	306	90.78%	25.4541	65.00	676.3	641	94.82%
150	10.5000	32.9009	62.30	1090.3	979.7	89.85%	11.3990	65.00	130.7	57	43.61%	18.5511	65.00	355.3	326	91.75%	26.2906	65.00	722.2	677	93.73%



8653 E. Highway 67
Alvarado, TX 76009
Office: 817-852-1700
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WPE Class: H7 8000 Lb Load Max. One Section Length = 55 ft
Top Dia. (in) = 10.5625 Max. Top Section Length = 47.5 ft
One Section Taper = 0.1765 Top Section Length for 55' - 65' = 40 ft
Multi-Section Taper = 0.1854 Top Section Length Thk. = 0.25 in
Taper for height > 120' = 0.1854
Shape (sides) = 12
Slip joint Factor = 1.65
Max. Mid Section Length = 36 ft
Mid Section Thk. = 0.25 in
Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.25 in
Bot Section Thk. (if 3 sections) = 0.25 in
Bot Section Thk. (Height > 120') = 0.25 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

H7

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	10.5625	15.8575	0.25	1063													1063	5.0000	14.9750	65.00	237.32	229.2	184.0	80.27%
35	35	10.5625	16.7400	0.25	1283													1283	5.5000	15.7693	65.00	263.84	254.9	220.0	86.32%
40	40	10.5625	17.6225	0.25	1515													1515	6.0000	16.5635	65.00	291.77	281.8	256.0	90.84%
45	45	10.5625	18.5050	0.25	1758													1758	6.5000	17.3578	65.00	321.09	310.2	292.0	94.15%
50	50	10.5625	19.3875	0.25	2014													2014	7.0000	18.1520	65.00	351.82	339.8	328.0	96.52%
55	55	10.5625	20.2700	0.25	2282													2282	7.5000	18.9463	65.00	383.96	370.9	364.0	98.15%
60	40	10.5625	17.9785	0.25	1534							2.5	22.5000	17.0150	21.1865	0.25	1160	2694	8.0000	19.7033	65.00	415.90	401.7	400.0	99.57%
65	47.5	10.5625	19.3690	0.25	1912							2.75	20.2500	18.3592	22.1135	0.25	1107	3019	8.5000	20.5376	65.00	452.57	437.1	436.0	99.74%
70	47.5	10.5625	19.3690	0.25	1912							2.75	25.2500	18.3592	23.0405	0.25	1412	3324	9.0000	21.3719	65.00	490.79	474.1	472.0	99.56%
75	47.5	10.5625	19.3690	0.25	1912							2.75	30.2500	18.3592	23.9675	0.25	1730	3642	9.5000	22.2062	65.00	530.57	512.5	508.0	99.12%
80	47.5	10.5625	19.3690	0.25	1912							2.75	35.2500	18.3592	24.8945	0.25	2061	3973	10.0000	23.0405	65.00	571.89	552.4	544.0	98.48%
85	47.5	10.5625	19.3690	0.25	1912							2.75	40.2500	18.3592	25.8215	0.25	2405	4317	10.5000	23.8748	65.00	614.76	593.8	580.0	97.67%
90	47.5	10.5625	19.3690	0.25	1912							2.75	45.2500	18.3592	26.7485	0.25	2761	4673	11.0000	24.7091	65.00	659.19	636.7	616.0	96.74%
95	47.5	10.5625	19.3690	0.25	1912							2.75	50.2500	18.3592	27.6755	0.25	3129	5041	11.5000	25.5434	65.00	705.16	681.1	652.0	95.72%
100	47.5	10.5625	19.3690	0.25	1912							2.75	55.2500	18.3592	28.6025	0.25	3511	5423	12.0000	26.3777	65.00	752.68	727.0	688.0	94.63%
105	53	10.5625	20.3887	0.25	2207							2.75	54.7500	19.3789	29.5295	0.25	3625	5832	12.5000	27.2120	65.00	801.75	774.4	724.0	93.49%
110	47.5	10.5625	19.3690	0.25	1912	2.75	36.0000	18.3592	25.0336	0.25	2112	3.5	32.7500	23.8847	29.9565	0.25	2389	6413	13.0000	27.5463	65.00	821.85	793.8	760.0	95.74%
115	47.5	10.5625	19.3690	0.25	1912	2.75	36.0000	18.3592	25.0336	0.25	2112	3.5	37.7500	23.8847	30.8835	0.25	2802	6826	13.5000	28.3806	65.00	873.09	843.3	796.0	94.39%
120	47.5	10.5625	19.3690	0.25	1912	2.75	36.0000	18.3592	25.0336	0.25	2112	3.5	42.7500	23.8847	31.8105	0.25	3227	7251	14.0000	29.2149	65.00	925.88	894.3	832.0	93.03%
125	47.5	10.5625	19.3690	0.25	1912	2.75	36.0000	18.3592	25.0336	0.25	2112	3.5	47.7500	23.8847	32.7375	0.25	3665	7689	14.5000	30.0492	65.00	980.22	946.8	868.0	91.68%
130	47.5	10.5625	19.3690	0.25	1912	2.75	36.0000	18.3592	25.0336	0.25	2112	3.5	52.7500	23.8847	33.6645	0.25	4116	8140	15.0000	30.8835	64.42	1026.90	991.9	904.0	91.14%
135	47.5	10.5625	19.3690	0.25	1912	2.75	40.7500	18.3592	25.9142	0.25	2440	3.5	53.0000	24.7653	34.5915	0.25	4266	8618	15.5000	31.7178	63.55	1069.08	1032.7	940.0	91.03%
140	47.5	10.5625	19.3690	0.25	1912	2.75	46.0000	18.3592	26.8876	0.25	2815	3.75	53.0000	25.6923	35.5185	0.25	4401	9128	16.0000	32.5521	62.67	1111.20	1073.3	976.0	90.93%
145	47.5	10.5625	19.3690	0.25	1912	2.75	51.2500	18.3592	27.8609	0.25	3205	4	53.0000	26.6193	36.4455	0.25	4535	9652	16.5000	33.3864	61.79	1153.21	1113.9	1012.0	90.85%
150	50.75	10.5625	19.9716	0.25	2085	2.75	53.0000	18.9617	28.7879	0.25	3425	4	53.0000	27.5463	37.3725	0.25	4669	10179	17.0000	34.2207	60.92	1195.03	1154.3	1048.0	90.79%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	15.4869	65.00	245.6	207.2	84.37%	11.4450	65.00	131.8	64	48.56%										
35	2.4500	16.3076	65.00	273.0	244.4	89.53%	11.4450	65.00	131.8	64	48.56%										
40	2.8000	17.1283	65.00	301.8	281.6	93.30%	11.4450	65.00	131.8	64	48.56%										
45	3.1500	17.9490	65.00	332.1	318.8	95.99%	11.4450	65.00	131.8	64	48.56%										
50	3.5000	18.7698	65.00	363.9	356.0	97.84%	11.4450	65.00	131.8	64	48.56%										
55	3.8500	19.5905	65.00	397.0	393.2	99.03%	11.4450	65.00	131.8	64	48.56%										
60	4.2000	20.4078	65.00	431.5	430.4	99.74%	11.4895	65.00	132.9	64	48.17%	17.5150	65.00	315.9	284	89.90%	19.8789	65.00	409.1	386	94.36%
65	4.5500	21.2699	65.00	469.5	467.6	99.60%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	18.8592	65.00	367.4	342	93.09%
70	4.9000	22.1320	65.00	509.0	504.8	99.17%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	18.8592	65.00	367.4	342	93.09%
75	5.2500	22.9942	65.00	550.1	542.0	98.52%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	18.8592	65.00	367.4	342	93.09%
80	5.6000	23.8563	65.00	592.9	579.2	97.69%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	18.8592	65.00	367.4	342	93.09%
85	5.9500	24.7184	65.00	637.2	616.4	96.73%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	18.8592	65.00	367.4	342	93.09%
90	6.3000	25.5805	65.00	683.1	653.6	95.68%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	18.8592	65.00	367.4	342	93.09%
95	6.6500	26.4426	65.00	730.7	690.8	94.54%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	18.8592	65.00	367.4	342	93.09%
100	7.0000	27.3047	65.00	779.8	728.0	93.36%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	18.8592	65.00	367.4	342	93.09%
105	7.3500	28.1668	65.00	830.5	765.2	92.14%	11.4895	65.00	132.9	64	48.17%	19.8789	65.00	409.1	386	94.36%	18.8592	65.00	367.4	342	93.09%
110	7.7000	28.5289	65.00	852.3	802.4	94.15%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	24.3847	65.00	619.9	602	97.12%
115	8.0500	29.3910	65.00	905.3	839.6	92.74%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	24.3847	65.00	619.9	602	97.12%
120	8.4000	30.2531	65.00	959.9	876.8	91.34%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	24.3847	65.00	619.9	602	97.12%
125	8.7500	31.1153	64.18	1003.2	914.0	91.11%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	24.3847	65.00	619.9	602	97.12%
130	9.1000	31.9774	63.27	1045.3	951.2	91.00%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	24.3847	65.00	619.9	602	97.12%
135	9.4500	32.8395	62.37	1087.3	988.4	90.90%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	25.2653	65.00	666.2	640	96.07%
140	9.8000	33.7016	61.46	1129.2	1025.6	90.83%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	26.1923	65.00	716.7	680	94.88%
145	10.1500	34.5637	60.55	1170.9	1062.8	90.77%	11.4895	65.00	132.9	64	48.17%	18.8592	65.00	367.4	342	93.09%	27.1193	65.00	769.1	720	93.62%
150	10.5000	35.4258	59.65	1212.2	1100.0	90.74%	11.4895	65.00	132.9	64	48.17%	19.4617	65.00	391.7	368	93.94%	28.0463	65.00	823.3	760	92.31%



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WPE Class: H8 9000 Lb Load

Top Dia. (in) = 11
One Section Taper = 0.1903
Multi-Section Taper = 0.1994
Taper for height > 120' = 0.1994
Shape (sides) = 12
Slip joint Factor = 1.65

Max. One Section Length = 55 ft

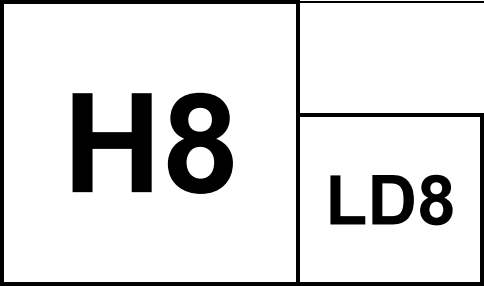
Max. Top Section Length = 47.5 ft
Top Section Length for 55' - 65' = 40 ft
Top Section Thk. = 0.25 in

Max. Mid Section Length = 36 ft
Mid Section Thk. = 0.25 in

Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.25 in
Bot Section Thk. (if 3 sections) = 0.25 in
Bot Section Thk. (Height > 120') = 0.25 in

Material Grade = 65 ksi
Bend Radius = 4 x thickness

Min. GL to Bot of Slip-Joint = 7 ft



Height	Top Section					Middle Section						Bottom Section						Total	Ground Line						
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	11	16.7090	0.25	1116	0	0.0000	0.0000	0.0000	0	0	0	0.0000	0.0000	0.0000	0	0	1116	5.0000	15.7575	65.00	263.44	254.5	207.0	81.35%
35	35	11	17.6605	0.25	1348	0	0.0000	0.0000	0.0000	0	0	0	0.0000	0.0000	0.0000	0	0	1348	5.5000	16.6139	65.00	293.58	283.6	247.5	87.28%
40	40	11	18.6120	0.25	1593	0	0.0000	0.0000	0.0000	0	0	0	0.0000	0.0000	0.0000	0	0	1593	6.0000	17.4702	65.00	325.36	314.3	288.0	91.64%
45	45	11	19.5635	0.25	1850	0	0.0000	0.0000	0.0000	0	0	0	0.0000	0.0000	0.0000	0	0	1850	6.5000	18.3266	65.00	358.76	346.5	328.5	94.79%
50	50	11	20.5150	0.25	2121	0	0.0000	0.0000	0.0000	0	0	0	0.0000	0.0000	0.0000	0	0	2121	7.0000	19.1829	65.00	393.80	380.4	369.0	97.01%
55	55	11	21.4665	0.25	2405	0	0.0000	0.0000	0.0000	0	0	0	0.0000	0.0000	0.0000	0	0	2405	7.5000	20.0393	65.00	430.48	415.8	409.5	98.48%
60	40	11	18.9760	0.25	1613	0	0.0000	0.0000	0.0000	0	0	2.75	22.7500	17.9277	22.4640	0.25	1241	2854	8.0000	20.8688	65.00	467.56	451.6	450.0	99.64%
65	47.5	11	20.4715	0.25	2012	0	0.0000	0.0000	0.0000	0	0	2.75	20.2500	19.4232	23.4610	0.25	1174	3186	8.5000	21.7661	65.00	509.39	492.0	490.5	99.69%
70	47.5	11	20.4715	0.25	2012	0	0.0000	0.0000	0.0000	0	0	2.75	25.2500	19.4232	24.4580	0.25	1498	3510	9.0000	22.6634	65.00	553.02	534.2	531.0	99.41%
75	47.5	11	20.4715	0.25	2012	0	0.0000	0.0000	0.0000	0	0	2.75	30.2500	19.4232	25.4550	0.25	1836	3848	9.5000	23.5607	65.00	598.44	578.1	571.5	98.87%
80	47.5	11	20.4715	0.25	2012	0	0.0000	0.0000	0.0000	0	0	2.75	35.2500	19.4232	26.4520	0.25	2188	4200	10.0000	24.4580	65.00	645.65	623.7	612.0	98.13%
85	47.5	11	20.4715	0.25	2012	0	0.0000	0.0000	0.0000	0	0	2.75	40.2500	19.4232	27.4490	0.25	2553	4565	10.5000	25.3553	65.00	694.66	671.0	652.5	97.24%
90	47.5	11	20.4715	0.25	2012	0	0.0000	0.0000	0.0000	0	0	2.75	45.2500	19.4232	28.4460	0.25	2932	4944	11.0000	26.2526	65.00	745.46	720.1	693.0	96.24%
95	47.5	11	20.4715	0.25	2012	0	0.0000	0.0000	0.0000	0	0	2.75	50.2500	19.4232	29.4430	0.25	3324	5336	11.5000	27.1499	65.00	798.05	770.9	733.5	95.15%
100	47.5	11	20.4715	0.25	2012	0	0.0000	0.0000	0.0000	0	0	2.75	55.2500	19.4232	30.4400	0.25	3730	5742	12.0000	28.0472	65.00	852.43	823.4	774.0	94.00%
105	53	11	21.5682	0.25	2324	0	0.0000	0.0000	0.0000	0	0	3	55.0000	20.4700	31.4370	0.25	3867	6191	12.5000	28.9445	65.00	908.60	877.6	814.5	92.81%
110	47.5	11	20.4715	0.25	2012	2.75	36.0000	19.4232	26.6016	0.25	2241	3.75	33.0000	25.3538	31.9340	0.25	2563	6816	13.0000	29.3418	65.00	934.05	902.2	855.0	94.77%
115	47.5	11	20.4715	0.25	2012	2.75	36.0000	19.4232	26.6016	0.25	2241	3.75	38.0000	25.3538	32.9310	0.25	3003	7257	13.5000	30.2391	65.00	992.81	959.0	895.5	93.38%
120	47.5	11	20.4715	0.25	2012	2.75	36.0000	19.4232	26.6016	0.25	2241	3.75	43.0000	25.3538	33.9280	0.25	3457	7710	14.0000	31.1364	61.16	1039.69	1004.3	936.0	93.20%
125	47.5	11	20.4715	0.25	2012	2.75	36.0000	19.4232	26.6016	0.25	2241	3.75	48.0000	25.3538	34.9250	0.25	3924	8178	14.5000	32.0337	63.21	1085.04	1048.1	976.5	93.17%
130	47.5	11	20.4715	0.25	2012	2.75	36.0000	19.4232	26.6016	0.25	2241	3.75	53.0000	25.3538	35.9220	0.25	4405	8659	15.0000	32.9310	62.27	1130.30	1091.8	1017.0	93.15%
135	47.5	11	20.4715	0.25	2012	2.75	41.0000	19.4232	27.5986	0.25	2609	3.75	53.0000	26.3508	36.9190	0.25	4550	9171	15.5000	33.8283	61.33	1175.39	1135.3	1057.5	93.14%
140	47.5	11	20.4715	0.25	2012	2.75	46.2500	19.4232	28.6454	0.25	3009	4	53.0000	27.3478	37.9160	0.25	4694	9715	16.0000	34.7256	60.38	1220.23	1178.7	1098.0	93.16%
145	47.5	11	20.4715	0.25	2012	2.75	51.5000	19.4232	29.6923	0.25	3424	4.25	53.0000	28.3448	38.9130	0.25	4839	10275	16.5000	35.6229	59.44	1264.75	1221.7	1138.5	93.19%
150	51.25	11	21.2193	0.25	2223	3	53.0000	20.1211	30.6893	0.25	3647	4.25	53.0000	29.3418	39.9100	0.25	4984	10854	17.0000	36.5202	58.50	1308.86	1264.3	1179.0	93.26%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	16.3094	65.00	273.0	233.1	85.37%	11.9515	65.00	144.1	72	49.95%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
35	2.4500	17.1943	65.00	304.2	275.0	90.38%	11.9515	65.00	144.1	72	49.95%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
40	2.8000	18.0792	65.00	337.1	316.8	93.99%	11.9515	65.00	144.1	72	49.95%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
45	3.1500	18.9641	65.00	371.6	358.7	96.52%	11.9515	65.00	144.1	72	49.95%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
50	3.5000	19.8490	65.00	407.8	400.5	98.21%	11.9515	65.00	144.1	72	49.95%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
55	3.8500	20.7338	65.00	445.7	442.4	99.25%	11.9515	65.00	144.1	72	49.95%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
60	4.2000	21.6265	65.00	485.6	484.2	99.70%	11.9970	65.00	145.3	72	49.56%	18.4277	65.00	350.5	317	90.53%	0.0000	0.00	0.0	0	0.00%
65	4.5500	22.5537	65.00	528.9	526.1	99.45%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	0.0000	0.00	0.0	0	0.00%
70	4.9000	23.4809	65.00	574.1	567.9	98.92%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	0.0000	0.00	0.0	0	0.00%
75	5.2500	24.4082	65.00	621.1	609.8	98.18%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	0.0000	0.00	0.0	0	0.00%
80	5.6000	25.3354	65.00	669.9	651.6	97.27%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	0.0000	0.00	0.0	0	0.00%
85	5.9500	26.2626	65.00	720.6	693.5	96.23%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	0.0000	0.00	0.0	0	0.00%
90	6.3000	27.1898	65.00	773.2	735.3	95.10%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	0.0000	0.00	0.0	0	0.00%
95	6.6500	28.1170	65.00	827.5	777.2	93.91%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	0.0000	0.00	0.0	0	0.00%
100	7.0000	29.0442	65.00	883.8	819.0	92.67%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	0.0000	0.00	0.0	0	0.00%
105	7.3500	29.9714	65.00	941.9	860.9	91.40%	11.9970	65.00	145.3	72	49.56%	20.9700	65.00	456.1	432	94.72%	0.0000	0.00	0.0	0	0.00%
110	7.7000	30.3986	64.93	968.2	902.7	93.23%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	25.8538	65.00	698.0	675	96.70%
115	8.0500	31.3258	63.96	1013.5	944.6	93.20%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	25.8538	65.00	698.0	675	96.70%
120	8.4000	32.2530	62.98	1058.8	986.4	93.17%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	25.8538	65.00	698.0	675	96.70%
125	8.7500	33.1803	62.01	1103.9	1028.3	93.15%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	25.8538	65.00	698.0	675	96.70%
130	9.1000	34.1075	61.03	1148.8	1070.1	93.15%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	25.8538	65.00	698.0	675	96.70%
135	9.4500	35.0347	60.06	1193.5	1112.0	93.17%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	26.8508	65.00	753.7	720	95.53%
140	9.8000	35.9619	59.09	1237.8	1153.8	93.21%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	27.8478	65.00	811.6	765	94.26%
145	10.1500	36.8891	58.11	1281.6	1195.7	93.29%	11.9970	65.00	145.3	72	49.56%	19.9232	65.00	410.9	385	93.63%	28.8448	65.00	871.5	810	92.94%
150	10.5000	37.8163	57.14	1325.0	1237.5	93.40%	11.9970	65.00	145.3	72	49.56%	20.6211	65.00	440.8	416	94.44%	29.8418	65.00	933.6	855	91.58%



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WPE Class:	H9	10000 Lb Load	Max. One Section Length =	55	ft	Max. Bot Section Length =	53	ft
Top Dia. (in) =	11.75		Max. Top Section Length =	47.5	ft	Bot Section Thk. (if 2 sections) =	0.25	in
One Section Taper =	0.1975		Top Section Length for 55' - 65' =	40	ft	Bot Section Thk. (if 3 sections) =	0.25	in
Multi-Section Taper =	0.2065		Top Section Thk. =	0.25	in	Bot Section Thk. (Height > 120') =	0.25	in
Taper for height > 120' =	0.2065							
Shape (sides) =	12		Max. Mid Section Length =	36	ft	Material Grade =	65	ksi
Slip joint Factor =	1.65		Mid Section Thk. =	0.25	in	Bend Radius =	4	x thickness
Embedded length (ft) =	10%	Ht + 2				Min. GL to Bot of Slip-Joint =	7	ft
Fixity from Bot (ft) =	7%	Ht + 0						

H9

LD9

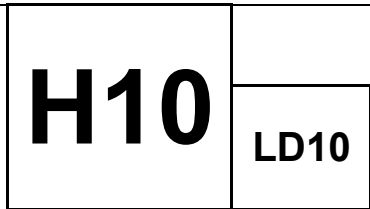
Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	11.75	17.6750	0.25	1187													1187	5.0000	16.6875	65.00	296.25	286.2	230.0	80.38%
35	35	11.75	18.6625	0.25	1432													1432	5.5000	17.5763	65.00	329.41	318.2	275.0	86.43%
40	40	11.75	19.6500	0.25	1690													1690	6.0000	18.4650	65.00	364.32	351.9	320.0	90.93%
45	45	11.75	20.6375	0.25	1963													1963	6.5000	19.3538	65.00	400.99	387.3	365.0	94.24%
50	50	11.75	21.6250	0.25	2248													2248	7.0000	20.2425	65.00	439.42	424.4	410.0	96.60%
55	55	11.75	22.6125	0.25	2547													2547	7.5000	21.1313	65.00	479.61	463.3	455.0	98.22%
60	40	11.75	20.0100	0.25	1710		2.75	22.7500	18.9421	23.6400	0.25	1309						3019	8.0000	21.9880	65.00	520.02	502.3	500.0	99.54%
65	47.5	11.75	21.5588	0.25	2131		3	20.5000	20.4393	24.6725	0.25	1251						3382	8.5000	22.9173	65.00	565.69	546.4	545.0	99.74%
70	47.5	11.75	21.5588	0.25	2131		3	25.5000	20.4393	25.7050	0.25	1592						3723	9.0000	23.8465	65.00	613.28	592.4	590.0	99.60%
75	47.5	11.75	21.5588	0.25	2131		3	30.5000	20.4393	26.7375	0.25	1947						4078	9.5000	24.7758	65.00	662.80	640.2	635.0	99.18%
80	47.5	11.75	21.5588	0.25	2131		3	35.5000	20.4393	27.7700	0.25	2316						4448	10.0000	25.7050	65.00	714.24	689.9	680.0	98.56%
85	47.5	11.75	21.5588	0.25	2131		3	40.5000	20.4393	28.8025	0.25	2700						4831	10.5000	26.6343	65.00	767.60	741.4	725.0	97.78%
90	47.5	11.75	21.5588	0.25	2131		3	45.5000	20.4393	29.8350	0.25	3097						5229	11.0000	27.5635	65.00	822.89	794.9	770.0	96.87%
95	47.5	11.75	21.5588	0.25	2131		3	50.5000	20.4393	30.8675	0.25	3509						5640	11.5000	28.4928	65.00	880.10	850.1	815.0	95.87%
100	47.5	11.75	21.5588	0.25	2131		3	55.5000	20.4393	31.9000	0.25	3935						6066	12.0000	29.4220	65.00	939.23	907.2	860.0	94.79%
105	53.5	11.75	22.7978	0.25	2491		3.25	54.7500	21.6266	32.9325	0.25	4048						6539	12.5000	30.3513	64.98	999.99	965.9	905.0	93.69%
110	47.5	11.75	21.5588	0.25	2131	3	36.0000	20.4393	27.8733	0.25	2354	4	33.5000	26.5473	33.4650	0.25	2727	7212	13.0000	30.7805	64.53	1021.69	986.9	950.0	96.26%
115	47.5	11.75	21.5588	0.25	2131	3	36.0000	20.4393	27.8733	0.25	2354	4	38.5000	26.5473	34.4975	0.25	3188	7673	13.5000	31.7098	63.55	1068.67	1032.3	995.0	96.39%
120	47.5	11.75	21.5588	0.25	2131	3	36.0000	20.4393	27.8733	0.25	2354	4	43.5000	26.5473	35.5300	0.25	3663	8149	14.0000	32.6390	62.58	1115.59	1077.6	1040.0	96.51%
125	47.5	11.75	21.5588	0.25	2131	3	36.0000	20.4393	27.8733	0.25	2354	4	48.5000	26.5473	36.5625	0.25	4153	8638	14.5000	33.5683	61.60	1162.34	1122.7	1085.0	96.64%
130	47.5	11.75	21.5588	0.25	2131	3	36.5000	20.4393	27.9765	0.25	2392	4	53.0000	26.6505	37.5950	0.25	4621	9144	15.0000	34.4975	60.62	1208.86	1167.7	1130.0	96.77%
135	47.5	11.75	21.5588	0.25	2131	3	41.5000	20.4393	29.0090	0.25	2778	4	53.0000	27.6830	38.6275	0.25	4770	9680	15.5000	35.4268	59.65	1255.05	1212.3	1175.0	96.92%
140	47.5	11.75	21.5588	0.25	2131	3	46.7500	20.4393	30.0931	0.25	3199	4.25	53.0000	28.7155	39.6600	0.25	4920	10250	16.0000	36.3560	58.67	1300.82	1256.5	1220.0	97.10%
145	47.5	11.75	21.5588	0.25	2131	3	51.7500	20.4393	31.1256	0.25	3614	4.25	53.0000	29.7480	40.6925	0.25	5070	10815	16.5000	37.2853	57.69	1346.09	1300.2	1265.0	97.29%
150	51.75	11.75	22.4364	0.25	2384	3.25	53.0000	21.2653	32.2098	0.25	3840	4.5	53.0000	30.7805	41.7250	0.25	5219	11444	17.0000	38.2145	56.72	1390.78	1343.4	1310.0	97.51%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	17.2603	65.00	306.6	259.0	84.47%	12.7375	65.00	164.4	80	48.67%										
35	2.4500	18.1786	65.00	340.9	305.5	89.63%	12.7375	65.00	164.4	80	48.67%										
40	2.8000	19.0970	65.00	376.9	352.0	93.39%	12.7375	65.00	164.4	80	48.67%										
45	3.1500	20.0154	65.00	414.8	398.5	96.07%	12.7375	65.00	164.4	80	48.67%										
50	3.5000	20.9338	65.00	454.5	445.0	97.91%	12.7375	65.00	164.4	80	48.67%										
55	3.8500	21.8521	65.00	496.0	491.5	99.09%	12.7375	65.00	164.4	80	48.67%										
60	4.2000	22.7727	65.00	539.4	538.0	99.74%	12.7825	65.00	165.6	80	48.32%	19.4421	65.00	390.9	353	90.17%	12.7825	65.00	165.6	80	48.32%
65	4.5500	23.7329	65.00	586.7	584.5	99.63%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	12.7825	65.00	165.6	80	48.32%
70	4.9000	24.6932	65.00	635.9	631.0	99.23%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	12.7825	65.00	165.6	80	48.32%
75	5.2500	25.6534	65.00	687.1	677.5	98.60%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	12.7825	65.00	165.6	80	48.32%
80	5.6000	26.6136	65.00	740.3	724.0	97.80%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	12.7825	65.00	165.6	80	48.32%
85	5.9500	27.5738	65.00	795.5	770.5	96.86%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	12.7825	65.00	165.6	80	48.32%
90	6.3000	28.5341	65.00	852.6	817.0	95.82%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	12.7825	65.00	165.6	80	48.32%
95	6.6500	29.4943	65.00	911.7	863.5	94.71%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	12.7825	65.00	165.6	80	48.32%
100	7.0000	30.4545	64.87	971.0	910.0	93.72%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	12.7825	65.00	165.6	80	48.32%
105	7.3500	31.4147	63.86	1017.9	956.5	93.97%	12.7825	65.00	165.6	80	48.32%	22.1266	65.00	508.8	483	94.84%	12.7825	65.00	165.6	80	48.32%
110	7.7000	31.8750	63.38	1040.3	1003.0	96.41%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	27.0473	65.00	765.0	745	97.39%
115	8.0500	32.8352	62.37	1087.1	1049.5	96.54%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	27.0473	65.00	765.0	745	97.39%
120	8.4000	33.7954	61.36	1133.7	1096.0	96.67%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	27.0473	65.00	765.0	745	97.39%
125	8.7500	34.7556	60.35	1180.1	1142.5	96.81%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	27.0473	65.00	765.0	745	97.39%
130	9.1000	35.7159	59.34	1226.1	1189.0	96.98%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	27.1505	65.00	770.9	750	97.29%
135	9.4500	36.6761	58.33	1271.6	1235.5	97.16%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	28.1830	65.00	831.5	800	96.21%
140	9.8000	37.6363	57.33	1316.6	1282.0	97.37%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	29.2155	65.00	894.4	850	95.04%
145	10.1500	38.5965	56.32	1360.9	1328.5	97.62%	12.7825	65.00	165.6	80	48.32%	20.9393	65.00	454.7	425	93.46%	30.2480	65.00	959.6	900	93.79%
150	10.5000	39.5568	55.31	1404.6	1375.0	97.90%	12.7825	65.00	165.6	80	48.32%	21.7653	65.00	492.0	465	94.51%	31.2805	64.00	1011.3	950	93.94%



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WPE Class:	H10	11000 Lb Load	Max. One Section Length =	55	ft	Max. Bot Section Length =	53	ft
Top Dia. (in) =	11.875		Max. Top Section Length =	47.5	ft	Bot Section Thk. (if 2 sections) =	0.25	in
One Section Taper =	0.2149		Top Section Length for 55' - 65' =	40	ft	Bot Section Thk. (if 3 sections) =	0.25	in
Multi-Section Taper =	0.2240		Top Section Length Thk. =	0.25	in	Bot Section Thk. (Height > 120') =	0.25	in
Taper for height > 120' =	0.2240							
Shape (sides) =	12		Max. Mid Section Length =	36	ft	Material Grade =	65	ksi
Slip joint Factor =	1.65		Mid Section Thk. =	0.25	in	Bend Radius =	4	x thickness
Embedded length (ft) =	10%	Ht + 2				Min. GL to Bot of Slip-Joint =	7	ft
Fixity from Bot (ft) =	7%	Ht + 0						



Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	11.875	18.3220	0.25	1218													1218	5.0000	17.2475	65.00	316.94	306.1	253.0	82.64%
35	35	11.875	19.3965	0.25	1473													1473	5.5000	18.2146	65.00	354.30	342.2	302.5	88.39%
40	40	11.875	20.4710	0.25	1742													1742	6.0000	19.1816	65.00	393.75	380.3	352.0	92.55%
45	45	11.875	21.5455	0.25	2026													2026	6.5000	20.1487	65.00	435.28	420.4	401.5	95.49%
50	50	11.875	22.6200	0.25	2325													2325	7.0000	21.1157	65.00	478.89	462.6	451.0	97.50%
55	55	11.875	23.6945	0.25	2638													2638	7.5000	22.0828	65.00	524.59	506.7	500.5	98.77%
60	40	11.875	20.8350	0.25	1762							3	23.0000	19.6630	24.8150	0.25	1383	3145	8.0000	23.0230	65.00	571.01	551.6	550.0	99.72%
65	47.5	11.875	22.5150	0.25	2202							3.25	20.7500	21.2870	25.9350	0.25	1326	3528	8.5000	24.0310	65.00	622.96	601.7	599.5	99.63%
70	47.5	11.875	22.5150	0.25	2202							3.25	25.7500	21.2870	27.0550	0.25	1685	3886	9.0000	25.0390	65.00	677.18	654.1	649.0	99.22%
75	47.5	11.875	22.5150	0.25	2202							3.25	30.7500	21.2870	28.1750	0.25	2059	4261	9.5000	26.0470	65.00	733.66	708.7	698.5	98.57%
80	47.5	11.875	22.5150	0.25	2202							3.25	35.7500	21.2870	29.2950	0.25	2449	4650	10.0000	27.0550	65.00	792.40	765.4	748.0	97.73%
85	47.5	11.875	22.5150	0.25	2202							3.25	40.7500	21.2870	30.4150	0.25	2854	5055	10.5000	28.0630	65.00	853.40	824.3	797.5	96.75%
90	47.5	11.875	22.5150	0.25	2202							3.25	45.7500	21.2870	31.5350	0.25	3274	5475	11.0000	29.0710	65.00	916.67	885.4	847.0	95.66%
95	47.5	11.875	22.5150	0.25	2202							3.25	50.7500	21.2870	32.6550	0.25	3709	5911	11.5000	30.0790	65.00	982.19	948.7	896.5	94.50%
100	47.5	11.875	22.5150	0.25	2202							3.25	55.7500	21.2870	33.7750	0.25	4160	6362	12.0000	31.0870	64.21	1037.19	1001.9	946.0	94.43%
105	53.5	11.875	23.8590	0.25	2578							3.25	54.7500	22.6310	34.8950	0.25	4270	6848	12.5000	32.0950	63.15	1088.14	1051.1	995.5	94.71%
110	47.5	11.875	22.5150	0.25	2202	3.25	36.0000	21.2870	29.3510	0.25	2469	4	33.7500	27.9550	35.5150	0.25	2907	7577	13.0000	32.6030	62.62	1113.77	1075.8	1045.0	97.14%
115	47.5	11.875	22.5150	0.25	2202	3.25	36.0000	21.2870	29.3510	0.25	2469	4	38.7500	27.9550	36.6350	0.25	3397	8067	13.5000	33.6110	61.56	1164.49	1124.8	1094.5	97.31%
120	47.5	11.875	22.5150	0.25	2202	3.25	36.0000	21.2870	29.3510	0.25	2469	4	43.7500	27.9550	37.7550	0.25	3902	8572	14.0000	34.6190	60.50	1214.92	1173.5	1144.0	97.48%
125	47.5	11.875	22.5150	0.25	2202	3.25	36.0000	21.2870	29.3510	0.25	2469	4	48.7500	27.9550	38.8750	0.25	4422	9093	14.5000	35.6270	59.44	1264.95	1221.8	1193.5	97.68%
130	47.5	11.875	22.5150	0.25	2202	3.25	36.7500	21.2870	29.5190	0.25	2528	4	53.0000	28.1230	39.9950	0.25	4901	9631	15.0000	36.6350	58.38	1314.47	1269.7	1243.0	97.90%
135	47.5	11.875	22.5150	0.25	2202	3.25	42.0000	21.2870	30.6950	0.25	2957	4.25	53.0000	29.2430	41.1150	0.25	5064	10223	15.5000	37.6430	57.32	1363.37	1316.9	1292.5	98.15%
140	47.5	11.875	22.5150	0.25	2202	3.25	47.2500	21.2870	31.8710	0.25	3403	4.5	53.0000	30.3630	42.2350	0.25	5226	10831	16.0000	38.6510	56.26	1411.54	1363.4	1342.0	98.43%
145	47.5	11.875	22.5150	0.25	2202	3.25	52.2500	21.2870	32.9910	0.25	3843	4.5	53.0000	31.4830	43.3550	0.25	5388	11433	16.5000	39.6590	55.20	1458.86	1409.2	1391.5	98.75%
150	52	11.875	23.5230	0.25	2482	3.25	53.0000	22.2950	34.1670	0.25	4056	4.75	53.0000	32.6030	44.4750	0.25	5551	12089	17.0000	40.6670	54.14	1505.24	1453.9	1441.0	99.11%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	17.8707	65.00	329.2	284.9	86.55%	12.9495	65.00	170.1	88	51.75%										
35	2.4500	18.8700	65.00	367.8	336.1	91.36%	12.9495	65.00	170.1	88	51.75%										
40	2.8000	19.8693	65.00	408.7	387.2	94.75%	12.9495	65.00	170.1	88	51.75%										
45	3.1500	20.8686	65.00	451.6	438.4	97.06%	12.9495	65.00	170.1	88	51.75%										
50	3.5000	21.8679	65.00	496.7	489.5	98.54%	12.9495	65.00	170.1	88	51.75%										
55	3.8500	22.8671	65.00	544.0	540.7	99.39%	12.9495	65.00	170.1	88	51.75%										
60	4.2000	23.8742	65.00	593.8	591.8	99.67%	12.9950	65.00	171.3	88	51.37%	20.1630	65.00	421.1	385	91.44%					
65	4.5500	24.9158	65.00	647.6	643.0	99.28%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%					
70	4.9000	25.9574	65.00	703.7	694.1	98.63%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%					
75	5.2500	26.9990	65.00	762.2	745.3	97.78%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%					
80	5.6000	28.0406	65.00	823.0	796.4	96.77%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%					
85	5.9500	29.0822	65.00	886.1	847.6	95.65%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%					
90	6.3000	30.1238	65.00	951.6	898.7	94.44%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%					
95	6.6500	31.1654	64.13	1005.7	949.9	94.45%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%					
100	7.0000	32.2070	63.03	1056.5	1001.0	94.74%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%					
105	7.3500	33.2486	61.94	1107.2	1052.2	95.03%	12.9950	65.00	171.3	88	51.37%	23.1310	65.00	556.8	531	95.32%					
110	7.7000	33.7902	61.37	1133.5	1103.3	97.34%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%	28.4550	65.00	847.8	817	96.33%
115	8.0500	34.8318	60.27	1183.8	1154.5	97.52%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%	28.4550	65.00	847.8	817	96.33%
120	8.4000	35.8734	59.18	1233.6	1205.6	97.73%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%	28.4550	65.00	847.8	817	96.33%
125	8.7500	36.9150	58.08	1282.9	1256.8	97.96%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%	28.4550	65.00	847.8	817	96.33%
130	9.1000	37.9566	56.99	1331.5	1307.9	98.23%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%	28.6230	65.00	858.0	825	96.15%
135	9.4500	38.9982	55.89	1379.3	1359.1	98.53%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%	29.7430	65.00	927.4	880	94.89%
140	9.8000	40.0398	54.80	1426.2	1410.2	98.88%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%	30.8630	64.44	990.9	935	94.36%
145	10.1500	41.0814	53.71	1472.1	1461.4	99.27%	12.9950	65.00	171.3	88	51.37%	21.7870	65.00	493.0	465	94.27%	31.9830	63.27	1045.6	990	94.68%
150	10.5000	42.1230	52.61	1516.8	1512.5	99.72%	12.9950	65.00	171.3	88	51.37%	22.7950	65.00	540.5	514	95.14%	33.1030	62.09	1100.1	1045	94.99%



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WPE Class: H11 12000 Lb Load Max. One Section Length = 55 ft
Top Dia. (in) = 12.5 Max. Top Section Length = 47.5 ft
One Section Taper = 0.2270 Top Section Length for 55' - 65' = 40 ft
Multi-Section Taper = 0.2360 Top Section Thk. = 0.25 in
Taper for height > 120' = 0.2360
Shape (sides) = 12
Slip joint Factor = 1.65
Max. Mid Section Length = 36 ft
Mid Section Thk. = 0.25 in
Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.25 in
Bot Section Thk. (if 3 sections) = 0.25 in
Bot Section Thk. (Height > 120') = 0.3125 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

H11

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.		Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.
30	30	12.5	19.3100	0.25	1285													1285	5.0000	18.1750	65.00	352.73	340.7	276.0	81.01%
35	35	12.5	20.4450	0.25	1553													1553	5.5000	19.1965	65.00	394.37	380.9	330.0	86.63%
40	40	12.5	21.5800	0.25	1837													1837	6.0000	20.2180	65.00	438.34	423.4	384.0	90.69%
45	45	12.5	22.7150	0.25	2137													2137	6.5000	21.2395	65.00	484.63	468.1	438.0	93.57%
50	50	12.5	23.8500	0.25	2452													2452	7.0000	22.2610	65.00	533.23	515.1	492.0	95.52%
55	55	12.5	24.9850	0.25	2782													2782	7.5000	23.2825	65.00	584.17	564.3	546.0	96.76%
60	40	12.5	21.9400	0.25	1857	0	0.0000	0.0000	0.0000	0		3	23.0000	20.7320	26.1600	0.25	1459	3316	8.0000	24.2720	65.00	635.72	614.1	600.0	97.71%
65	47.5	12.5	23.7100	0.25	2320	0	0.0000	0.0000	0.0000	0		3.25	20.7500	22.4430	27.3400	0.25	1399	3718	8.5000	25.3340	65.00	693.47	669.8	654.0	97.63%
70	47.5	12.5	23.7100	0.25	2320	0	0.0000	0.0000	0.0000	0		3.25	25.7500	22.4430	28.5200	0.25	1777	4097	9.0000	26.3960	65.00	753.74	728.1	708.0	97.25%
75	47.5	12.5	23.7100	0.25	2320	0	0.0000	0.0000	0.0000	0		3.25	30.7500	22.4430	29.7000	0.25	2172	4492	9.5000	27.4580	65.00	816.52	788.7	762.0	96.62%
80	47.5	12.5	23.7100	0.25	2320	0	0.0000	0.0000	0.0000	0		3.25	35.7500	22.4430	30.8800	0.25	2583	4903	10.0000	28.5200	65.00	881.80	851.8	816.0	95.80%
85	47.5	12.5	23.7100	0.25	2320	0	0.0000	0.0000	0.0000	0		3.25	40.7500	22.4430	32.0600	0.25	3010	5330	10.5000	29.5820	65.00	949.60	917.2	870.0	94.85%
90	47.5	12.5	23.7100	0.25	2320	0	0.0000	0.0000	0.0000	0		3.25	45.7500	22.4430	33.2400	0.25	3453	5773	11.0000	30.6440	64.67	1014.79	980.2	924.0	94.27%
95	47.5	12.5	23.7100	0.25	2320	0	0.0000	0.0000	0.0000	0		3.25	50.7500	22.4430	34.4200	0.25	3912	6232	11.5000	31.7060	63.56	1068.48	1032.1	978.0	94.76%
100	47.5	12.5	23.7100	0.25	2320	0	0.0000	0.0000	0.0000	0		3.25	55.7500	22.4430	35.6000	0.25	4387	6707	12.0000	32.7680	62.44	1122.09	1083.9	1032.0	95.22%
105	53.5	12.5	25.1260	0.25	2716	0	0.0000	0.0000	0.0000	0		3.5	55.0000	23.8000	36.7800	0.25	4519	7236	12.5000	33.8300	61.33	1175.47	1135.4	1086.0	95.65%
110	47.5	12.5	23.7100	0.25	2320	3.25	36.0000	22.4430	30.9390	0.25	2604	4.25	34.0000	29.4360	37.6400	0.25	3087	8011	13.0000	34.3920	60.74	1203.59	1162.6	1140.0	98.06%
115	47.5	12.5	23.7100	0.25	2320	3.25	36.0000	22.4430	30.9390	0.25	2604	4.25	39.0000	29.4360	38.6400	0.25	3604	8528	13.5000	35.4540	59.62	1256.40	1213.6	1194.0	98.39%
120	47.5	12.5	23.7100	0.25	2320	3.25	36.0000	22.4430	30.9390	0.25	2604	4.25	44.0000	29.4360	39.8200	0.25	4138	9061	14.0000	36.5160	58.50	1308.65	1264.1	1248.0	98.73%
125	47.5	12.5	23.7100	0.25	2320	3.25	36.0000	22.4430	30.9390	0.25	2604	4.25	49.0000	29.4360	41.0000	0.3125	5848	10772	14.5000	37.5780	65.00	1916.20	1850.9	1302.0	70.34%
130	47.5	12.5	23.7100	0.25	2320	3.25	37.0000	22.4430	31.1750	0.25	2688	4.25	53.0000	29.6720	42.1800	0.3125	6454	11461	15.0000	38.6400	64.39	2008.48	1940.0	1356.0	69.90%
135	47.5	12.5	23.7100	0.25	2320	3.25	42.2500	22.4430	32.4140	0.25	3141	4.5	53.0000	30.8520	43.3600	0.3125	6668	12128	15.5000	39.7020	63.50	2092.37	2021.1	1410.0	69.76%
140	47.5	12.5	23.7100	0.25	2320	3.25	47.5000	22.4430	33.6530	0.25	3612	4.75	53.0000	32.0320	44.5400	0.3125	6881	12813	16.0000	40.7640	62.61	2176.14	2102.0	1464.0	69.65%
145	47.5	12.5	23.7100	0.25	2320	3.25	52.5000	22.4430	34.8330	0.25	4077	4.75	53.0000	33.2120	45.7200	0.3125	7095	13492	16.5000	41.8260	61.71	2259.66	2182.7	1518.0	69.55%
150	52.5	12.5	24.8900	0.25	2649	3.5	53.0000	23.5640	36.0720	0.25	4287	5	53.0000	34.3920	46.9000	0.3125	7309	14244	17.0000	42.8880	60.82	2342.81	2263.0	1572.0	69.47%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	18.8333	65.00	366.4	310.8	84.83%	13.6350	65.00	189.1	96	50.77%										
35	2.4500	19.8889	65.00	409.5	366.6	89.53%	13.6350	65.00	189.1	96	50.77%										
40	2.8000	20.9444	65.00	455.0	422.4	92.84%	13.6350	65.00	189.1	96	50.77%										
45	3.1500	22.0000	65.00	502.9	478.2	95.10%	13.6350	65.00	189.1	96	50.77%										
50	3.5000	23.0555	65.00	553.1	534.0	96.54%	13.6350	65.00	189.1	96	50.77%										
55	3.8500	24.1111	65.00	605.8	589.8	97.36%	13.6350	65.00	189.1	96	50.77%										
60	4.2000	25.1688	65.00	661.0	645.6	97.67%	13.6800	65.00	190.4	96	50.42%	21.2320	65.00	467.8	420	89.79%	13.6800	65.00	190.4	96	50.42%
65	4.5500	26.2662	65.00	720.8	701.4	97.31%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	13.6800	65.00	190.4	96	50.42%
70	4.9000	27.3636	65.00	783.2	757.2	96.68%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	13.6800	65.00	190.4	96	50.42%
75	5.2500	28.4610	65.00	848.2	813.0	95.85%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	13.6800	65.00	190.4	96	50.42%
80	5.6000	29.5584	65.00	915.8	868.8	94.87%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	13.6800	65.00	190.4	96	50.42%
85	5.9500	30.6558	64.66	980.8	924.6	94.27%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	13.6800	65.00	190.4	96	50.42%
90	6.3000	31.7532	63.51	1034.4	980.4	94.78%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	13.6800	65.00	190.4	96	50.42%
95	6.6500	32.8506	62.35	1087.9	1036.2	95.25%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	13.6800	65.00	190.4	96	50.42%
100	7.0000	33.9480	61.20	1141.1	1092.0	95.69%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	13.6800	65.00	190.4	96	50.42%
105	7.3500	35.0454	60.05	1194.0	1147.8	96.13%	13.6800	65.00	190.4	96	50.42%	24.3000	65.00	615.5	576	93.58%	13.6800	65.00	190.4	96	50.42%
110	7.7000	35.6428	59.42	1222.6	1203.6	98.45%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	29.9360	65.00	939.6	888	94.51%
115	8.0500	36.7402	58.27	1274.6	1259.4	98.80%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	29.9360	65.00	939.6	888	94.51%
120	8.4000	37.8376	57.11	1326.0	1315.2	99.19%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	29.9360	65.00	939.6	888	94.51%
125	8.7500	38.9350	64.14	1362.6	1371.0	99.86%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	29.9360	65.00	939.6	888	94.51%
130	9.1000	40.0324	63.22	2046.3	1426.8	69.73%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	30.1720	65.00	954.7	900	94.27%
135	9.4500	41.1298	62.30	2129.8	1482.6	69.61%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	31.3520	63.93	1014.8	960	94.60%
140	9.8000	42.2272	61.38	2213.1	1538.4	69.51%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	32.5320	62.69	1072.4	1020	95.12%
145	10.1500	43.3246	60.45	2295.9	1594.2	69.44%	13.6800	65.00	190.4	96	50.42%	22.9430	65.00	547.7	507	92.58%	33.7120	61.45	1129.7	1080	95.60%
150	10.5000	44.4220	59.53	2378.1	1650.0	69.38%	13.6800	65.00	190.4	96	50.42%	24.0640	65.00	603.4	564	93.47%	34.8920	60.21	1186.7	1140	96.07%



8653 E. Highway 67
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WPE Class:	H12	13000 Lb Load	Max. One Section Length =	55	ft	Max. Bot Section Length =	53	ft
Top Dia. (in) =	13.5		Max. Top Section Length =	47.5	ft	Bot Section Thk. (if 2 sections) =	0.25	in
One Section Taper =	0.2212		Top Section Length for 55' - 65' =	40	ft	Bot Section Thk. (if 3 sections) =	0.25	in
Multi-Section Taper =	0.2480		Top Section Thk. =	0.25	in	Bot Section Thk. (Height > 120') =	0.3125	in
Taper for height > 120' =	0.2480							
Shape (sides) =	12		Max. Mid Section Length =	36	ft	Material Grade =	65	ksi
Slip joint Factor =	1.65		Mid Section Thk. =	0.25	in	Bend Radius =	4	x thickness
Embedded length (ft) =	10%	Ht + 2				Min. GL to Bot of Slip-Joint =	7	ft
Fixity from Bot (ft) =	7%	Ht + 0						

H12

Height	Top Section					Middle Section						Bottom Section						Total	Ground Line						
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	13.5	20.1360	0.25	1360													1360	5.0000	19.0300	65.00	387.43	374.2	299.0	79.90%
35	35	13.5	21.2420	0.25	1639													1639	5.5000	20.0254	65.00	429.87	415.2	357.5	86.10%
40	40	13.5	22.3480	0.25	1934													1934	6.0000	21.0208	65.00	474.52	458.4	416.0	90.76%
45	45	13.5	23.4540	0.25	2244													2244	6.5000	22.0162	65.00	521.37	503.6	474.5	94.22%
50	50	13.5	24.5600	0.25	2568													2568	7.0000	23.0116	65.00	570.43	551.0	533.0	96.73%
55	55	13.5	25.6660	0.25	2909													2909	7.5000	24.0070	65.00	621.70	600.5	591.5	98.50%
60	40	13.5	23.4200	0.25	1992		3.25	23.2500	22.1140	27.8800	0.25		3.25	23.2500	22.1140	27.8800	0.25	3566	8.0000	25.8960	65.00	725.05	700.3	650.0	92.81%
65	47.5	13.5	25.2800	0.25	2487		3.5	21.0000	23.9120	29.1200	0.25		3.5	21.0000	23.9120	29.1200	0.25	3996	8.5000	27.0120	65.00	789.85	762.9	708.5	92.87%
70	47.5	13.5	25.2800	0.25	2487		3.5	26.0000	23.9120	30.3600	0.25		3.5	26.0000	23.9120	30.3600	0.25	4399	9.0000	28.1280	65.00	857.41	828.2	767.0	92.61%
75	47.5	13.5	25.2800	0.25	2487		3.5	31.0000	23.9120	31.6000	0.25		3.5	31.0000	23.9120	31.6000	0.25	4819	9.5000	29.2440	65.00	927.75	896.1	825.5	92.12%
80	47.5	13.5	25.2800	0.25	2487		3.5	36.0000	23.9120	32.8400	0.25		3.5	36.0000	23.9120	32.8400	0.25	5266	10.0000	30.3600	64.97	1000.44	966.3	884.0	91.48%
85	47.5	13.5	25.2800	0.25	2487		3.5	41.0000	23.9120	34.0800	0.25		3.5	41.0000	23.9120	34.0800	0.25	5711	10.5000	31.4760	63.80	1056.86	1020.8	942.5	92.33%
90	47.5	13.5	25.2800	0.25	2487		3.5	46.0000	23.9120	35.3200	0.25		3.5	46.0000	23.9120	35.3200	0.25	6182	11.0000	32.5920	62.63	1113.22	1075.3	1001.0	93.09%
95	47.5	13.5	25.2800	0.25	2487		3.5	51.0000	23.9120	36.5600	0.25		3.5	51.0000	23.9120	36.5600	0.25	6670	11.5000	33.7080	61.45	1169.36	1129.5	1059.5	93.80%
100	47.5	13.5	25.2800	0.25	2487		3.5	56.0000	23.9120	37.8000	0.25		3.5	56.0000	23.9120	37.8000	0.25	7175	12.0000	34.8240	60.28	1225.13	1183.4	1118.0	94.47%
105	54	13.5	26.8920	0.25	2946		3.75	54.7500	25.4620	39.0400	0.25		3.75	54.7500	25.4620	39.0400	0.25	7739	12.5000	35.9400	59.11	1280.39	1236.8	1176.5	95.13%
110	47.5	13.5	25.2800	0.25	2487	3.5	36.0000	23.9120	32.8400	0.25	2770	4.5	34.5000	31.2240	39.7800	0.25	3327	8583	13.0000	36.5560	58.46	1310.61	1266.0	1235.0	97.56%
115	47.5	13.5	25.2800	0.25	2487	3.5	36.0000	23.9120	32.8400	0.25	2770	4.5	39.5000	31.2240	41.0200	0.25	3876	9132	13.5000	37.6720	57.29	1364.77	1318.3	1293.5	98.12%
120	47.5	13.5	25.2800	0.25	2487	3.5	36.0000	23.9120	32.8400	0.25	2770	4.5	44.5000	31.2240	42.2600	0.25	4442	9698	14.0000	38.7880	56.12	1418.02	1369.7	1352.0	98.71%
125	47.5	13.5	25.2800	0.25	2487	3.5	36.0000	23.9120	32.8400	0.25	2770	4.5	49.5000	31.2240	43.5000	0.3125	6271	11527	14.5000	39.9040	63.33	2108.32	2036.5	1410.5	69.26%
130	47.5	13.5	25.2800	0.25	2487	3.5	37.5000	23.9120	33.2120	0.25	2904	4.5	53.0000	31.5960	44.7400	0.3125	6860	12251	15.0000	41.0200	62.39	2196.30	2121.5	1469.0	69.24%
135	47.5	13.5	25.2800	0.25	2487	3.5	42.7500	23.9120	34.5140	0.25	3387	4.75	53.0000	32.8360	45.9800	0.3125	7085	12958	15.5000	42.1360	61.45	2283.98	2206.2	1527.5	69.24%
140	47.5	13.5	25.2800	0.25	2487	3.5	48.0000	23.9120	35.8160	0.25	3888	5	53.0000	34.0760	47.2200	0.3125	7309	13684	16.0000	43.2520	60.51	2371.19	2290.4	1586.0	69.25%
145	47.5	13.5	25.2800	0.25	2487	3.5	53.2500	23.9120	37.1180	0.25	4408	5.25	53.0000	35.3160	48.4600	0.3125	7534	14429	16.5000	44.3680	59.58	2457.80	2374.1	1644.5	69.27%
150	53	13.5	26.6440	0.25	2874	3.75	53.0000	25.2140	38.3580	0.25	4572	5.25	53.0000	36.5560	49.7000	0.3125	7759	15204	17.0000	45.4840	58.64	2543.65	2457.0	1703.0	69.31%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	19.6715	65.00	400.4	336.7	84.09%	14.6060	65.00	217.8	104	47.75%										
35	2.4500	20.7001	65.00	444.2	397.2	89.40%	14.6060	65.00	217.8	104	47.75%										
40	2.8000	21.7286	65.00	490.3	457.6	93.33%	14.6060	65.00	217.8	104	47.75%										
45	3.1500	22.7572	65.00	538.7	518.1	96.17%	14.6060	65.00	217.8	104	47.75%										
50	3.5000	23.7858	65.00	589.3	578.5	98.16%	14.6060	65.00	217.8	104	47.75%										
55	3.8500	24.8144	65.00	642.2	639.0	99.49%	14.6060	65.00	217.8	104	47.75%										
60	4.2000	26.8384	65.00	753.0	699.4	92.88%	14.7400	65.00	221.9	104	46.86%	22.6140	65.00	531.8	452	84.95%	0.0000	0.00	0.0	0.0	0.00%
65	4.5500	27.9916	65.00	820.1	759.9	92.66%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	0.0000	0.00	0.0	0.0	0.00%
70	4.9000	29.1448	65.00	890.0	820.3	92.17%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	0.0000	0.00	0.0	0.0	0.00%
75	5.2500	30.2980	65.04	963.3	880.8	91.43%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	0.0000	0.00	0.0	0.0	0.00%
80	5.6000	31.4512	63.83	1019.6	941.2	92.31%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	0.0000	0.00	0.0	0.0	0.00%
85	5.9500	32.6044	62.61	1075.9	1001.7	93.10%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	0.0000	0.00	0.0	0.0	0.00%
90	6.3000	33.7576	61.40	1131.9	1062.1	93.83%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	0.0000	0.00	0.0	0.0	0.00%
95	6.6500	34.9108	60.19	1187.6	1122.6	94.53%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	0.0000	0.00	0.0	0.0	0.00%
100	7.0000	36.0640	58.98	1242.7	1183.0	95.20%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	0.0000	0.00	0.0	0.0	0.00%
105	7.3500	37.2172	57.77	1297.0	1243.5	95.87%	14.7400	65.00	221.9	104	46.86%	25.9620	65.00	704.0	627	89.10%	0.0000	0.00	0.0	0.0	0.00%
110	7.7000	37.8704	57.08	1327.5	1303.9	98.22%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	31.7240	63.54	1033.0	956	92.50%
115	8.0500	39.0236	55.87	1380.4	1364.4	98.83%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	31.7240	63.54	1033.0	956	92.50%
120	8.4000	40.1768	54.66	1432.3	1424.8	99.48%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	31.7240	63.54	1033.0	956	92.50%
125	8.7500	41.3300	62.13	2145.0	1485.3	69.24%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	31.7240	63.54	1033.0	956	92.50%
130	9.1000	42.4832	61.16	2232.4	1545.7	69.24%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	32.0960	63.15	1051.1	975	92.76%
135	9.4500	43.6364	60.19	2319.3	1606.2	69.25%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	33.3360	61.84	1111.5	1040	93.57%
140	9.8000	44.7896	59.22	2405.5	1666.6	69.28%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	34.5760	60.54	1171.5	1105	94.33%
145	10.1500	45.9428	58.25	2490.8	1727.1	69.34%	14.7400	65.00	221.9	104	46.86%	24.4120	65.00	621.3	546	87.88%	35.8160	59.24	1230.9	1170	95.06%
150	10.5000	47.0960	57.28	2575.2	1787.5	69.41%	14.7400	65.00	221.9	104	46.86%	25.7140	65.00	690.4	614	88.97%	37.0560	57.94	1289.5	1235	95.77%



8653 E. Highway 67
Alvarado, TX 76009
Office: 817-852-1700
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WPE Class: H13 14000 Lb Load Max. One Section Length = 55 ft
Top Dia. (in) = 14 Max. Top Section Length = 47.5 ft
One Section Taper = 0.2300 Top Section Length for 55' - 65' = 40 ft
Multi-Section Taper = 0.2535 Top Section Thk. = 0.25 in
Taper for height > 120' = 0.2535
Shape (sides) = 12
Slip joint Factor = 1.65
Max. Mid Section Length = 36 ft
Mid Section Thk. = 0.25 in
Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.25 in
Bot Section Thk. (if 3 sections) = 0.3125 in
Bot Section Thk. (Height > 120') = 0.3125 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

H13

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	14	20.9000	0.25	1411													1411	5.0000	19.7500	65.00	417.91	403.7	322.0	79.77%
35	35	14	22.0500	0.25	1702													1702	5.5000	20.7850	65.00	463.74	447.9	385.0	85.95%
40	40	14	23.2000	0.25	2008													2008	6.0000	21.8200	65.00	511.96	494.5	448.0	90.59%
45	45	14	24.3500	0.25	2329													2329	6.5000	22.8550	65.00	562.57	543.4	511.0	94.04%
50	50	14	25.5000	0.25	2667													2667	7.0000	23.8900	65.00	615.56	594.6	574.0	96.54%
55	55	14	26.6500	0.25	3020													3020	7.5000	24.9250	65.00	670.93	648.1	637.0	98.29%
60	40	14	24.1400	0.25	2059								3.5	23.5000	22.7528	28.7100	0.25	1638	8.0000	26.6820	65.00	770.40	744.1	700.0	94.07%
65	47.5	14	26.0413	0.25	2569							3.75	21.2500	24.5906	29.9775	0.25	1571	4140	8.5000	27.8228	65.00	838.66	810.1	763.0	94.19%
70	47.5	14	26.0413	0.25	2569							3.75	26.2500	24.5906	31.2450	0.25	1987	4555	9.0000	28.9635	65.00	909.81	878.8	826.0	93.99%
75	47.5	14	26.0413	0.25	2569							3.75	31.2500	24.5906	32.5125	0.25	2419	4988	9.5000	30.1043	65.00	983.86	950.3	889.0	93.55%
80	47.5	14	26.0413	0.25	2569							3.75	36.2500	24.5906	33.7800	0.25	2869	5438	10.0000	31.2450	64.04	1045.18	1009.6	952.0	94.30%
85	47.5	14	26.0413	0.25	2569							3.75	41.2500	24.5906	35.0475	0.25	3336	5905	10.5000	32.3858	62.84	1102.81	1065.2	1015.0	95.28%
90	47.5	14	26.0413	0.25	2569							3.75	46.2500	24.5906	36.3150	0.25	3821	6390	11.0000	33.5265	61.64	1160.25	1120.7	1078.0	96.19%
95	47.5	14	26.0413	0.25	2569							3.75	51.2500	24.5906	37.5825	0.25	4323	6892	11.5000	34.6673	60.45	1217.32	1175.8	1141.0	97.04%
100	47.5	14	26.0413	0.25	2569							3.75	56.2500	24.5906	38.8500	0.25	4842	7411	12.0000	35.8080	59.25	1273.88	1230.5	1204.0	97.85%
105	54	14	27.6890	0.25	3042							3.75	54.7500	26.2384	40.1175	0.25	4931	7973	12.5000	36.9488	58.05	1329.76	1284.5	1267.0	98.64%
110	47.5	14	26.0413	0.25	2569	3.75	36.0000	24.5906	33.7166	0.25	2846	4.75	35.0000	32.0125	40.8850	0.3125	4324	9739	13.0000	37.5895	65.00	1917.39	1852.1	1330.0	71.81%
115	47.5	14	26.0413	0.25	2569	3.75	36.0000	24.5906	33.7166	0.25	2846	4.75	40.0000	32.0125	42.1525	0.3125	5029	10444	13.5000	38.7303	64.32	2015.61	1946.9	1393.0	71.55%
120	47.5	14	26.0413	0.25	2569	3.75	36.0000	24.5906	33.7166	0.25	2846	4.75	45.0000	32.0125	43.4200	0.3125	5755	11170	14.0000	39.8710	63.36	2105.71	2034.0	1456.0	71.58%
125	47.5	14	26.0413	0.25	2569	3.75	36.0000	24.5906	33.7166	0.25	2846	4.75	50.0000	32.0125	44.6875	0.3125	6503	11918	14.5000	41.0118	62.40	2195.65	2120.8	1519.0	71.62%
130	47.5	14	26.0413	0.25	2569	3.75	38.0000	24.5906	34.2236	0.25	3031	4.75	53.0000	32.5195	45.9550	0.3125	7054	12653	15.0000	42.1525	61.44	2285.27	2207.4	1582.0	71.67%
135	47.5	14	26.0413	0.25	2569	3.75	43.2500	24.5906	35.5545	0.25	3528	5	53.0000	33.7870	47.2225	0.3125	7283	13380	15.5000	43.2933	60.48	2374.41	2293.5	1645.0	71.72%
140	47.5	14	26.0413	0.25	2569	3.75	48.2500	24.5906	36.8220	0.25	4020	5	53.0000	35.0545	48.4900	0.3125	7513	14101	16.0000	44.4340	59.52	2462.90	2379.0	1708.0	71.80%
145	47.75	14	26.1046	0.25	2586	3.75	53.2500	24.6540	38.1529	0.25	4538	5.25	53.0000	36.3220	49.7575	0.3125	7743	14867	16.5000	45.5748	58.56	2550.59	2463.7	1771.0	71.88%
150	53.25	14	27.4989	0.25	2986	3.75	53.0000	26.0483	39.4838	0.25	4714	5.5	53.0000	37.5895	51.0250	0.3125	7972	15672	17.0000	46.7155	57.60	2637.32	2547.5	1834.0	71.99%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	20.4170	65.00	431.9	362.6	83.95%	15.1500	65.00	234.8	112	47.71%										
35	2.4500	21.4865	65.00	479.3	427.7	89.24%	15.1500	65.00	234.8	112	47.71%										
40	2.8000	22.5560	65.00	529.0	492.8	93.15%	15.1500	65.00	234.8	112	47.71%										
45	3.1500	23.6255	65.00	581.3	557.9	95.98%	15.1500	65.00	234.8	112	47.71%										
50	3.5000	24.6950	65.00	636.0	623.0	97.96%	15.1500	65.00	234.8	112	47.71%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
55	3.8500	25.7645	65.00	693.1	688.1	99.27%	15.1500	65.00	234.8	112	47.71%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
60	4.2000	27.6453	65.00	799.6	753.2	94.19%	15.2675	65.00	238.5	112	46.96%	23.2528	65.00	562.8	483	85.82%	0.0000	0.00	0.0	0	0.00%
65	4.5500	28.8241	65.00	870.3	818.3	94.03%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	0.0000	0.00	0.0	0	0.00%
70	4.9000	30.0029	65.00	943.9	883.4	93.59%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	0.0000	0.00	0.0	0	0.00%
75	5.2500	31.1816	64.11	1006.5	948.5	94.24%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	0.0000	0.00	0.0	0	0.00%
80	5.6000	32.3604	62.87	1064.0	1013.6	95.26%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	0.0000	0.00	0.0	0	0.00%
85	5.9500	33.5392	61.63	1121.3	1078.7	96.20%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	0.0000	0.00	0.0	0	0.00%
90	6.3000	34.7180	60.39	1178.3	1143.8	97.07%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	0.0000	0.00	0.0	0	0.00%
95	6.6500	35.8967	59.15	1234.7	1208.9	97.91%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	0.0000	0.00	0.0	0	0.00%
100	7.0000	37.0755	57.92	1290.4	1274.0	98.73%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	0.0000	0.00	0.0	0	0.00%
105	7.3500	38.2543	56.68	1345.2	1339.1	99.55%	15.2675	65.00	238.5	112	46.96%	26.7384	65.00	747.3	676	90.39%	0.0000	0.00	0.0	0	0.00%
110	7.7000	38.9331	64.15	1962.4	1404.2	71.55%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	32.5125	62.71	1071.4	1022	95.39%
115	8.0500	40.1118	63.15	2052.3	1469.3	71.59%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	32.5125	62.71	1071.4	1022	95.39%
120	8.4000	41.2906	62.16	2142.0	1534.4	71.63%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	32.5125	62.71	1071.4	1022	95.39%
125	8.7500	42.4694	61.17	2231.4	1599.5	71.68%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	32.5125	62.71	1071.4	1022	95.39%
130	9.1000	43.6482	60.18	2320.2	1664.6	71.74%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	33.0195	62.18	1096.1	1050	95.80%
135	9.4500	44.8269	59.19	2408.3	1729.7	71.82%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	34.2870	60.85	1157.5	1120	96.76%
140	9.8000	46.0057	58.20	2495.4	1794.8	71.92%	15.2675	65.00	238.5	112	46.96%	25.0906	65.00	656.8	585	88.99%	35.5545	59.51	1218.4	1190	97.67%
145	10.1500	47.1845	57.21	2581.6	1859.9	72.04%	15.2675	65.00	238.5	112	46.96%	25.1540	65.00	660.2	588	89.06%	36.8220	58.18	1278.5	1260	98.55%
150	10.5000	48.3633	56.22	2666.5	1925.0		15.2675	65.00	238.5	112	46.96%	26.5483	65.00	736.6	665	90.28%	38.0895	56.85	1337.6	1330	99.43%



8653 E. Highway 67
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WPE Class:	H14	15000 Lb Load	Max. One Section Length =	55	ft	Max. Bot Section Length =	53	ft
Top Dia. (in) =	15		Max. Top Section Length =	47.5	ft	Bot Section Thk. (if 2 sections) =	0.25	in
One Section Taper =	0.2275		Top Section Length for 55' - 65' =	40	ft	Bot Section Thk. (if 3 sections) =	0.3125	in
Multi-Section Taper =	0.2640		Top Section Thk. =	0.25	in	Bot Section Thk. (Height > 120') =	0.3125	in
Taper for height > 120' =	0.2640							
Shape (sides) =	12		Max. Mid Section Length =	36	ft	Material Grade =	65	ksi
Slip joint Factor =	1.65		Mid Section Thk. =	0.25	in	Bend Radius =	4	x thickness
Embedded length (ft) =	10%	Ht + 2				Min. GL to Bot of Slip-Joint =	7	ft
Fixity from Bot (ft) =	7%	Ht + 0						

H14

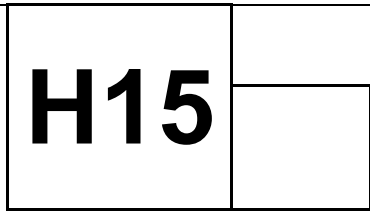
Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	15	21.8250	0.25	1490													1490	5.0000	20.6875	65.00	459.32	443.7	345.0	77.76%
35	35	15	22.9625	0.25	1793													1793	5.5000	21.7113	65.00	506.79	489.5	412.5	84.27%
40	40	15	24.1000	0.25	2112													2112	6.0000	22.7350	65.00	556.58	537.6	480.0	89.28%
45	45	15	25.2375	0.25	2446													2446	6.5000	23.7588	65.00	608.71	588.0	547.5	93.12%
50	50	15	26.3750	0.25	2795													2795	7.0000	24.7825	65.00	663.17	640.6	615.0	96.01%
55	55	15	27.5125	0.25	3160													3160	7.5000	25.8063	65.00	719.96	695.4	682.5	98.14%
60	40	15	25.5600	0.25	2192												1735	3926	8.0000	28.2280	65.00	863.60	834.2	750.0	89.91%
65	47.5	15	27.5400	0.25	2731							3.5	23.5000	24.1360	30.3400	0.25	1663	4394	8.5000	29.4160	65.00	938.84	906.8	817.5	90.15%
70	47.5	15	27.5400	0.25	2731							3.75	26.2500	26.0500	32.9800	0.25	2101	4832	9.0000	30.6040	64.72	1012.77	978.3	885.0	90.47%
75	47.5	15	27.5400	0.25	2731							3.75	31.2500	26.0500	34.3000	0.25	2558	5289	9.5000	31.7920	63.47	1072.83	1036.3	952.5	91.92%
80	47.5	15	27.5400	0.25	2731							3.75	36.2500	26.0500	35.6200	0.25	3033	5764	10.0000	32.9800	62.22	1132.77	1094.2	1020.0	93.22%
85	47.5	15	27.5400	0.25	2731							3.75	41.2500	26.0500	36.9400	0.25	3525	6257	10.5000	34.1680	60.97	1192.40	1151.8	1087.5	94.42%
90	47.5	15	27.5400	0.25	2731							3.75	46.2500	26.0500	38.2600	0.25	4036	6767	11.0000	35.3560	59.72	1251.54	1208.9	1155.0	95.54%
95	47.5	15	27.5400	0.25	2731							3.75	51.2500	26.0500	39.5800	0.25	4565	7296	11.5000	36.5440	58.47	1310.02	1265.4	1222.5	96.61%
100	47.5	15	27.5400	0.25	2731							3.75	56.2500	26.0500	40.9000	0.25	5112	7843	12.0000	37.7320	57.23	1367.65	1321.1	1290.0	97.65%
105	54	15	29.2560	0.25	3232							4	55.0000	27.7000	42.2200	0.25	5222	8453	12.5000	38.9200	55.98	1424.25	1375.7	1357.5	98.68%
110	47.5	15	27.5400	0.25	2731	3.75	36.0000	26.0500	35.5540	0.25	3008	5	35.2500	33.7340	43.0400	0.3125	4589	10328	13.0000	39.6080	63.58	2084.95	2013.9	1425.0	70.76%
115	47.5	15	27.5400	0.25	2731	3.75	36.0000	26.0500	35.5540	0.25	3008	5	40.2500	33.7340	44.3600	0.3125	5331	11070	13.5000	40.7960	62.58	2178.66	2104.4	1492.5	70.92%
120	47.5	15	27.5400	0.25	2731	3.75	36.0000	26.0500	35.5540	0.25	3008	5	45.2500	33.7340	45.6800	0.3125	6095	11835	14.0000	41.9840	61.58	2272.06	2194.6	1560.0	71.08%
125	47.5	15	27.5400	0.25	2731	3.75	36.0000	26.0500	35.5540	0.25	3008	5	50.2500	33.7340	47.0000	0.3125	6882	12621	14.5000	43.1720	60.58	2364.96	2284.4	1627.5	71.24%
130	47.5	15	27.5400	0.25	2731	3.75	38.2500	26.0500	36.1480	0.25	3228	5	53.0000	34.3280	48.3200	0.3125	7432	13391	15.0000	44.3600	59.58	2457.18	2373.5	1695.0	71.41%
135	47.5	15	27.5400	0.25	2731	3.75	43.5000	26.0500	37.5340	0.25	3753	5.25	53.0000	35.6480	49.6400	0.3125	7671	14155	15.5000	45.5480	58.58	2548.55	2461.7	1762.5	71.60%
140	47.5	15	27.5400	0.25	2731	3.75	48.7500	26.0500	38.9200	0.25	4298	5.5	53.0000	36.9680	50.9600	0.3125	7910	14940	16.0000	46.7360	57.59	2638.87	2549.0	1830.0	71.79%
145	48.25	15	27.7380	0.25	2787	3.75	53.0000	26.2480	40.2400	0.25	4783	5.5	53.0000	38.2880	52.2800	0.3125	8149	15720	16.5000	47.9240	56.59	2727.97	2635.0	1897.5	72.01%
150	53.25	15	29.0580	0.25	3172	4	53.5000	27.5020	41.6260	0.25	5021	5.75	53.0000	39.6080	53.6000	0.3125	8389	16582	17.0000	49.1120	55.59	2815.67	2719.7	1965.0	72.25%

Height	Fixity Point						5 Ft from Top						Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	
30	2.1000	21.3473	65.00	473.0	388.5	82.14%	16.1375	65.00	267.2	120	44.91%	0.0000	0.00	0.0	0.00%	0.0000	0.00	0.0	0.00%	0.0000	0.00%	
35	2.4500	22.4051	65.00	521.9	458.3	87.81%	16.1375	65.00	267.2	120	44.91%	0.0000	0.00	0.0	0.00%	0.0000	0.00	0.0	0.00%	0.0000	0.00%	
40	2.8000	23.4630	65.00	573.2	528.0	92.12%	16.1375	65.00	267.2	120	44.91%	0.0000	0.00	0.0	0.00%	0.0000	0.00	0.0	0.00%	0.0000	0.00%	
45	3.1500	24.5209	65.00	626.9	597.8	95.35%	16.1375	65.00	267.2	120	44.91%	0.0000	0.00	0.0	0.00%	0.0000	0.00	0.0	0.00%	0.0000	0.00%	
50	3.5000	25.5788	65.00	683.0	667.5	97.72%	16.1375	65.00	267.2	120	44.91%	0.0000	0.00	0.0	0.00%	0.0000	0.00	0.0	0.00%	0.0000	0.00%	
55	3.8500	26.6366	65.00	741.6	737.3	99.42%	16.1375	65.00	267.2	120	44.91%	0.0000	0.00	0.0	0.00%	0.0000	0.00	0.0	0.00%	0.0000	0.00%	
60	4.2000	29.2312	65.00	895.3	807.0	90.13%	16.3200	65.00	273.4	120	43.89%	24.6360	65.00	632.9	518	81.77%	0.0000	0.00	0.0	0.00%	0.0000	0.00%
65	4.5500	30.4588	64.87	971.2	876.8	90.28%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	0.0000	0.00	0.0	0.00%	0.0000	0.00%
70	4.9000	31.6864	63.58	1031.1	946.5	91.79%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	0.0000	0.00	0.0	0.00%	0.0000	0.00%
75	5.2500	32.9140	62.29	1091.0	1016.3	93.15%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	0.0000	0.00	0.0	0.00%	0.0000	0.00%
80	5.6000	34.1416	61.00	1150.5	1086.0	94.39%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	0.0000	0.00	0.0	0.00%	0.0000	0.00%
85	5.9500	35.3692	59.71	1209.5	1155.8	95.55%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	0.0000	0.00	0.0	0.00%	0.0000	0.00%
90	6.3000	36.5968	58.42	1267.9	1225.5	96.66%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	0.0000	0.00	0.0	0.00%	0.0000	0.00%
95	6.6500	37.8244	57.13	1325.3	1295.3	97.73%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	0.0000	0.00	0.0	0.00%	0.0000	0.00%
100	7.0000	39.0520	55.84	1381.7	1365.0	98.79%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	0.0000	0.00	0.0	0.00%	0.0000	0.00%
105	7.3500	40.2796	54.55	1436.8	1434.8	99.85%	16.3200	65.00	273.4	120	43.89%	28.2000	65.00	832.5	720	86.49%	0.0000	0.00	0.0	0.00%	0.0000	0.00%
110	7.7000	41.0072	62.40	2120.5	1504.5	70.95%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	34.2340	60.90	1155.0	1091	94.48%	
115	8.0500	42.2348	61.37	2213.6	1574.3	71.12%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	34.2340	60.90	1155.0	1091	94.48%	
120	8.4000	43.4624	60.34	2306.2	1644.0	71.29%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	34.2340	60.90	1155.0	1091	94.48%	
125	8.7500	44.6900	59.31	2398.1	1713.8	71.46%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	34.2340	60.90	1155.0	1091	94.48%	
130	9.1000	45.9176	58.27	2489.0	1783.5	71.66%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	34.8280	60.28	1183.6	1125	95.05%	
135	9.4500	47.1452	57.24	2578.7	1853.3	71.87%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	36.1480	58.89	1246.6	1200	96.26%	
140	9.8000	48.3728	56.21	2667.2	1923.0	72.10%	16.3200	65.00	273.4	120	43.89%	26.5500	65.00	736.7	626	85.01%	37.4680	57.50	1308.8	1275	97.42%	
145	10.1500	49.6004	55.18	2754.1	1992.8	72.36%	16.3200	65.00	273.4	120	43.89%	26.7480	65.00	747.9	638	85.24%	38.7880	56.12	1369.7	1350	98.56%	
150	10.5000	50.8280	54.15	2839.3	2062.5	72.64%	16.3200	65.00	273.4	120	43.89%	28.0020	65.00	820.7	709	86.36%	40.1080	54.73	1429.2	1425	99.70%	



8653 E. Highway 67
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WPE Class:	H15	16000 Lb Load	Max. One Section Length =	55	ft	Max. Bot Section Length =	53	ft
Top Dia. (in) =	17		Max. Top Section Length =	47.5	ft	Bot Section Thk. (if 2 sections) =	0.3125	in
One Section Taper =	0.2040		Top Section Length for 55' - 65' =	40	ft	Bot Section Thk. (if 3 sections) =	0.3125	in
Multi-Section Taper =	0.2020		Top Section Thk. =	0.25	in	Bot Section Thk. (Height > 120') =	0.3125	in
Taper for height > 120' =	0.2020							
Shape (sides) =	12		Max. Mid Section Length =	36	ft	Material Grade =	65	ksi
Slip joint Factor =	1.65		Mid Section Thk. =	0.3125	in	Bend Radius =	4	x thickness
Embedded length (ft) =	10%	Ht + 2				Min. GL to Bot of Slip-Joint =	7	ft
Fixity from Bot (ft) =	7%	Ht + 0						



Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	17	23.1200	0.25	1626													1626	5.0000	22.1000	65.00	525.42	507.5	368.0	72.51%
35	35	17	24.1400	0.25	1945													1945	5.5000	23.0180	65.00	570.76	551.3	440.0	79.81%
40	40	17	25.1600	0.25	2279													2279	6.0000	23.9360	65.00	617.97	596.9	512.0	85.77%
45	45	17	26.1800	0.25	2627													2627	6.5000	24.8540	65.00	667.06	644.3	584.0	90.64%
50	50	17	27.2000	0.25	2988													2988	7.0000	25.7720	65.00	718.03	693.6	656.0	94.58%
55	55	17	28.2200	0.25	3364													3364	7.5000	26.6900	65.00	770.87	744.6	728.0	97.77%
60	40	17	25.0800	0.25	2275		3.5	23.5000	23.8730	28.6200	0.3125	2084	3.5	23.5000	23.8730	28.6200	0.3125	4358	8.0000	27.0040	65.00	979.82	946.4	800.0	84.53%
65	47.5	17	26.5950	0.25	2800		3.75	21.2500	25.3375	29.6300	0.3125	1974	3.75	21.2500	25.3375	29.6300	0.3125	4774	8.5000	27.9130	65.00	1048.09	1012.4	872.0	86.13%
70	47.5	17	26.5950	0.25	2800		3.75	26.2500	25.3375	30.6400	0.3125	2484	3.75	26.2500	25.3375	30.6400	0.3125	5284	9.0000	28.8220	65.00	1118.66	1080.5	944.0	87.36%
75	47.5	17	26.5950	0.25	2800		3.75	31.2500	25.3375	31.6500	0.3125	3011	3.75	31.2500	25.3375	31.6500	0.3125	5811	9.5000	29.7310	65.00	1191.53	1150.9	1016.0	88.28%
80	47.5	17	26.5950	0.25	2800		3.75	36.2500	25.3375	32.6600	0.3125	3555	3.75	36.2500	25.3375	32.6600	0.3125	6355	10.0000	30.6400	65.00	1266.70	1223.5	1088.0	88.92%
85	47.5	17	26.5950	0.25	2800		3.75	41.2500	25.3375	33.6700	0.3125	4117	3.75	41.2500	25.3375	33.6700	0.3125	6917	10.5000	31.5490	65.00	1344.17	1298.4	1160.0	89.34%
90	47.5	17	26.5950	0.25	2800		3.75	46.2500	25.3375	34.6800	0.3125	4696	3.75	46.2500	25.3375	34.6800	0.3125	7496	11.0000	32.4580	65.00	1423.94	1375.4	1232.0	89.57%
95	47.5	17	26.5950	0.25	2800		3.75	51.2500	25.3375	35.6900	0.3125	5292	3.75	51.2500	25.3375	35.6900	0.3125	8092	11.5000	33.3670	65.00	1506.01	1454.7	1304.0	89.64%
100	47.5	17	26.5950	0.25	2800		3.75	56.2500	25.3375	36.7000	0.3125	5906	3.75	56.2500	25.3375	36.7000	0.3125	8705	12.0000	34.2760	65.00	1590.38	1536.2	1376.0	89.57%
105	54	17	27.9080	0.25	3280		4	55.0000	26.6000	37.7100	0.3125	5988	4	55.0000	26.6000	37.7100	0.3125	9288	12.5000	35.1850	65.00	1677.05	1619.9	1448.0	89.39%
110	47.5	17	26.5950	0.25	2800	3.75	36.0000	25.3375	32.6095	0.3125	3528	4.5	34.7500	31.0755	38.0950	0.3125	4072	10400	13.0000	35.4690	65.00	1704.60	1646.5	1520.0	92.32%
115	47.5	17	26.5950	0.25	2800	3.75	36.0000	25.3375	32.6095	0.3125	3528	4.5	39.7500	31.0755	39.1050	0.3125	4727	11054	13.5000	36.3780	65.00	1794.28	1733.1	1592.0	91.86%
120	47.5	17	26.5950	0.25	2800	3.75	36.0000	25.3375	32.6095	0.3125	3528	4.5	44.7500	31.0755	40.1150	0.3125	5398	11726	14.0000	37.2870	65.00	1886.27	1822.0	1664.0	91.33%
125	47.5	17	26.5950	0.25	2800	3.75	36.0000	25.3375	32.6095	0.3125	3528	4.5	49.7500	31.0755	41.1250	0.3125	6088	12415	14.5000	38.1960	64.77	1973.41	1906.2	1736.0	91.07%
130	47.5	17	26.5950	0.25	2800	3.75	37.7500	25.3375	32.9630	0.3125	3722	4.5	53.0000	31.4290	42.1350	0.3125	6609	13131	15.0000	39.1050	64.00	2045.22	1975.5	1808.0	91.52%
135	47.5	17	26.5950	0.25	2800	3.75	43.0000	25.3375	34.0235	0.3125	4318	4.75	53.0000	32.4390	43.1450	0.3125	6792	13909	15.5000	40.0140	63.24	2117.00	2044.9	1880.0	91.94%
140	47.5	17	26.5950	0.25	2800	3.75	48.0000	25.3375	35.0335	0.3125	4903	4.75	53.0000	33.4490	44.1550	0.3125	6975	14677	16.0000	40.9230	62.47	2188.67	2114.1	1952.0	92.33%
145	48	17	26.6960	0.25	2836	3.75	52.7500	25.4385	36.0940	0.3125	5493	5	53.0000	34.4590	45.1650	0.3125	7158	15486	16.5000	41.8320	61.71	2260.13	2183.1	2024.0	92.71%
150	53	17	27.7060	0.25	3204	3.75	53.0000	26.4485	37.1545	0.3125	5706	5.25	53.0000	35.4690	46.1750	0.3125	7341	16251	17.0000	42.7410	60.94	2331.33	2251.9	2096.0	93.08%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	22.6916	65.00	535.5	414.4	77.38%	18.0200	65.00	334.8	128	38.23%										
35	2.4500	23.6402	65.00	582.0	488.8	83.98%	18.0200	65.00	334.8	128	38.23%										
40	2.8000	24.5888	65.00	630.4	563.2	89.33%	18.0200	65.00	334.8	128	38.23%										
45	3.1500	25.5374	65.00	680.8	637.6	93.65%	18.0200	65.00	334.8	128	38.23%										
50	3.5000	26.4860	65.00	733.1	712.0	97.12%	18.0200	65.00	334.8	128	38.23%										
55	3.8500	27.4346	65.00	787.3	786.4	99.88%	18.0200	65.00	334.8	128	38.23%										
60	4.2000	27.7716	65.00	1002.0	860.8	85.91%	18.0100	65.00	334.4	128	38.27%	24.3730	65.00	619.3	552	89.14%					
65	4.5500	28.7109	65.00	1072.1	935.2	87.23%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%					
70	4.9000	29.6502	65.00	1144.6	1009.6	88.21%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%					
75	5.2500	30.5895	65.00	1219.4	1084.0	88.89%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%					
80	5.6000	31.5288	65.00	1296.7	1158.4	89.34%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%					
85	5.9500	32.4681	65.00	1376.3	1232.8	89.57%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%					
90	6.3000	33.4074	65.00	1458.3	1307.2	89.64%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%					
95	6.6500	34.3467	65.00	1542.6	1381.6	89.56%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%					
100	7.0000	35.2860	65.00	1629.3	1456.0	89.36%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%					
105	7.3500	36.2253	65.00	1718.4	1530.4	89.06%	18.0100	65.00	334.4	128	38.27%	27.1000	65.00	768.0	768	100.00%					
110	7.7000	36.5396	65.00	1748.8	1604.8	91.77%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%	31.7005	65.00	1311.1	1172	89.39%
115	8.0500	37.4789	65.00	1841.0	1679.2	91.21%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%	31.7005	65.00	1311.1	1172	89.39%
120	8.4000	38.4182	64.58	1923.1	1753.6	91.19%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%	31.7005	65.00	1311.1	1172	89.39%
125	8.7500	39.3575	63.79	1994.8	1828.0	91.64%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%	31.7005	65.00	1311.1	1172	89.39%
130	9.1000	40.2968	63.00	2066.4	1902.4	92.06%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%	32.0540	65.00	1340.9	1200	89.49%
135	9.4500	41.2361	62.21	2137.9	1976.8	92.46%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%	33.0640	65.00	1428.0	1280	89.63%
140	9.8000	42.1754	61.42	2209.1	2051.2	92.85%	18.0100	65.00	334.4	128	38.27%	25.8375	65.00	697.1	668	95.82%	34.0740	65.00	1517.9	1360	89.60%
145	10.1500	43.1147	60.63	2280.1	2125.6	93.23%	18.0100	65.00	334.4	128	38.27%	25.9385	65.00	702.7	676	96.20%	35.0840	65.00	1610.5	1440	89.41%
150	10.5000	44.0540	59.84	2350.6	2200.0	93.59%	18.0100	65.00	334.4	128	38.27%	26.9485	65.00	759.3	756	99.57%	36.0940	65.00	1705.8	1520	89.11%



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WPE Class: H16 17000 Lb Load Max. One Section Length = 55 ft
Top Dia. (in) = 17.5 Max. Top Section Length = 47.5 ft
One Section Taper = 0.2115 Top Section Length for 55' - 65' = 40 ft
Multi-Section Taper = 0.2080 Top Section Thk. = 0.25 in
Taper for height > 120' = 0.2080
Shape (sides) = 12
Slip joint Factor = 1.65
Max. Mid Section Length = 36 ft
Mid Section Thk. = 0.3125 in
Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.3125 in
Bot Section Thk. (if 3 sections) = 0.3125 in
Bot Section Thk. (Height > 120') = 0.3125 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

H16

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	17.5	23.8450	0.25	1676													1676	5.0000	22.7875	65.00	559.20	540.1	391.0	72.39%
35	35	17.5	24.9025	0.25	2006													2006	5.5000	23.7393	65.00	607.69	587.0	467.5	79.64%
40	40	17.5	25.9600	0.25	2350													2350	6.0000	24.6910	65.00	658.21	635.8	544.0	85.56%
45	45	17.5	27.0175	0.25	2709													2709	6.5000	25.6428	65.00	710.74	686.5	620.5	90.38%
50	50	17.5	28.0750	0.25	3082													3082	7.0000	26.5945	65.00	765.28	739.2	697.0	94.29%
55	55	17.5	29.1325	0.25	3470			0.0000	0.0000	0.0000	0							3470	7.5000	27.5463	65.00	821.85	793.8	773.5	97.44%
60	40	17.5	25.8200	0.25	2343			0.0000	0.0000	0.0000	0	3.5	23.5000	24.5920	29.4800	0.3125	2147	4490	8.0000	27.8160	65.00	1040.69	1005.2	850.0	84.56%
65	47.5	17.5	27.3800	0.25	2883			0.0000	0.0000	0.0000	0	3.75	21.2500	26.1000	30.5200	0.3125	2034	4917	8.5000	28.7520	65.00	1113.15	1075.2	926.5	86.17%
70	47.5	17.5	27.3800	0.25	2883							3.75	26.2500	26.1000	31.5600	0.3125	2560	5443	9.0000	29.6880	65.00	1188.03	1147.6	1003.0	87.40%
75	47.5	17.5	27.3800	0.25	2883							3.75	31.2500	26.1000	32.6000	0.3125	3103	5986	9.5000	30.6240	65.00	1265.36	1222.2	1079.5	88.32%
80	47.5	17.5	27.3800	0.25	2883							3.75	36.2500	26.1000	33.6400	0.3125	3663	6547	10.0000	31.5600	65.00	1345.13	1299.3	1156.0	88.97%
85	47.5	17.5	27.3800	0.25	2883							3.75	41.2500	26.1000	34.6800	0.3125	4242	7125	10.5000	32.4960	65.00	1427.33	1378.7	1232.5	89.40%
90	47.5	17.5	27.3800	0.25	2883							3.75	46.2500	26.1000	35.7200	0.3125	4839	7722	11.0000	33.4320	65.00	1511.97	1460.4	1309.0	89.63%
95	47.5	17.5	27.3800	0.25	2883			0.0000	0.0000	0.0000	0	3.75	51.2500	26.1000	36.7600	0.3125	5453	8336	11.5000	34.3680	65.00	1599.05	1544.6	1385.5	89.70%
100	47.5	17.5	27.3800	0.25	2883			0.0000	0.0000	0.0000	0	3.75	56.2500	26.1000	37.8000	0.3125	6085	8968	12.0000	35.3040	65.00	1688.56	1631.0	1462.0	89.64%
105	54	17.5	28.7320	0.25	3377			0.0000	0.0000	0.0000	0	4	55.0000	27.4000	38.8400	0.3125	6170	9547	12.5000	36.2400	65.00	1780.52	1719.8	1538.5	89.46%
110	47.5	17.5	27.3800	0.25	2883	3.75	36.0000	26.1000	33.5880	0.3125	3635	4.75	35.0000	31.9750	39.2550	0.3125	4225	10743	13.0000	36.5510	65.00	1811.61	1749.9	1615.0	92.29%
115	47.5	17.5	27.3800	0.25	2883	3.75	36.0000	26.1000	33.5880	0.3125	3635	4.75	40.0000	31.9750	40.2950	0.3125	4899	11417	13.5000	37.4870	65.00	1906.82	1841.8	1691.5	91.84%
120	47.5	17.5	27.3800	0.25	2883	3.75	36.0000	26.1000	33.5880	0.3125	3635	4.75	45.0000	31.9750	41.3350	0.3125	5592	12110	14.0000	38.4230	64.57	1991.34	1923.5	1768.0	91.92%
125	47.5	17.5	27.3800	0.25	2883	3.75	36.0000	26.1000	33.5880	0.3125	3635	4.75	50.0000	31.9750	42.3750	0.3125	6302	12820	14.5000	39.3590	63.79	2065.28	1994.9	1844.5	92.46%
130	47.5	17.5	27.3800	0.25	2883	3.75	38.0000	26.1000	34.0040	0.3125	3864	4.75	53.0000	32.3910	43.4150	0.3125	6812	13559	15.0000	40.2950	63.00	2139.17	2066.3	1921.0	92.97%
135	47.5	17.5	27.3800	0.25	2883	3.75	43.0000	26.1000	35.0440	0.3125	4449	4.75	53.0000	33.4310	44.4550	0.3125	7000	14332	15.5000	41.2310	62.21	2212.91	2137.5	1997.5	93.45%
140	47.5	17.5	27.3800	0.25	2883	3.75	48.2500	26.1000	36.1360	0.3125	5082	5	53.0000	34.4710	45.4950	0.3125	7189	15154	16.0000	42.1670	61.43	2286.41	2208.5	2074.0	93.91%
145	48	17.5	27.4840	0.25	2920	3.75	53.0000	26.2040	37.2280	0.3125	5691	5.25	53.0000	35.5110	46.5350	0.3125	7377	15988	16.5000	43.1030	60.64	2359.58	2279.2	2150.5	94.35%
150	53	17.5	28.5240	0.25	3300	4	53.2500	27.1920	38.2680	0.3125	5902	5.25	53.0000	36.5510	47.5750	0.3125	7566	16768	17.0000	44.0390	59.85	2432.34	2349.5	2227.0	94.79%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	23.4009	65.00	570.1	440.3	77.23%	18.5575	65.00	355.5	136	38.25%										
35	2.4500	24.3843	65.00	619.8	519.4	83.79%	18.5575	65.00	355.5	136	38.25%										
40	2.8000	25.3678	65.00	671.7	598.4	89.09%	18.5575	65.00	355.5	136	38.25%										
45	3.1500	26.3513	65.00	725.6	677.5	93.37%	18.5575	65.00	355.5	136	38.25%										
50	3.5000	27.3348	65.00	781.5	756.5	96.80%	18.5575	65.00	355.5	136	38.25%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
55	3.8500	28.3182	65.00	839.6	835.6	99.52%	18.5575	65.00	355.5	136	38.25%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
60	4.2000	28.6064	65.00	1064.2	914.6	85.94%	18.5400	65.00	354.8	136	38.33%	25.0920	65.00	656.9	587	89.28%	0.0000	0.00	0.0	0	0.00%
65	4.5500	29.5736	65.00	1138.6	993.7	87.27%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	0.0000	0.00	0.0	0	0.00%
70	4.9000	30.5408	65.00	1215.5	1072.7	88.25%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	0.0000	0.00	0.0	0	0.00%
75	5.2500	31.5080	65.00	1294.9	1151.8	88.94%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	0.0000	0.00	0.0	0	0.00%
80	5.6000	32.4752	65.00	1376.9	1230.8	89.39%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	0.0000	0.00	0.0	0	0.00%
85	5.9500	33.4424	65.00	1461.4	1309.9	89.63%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	0.0000	0.00	0.0	0	0.00%
90	6.3000	34.4096	65.00	1548.4	1388.9	89.70%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	0.0000	0.00	0.0	0	0.00%
95	6.6500	35.3768	65.00	1637.9	1468.0	89.63%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	0.0000	0.00	0.0	0	0.00%
100	7.0000	36.3440	65.00	1729.9	1547.0	89.43%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	0.0000	0.00	0.0	0	0.00%
105	7.3500	37.3112	65.00	1824.4	1626.1	89.13%	18.5400	65.00	354.8	136	38.33%	27.9000	65.00	814.6	816	100.17%	0.0000	0.00	0.0	0	0.00%
110	7.7000	37.6534	65.00	1858.4	1705.1	91.75%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	32.6000	65.00	1387.7	1241	89.43%
115	8.0500	38.6206	64.41	1938.6	1784.2	92.03%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	32.6000	65.00	1387.7	1241	89.43%
120	8.4000	39.5878	63.60	2012.4	1863.2	92.59%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	32.6000	65.00	1387.7	1241	89.43%
125	8.7500	40.5550	62.78	2086.1	1942.3	93.11%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	32.6000	65.00	1387.7	1241	89.43%
130	9.1000	41.5222	61.97	2159.6	2021.3	93.60%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	33.0160	65.00	1423.8	1275	89.55%
135	9.4500	42.4894	61.16	2232.9	2100.4	94.06%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	34.0560	65.00	1516.3	1360	89.69%
140	9.8000	43.4566	60.34	2305.8	2179.4	94.52%	18.5400	65.00	354.8	136	38.33%	26.6000	65.00	739.5	710	95.97%	35.0960	65.00	1611.6	1445	89.66%
145	10.1500	44.4238	59.53	2378.2	2258.5	94.96%	18.5400	65.00	354.8	136	38.33%	26.7040	65.00	745.4	718	96.36%	36.1360	65.00	1709.9	1530	89.48%
150	10.5000	45.3910	58.72	2450.1	2337.5	95.40%	18.5400	65.00	354.8	136	38.33%	27.6920	65.00	802.4	799	99.58%	37.1760	65.00	1811.0	1615	89.18%



8653 E. Highway 67
Alvarado, TX 76009
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WPE Class: H17 18000 Lb Load Max. One Section Length = 55 ft
Top Dia. (in) = 18 Max. Top Section Length = 47.5 ft
One Section Taper = 0.2180 Top Section Length for 55' - 65' = 40 ft
Multi-Section Taper = 0.2150 Top Section Thk. = 0.25 in
Taper for height > 120' = 0.2150
Shape (sides) = 12
Slip joint Factor = 1.65
Max. Mid Section Length = 36 ft
Mid Section Thk. = 0.3125 in
Max. Bot Section Length = 53 ft
Bot Section Thk. (if 2 sections) = 0.3125 in
Bot Section Thk. (if 3 sections) = 0.3125 in
Bot Section Thk. (Height > 120') = 0.3125 in
Material Grade = 65 ksi
Bend Radius = 4 x thickness
Min. GL to Bot of Slip-Joint = 7 ft
Embedded length (ft) = 10% Ht + 2
Fixity from Bot (ft) = 7% Ht + 0

H17

Height	Top Section					Middle Section					Bottom Section					Total	Ground Line								
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap.	P-P Cap	Req'd Mom.	Usage
30	30	18	24.5400	0.25	1725													1725	5.0000	23.4500	65.00	592.74	572.5	414.0	72.31%
35	35	18	25.6300	0.25	2065													2065	5.5000	24.4310	65.00	644.21	622.3	495.0	79.55%
40	40	18	26.7200	0.25	2419													2419	6.0000	25.4120	65.00	697.82	674.0	576.0	85.46%
45	45	18	27.8100	0.25	2789													2789	6.5000	26.3930	65.00	753.57	727.9	657.0	90.26%
50	50	18	28.9000	0.25	3173													3173	7.0000	27.3740	65.00	811.46	783.8	738.0	94.16%
55	55	18	29.9900	0.25	3572													3572	7.5000	28.3550	65.00	871.50	841.8	819.0	97.29%
60	40	18	26.6000	0.25	2413							3.75	23.7500	25.2938	30.4000	0.3125	2236	4648	8.0000	28.6800	65.00	1107.49	1069.7	900.0	84.13%
65	47.5	18	28.2125	0.25	2970							4	21.5000	26.8525	31.4750	0.3125	2121	5091	8.5000	29.6475	65.00	1184.74	1144.4	981.0	85.72%
70	47.5	18	28.2125	0.25	2970							4	26.5000	26.8525	32.5500	0.3125	2663	5632	9.0000	30.6150	65.00	1264.61	1221.5	1062.0	86.94%
75	47.5	18	28.2125	0.25	2970							4	31.5000	26.8525	33.6250	0.3125	3223	6193	9.5000	31.5825	65.00	1347.07	1301.2	1143.0	87.84%
80	47.5	18	28.2125	0.25	2970							4	36.5000	26.8525	34.7000	0.3125	3802	6771	10.0000	32.5500	65.00	1432.15	1383.3	1224.0	88.48%
85	47.5	18	28.2125	0.25	2970							4	41.5000	26.8525	35.7750	0.3125	4399	7369	10.5000	33.5175	65.00	1519.82	1468.0	1305.0	88.89%
90	47.5	18	28.2125	0.25	2970							4	46.5000	26.8525	36.8500	0.3125	5014	7984	11.0000	34.4850	65.00	1610.10	1555.2	1386.0	89.12%
95	47.5	18	28.2125	0.25	2970							4	51.5000	26.8525	37.9250	0.3125	5648	8618	11.5000	35.4525	65.00	1702.99	1645.0	1467.0	89.18%
100	47.5	18	28.2125	0.25	2970							4	56.5000	26.8525	39.0000	0.3125	6300	9270	12.0000	36.4200	65.00	1798.48	1737.2	1548.0	89.11%
105	54.5	18	29.7175	0.25	3519							4.25	54.7500	28.3038	40.0750	0.3125	6342	9861	12.5000	37.3875	65.00	1896.58	1832.0	1629.0	88.92%
110	47.5	18	28.2125	0.25	2970	4	36.0000	26.8525	34.5925	0.3125	3743	4.75	35.2500	32.9463	40.5250	0.3125	4390	11103	13.0000	37.7300	65.00	1931.93	1866.1	1710.0	91.63%
115	47.5	18	28.2125	0.25	2970	4	36.0000	26.8525	34.5925	0.3125	3743	4.75	40.2500	32.9463	41.6000	0.3125	5087	11799	13.5000	38.6975	64.34	2013.03	1944.4	1791.0	92.11%
120	47.5	18	28.2125	0.25	2970	4	36.0000	26.8525	34.5925	0.3125	3743	4.75	45.2500	32.9463	42.6750	0.3125	5802	12514	14.0000	39.6650	63.53	2089.45	2018.3	1872.0	92.75%
125	47.5	18	28.2125	0.25	2970	4	36.0000	26.8525	34.5925	0.3125	3743	4.75	50.2500	32.9463	43.7500	0.3125	6535	13248	14.5000	40.6325	62.72	2165.78	2092.0	1953.0	93.36%
130	47.5	18	28.2125	0.25	2970	4	38.2500	26.8525	35.0763	0.3125	4009	4.75	53.0000	33.4300	44.8250	0.3125	7034	14012	15.0000	41.6000	61.90	2241.92	2165.5	2034.0	93.93%
135	47.5	18	28.2125	0.25	2970	4	43.5000	26.8525	36.2050	0.3125	4643	5	53.0000	34.5050	45.9000	0.3125	7229	14841	15.5000	42.5675	61.09	2317.76	2238.8	2115.0	94.47%
140	47.5	18	28.2125	0.25	2970	4	48.7500	26.8525	37.3338	0.3125	5297	5.25	53.0000	35.5800	46.9750	0.3125	7423	15690	16.0000	43.5350	60.28	2393.22	2311.7	2196.0	95.00%
145	48.5	18	28.4275	0.25	3046	4	52.7500	27.0675	38.4088	0.3125	5848	5.25	53.0000	36.6550	48.0500	0.3125	7618	16513	16.5000	44.5025	59.46	2468.19	2384.1	2277.0	95.51%
150	53.25	18	29.4488	0.25	3419	4	53.2500	28.0888	39.5375	0.3125	6099	5.5	53.0000	37.7300	49.1250	0.3125	7813	17332	17.0000	45.4700	58.65	2542.58	2455.9	2358.0	96.01%

Height	Fixity Point						5 Ft from Top						Top Slip-Joint						Bot Slip-Joint					
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage			
30	2.1000	24.0822	65.00	604.3	466.2	77.14%	19.0900	65.00	376.6	144	38.23%													
35	2.4500	25.0959	65.00	657.1	549.9	83.68%	19.0900	65.00	376.6	144	38.23%													
40	2.8000	26.1096	65.00	712.1	633.6	88.97%	19.0900	65.00	376.6	144	38.23%	0.0000	0.00	0	0.00	0.00%	0.0000	0.00	0.0	0.00%	0.00%			
45	3.1500	27.1233	65.00	769.3	717.3	93.24%	19.0900	65.00	376.6	144	38.23%	0.0000	0.00	0	0.00%	0.00%	0.0000	0.00	0.0	0.00%	0.00%			
50	3.5000	28.1370	65.00	828.7	801.0	96.65%	19.0900	65.00	376.6	144	38.23%													
55	3.8500	29.1507	65.00	890.4	884.7	99.36%	19.0900	65.00	376.6	144	38.23%													
60	4.2000	29.4970	65.00	1132.6	968.4	85.50%	19.0750	65.00	376.0	144	38.29%	25.7938	65.00	694.7	617	88.74%	0.0000	0.00	0.0	0.00%	0.00%			
65	4.5500	30.4968	65.00	1212.0	1052.1	86.81%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	0.0000	0.00	0.0	0.00%	0.00%			
70	4.9000	31.4965	65.00	1294.0	1135.8	87.78%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	0.0000	0.00	0.0	0.00%	0.00%			
75	5.2500	32.4963	65.00	1378.7	1219.5	88.45%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	0.0000	0.00	0.0	0.00%	0.00%			
80	5.6000	33.4960	65.00	1466.1	1303.2	88.89%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	0.0000	0.00	0.0	0.00%	0.00%			
85	5.9500	34.4958	65.00	1556.2	1386.9	89.12%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	0.0000	0.00	0.0	0.00%	0.00%			
90	6.3000	35.4955	65.00	1649.0	1470.6	89.18%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	0.0000	0.00	0.0	0.00%	0.00%			
95	6.6500	36.4953	65.00	1744.5	1554.3	89.10%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	0.0000	0.00	0.0	0.00%	0.00%			
100	7.0000	37.4950	65.00	1842.6	1638.0	88.89%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	0.0000	0.00	0.0	0.00%	0.00%			
105	7.3500	38.4948	64.51	1929.0	1721.7	89.26%	19.0750	65.00	376.0	144	38.29%	28.8038	65.00	869.0	869	99.94%								
110	7.7000	38.8695	64.20	1957.6	1805.4	92.23%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	33.5713	65.00	1472.8	1310	88.91%			
115	8.0500	39.8693	63.36	2033.8	1889.1	92.88%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	33.5713	65.00	1472.8	1310	88.91%			
120	8.4000	40.8690	62.52	2110.0	1972.8	93.50%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	33.5713	65.00	1472.8	1310	88.91%			
125	8.7500	41.8688	61.68	2185.9	2056.5	94.08%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	33.5713	65.00	1472.8	1310	88.91%			
130	9.1000	42.8685	60.84	2261.5	2140.2	94.64%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	34.0550	65.00	1516.2	1350	89.04%			
135	9.4500	43.8683	60.00	2336.7	2223.9	95.17%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	35.1300	65.00	1614.8	1440	89.18%			
140	9.8000	44.8680	59.16	2411.3	2307.6	95.70%	19.0750	65.00	376.0	144	38.29%	27.3525	65.00	782.6	747	95.46%	36.2050	65.00	1716.5	1530	89.14%			
145	10.1500	45.8678	58.32	2485.3	2391.3	96.22%	19.0750	65.00	376.0	144	38.29%	27.5675	65.00	795.1	765	96.22%	37.2800	65.00	1821.3	1620	88.95%			
150	10.5000	46.8675	57.48	2558.5	2475.0	96.73%	19.0750	65.00	376.0	144	38.29%	28.5888	65.00	855.9	851	99.37%	38.3550	64.63	1918.3	1710	89.14%			



8653 E. Highway 67
Alvarado, TX 76009
Office: 817-852-1700
www.SabreTubularStructures.com

WPE Class:	H18	19000 Lb Load	Max. One Section Length =	55	ft	Max. Bot Section Length =	53	ft
Top Dia. (in) =	18.5		Max. Top Section Length =	47.5	ft	Bot Section Thk. (if 2 sections) =	0.3125	in
One Section Taper =	0.2235		Top Section Length for 55' - 65' =	40	ft	Bot Section Thk. (if 3 sections) =	0.3125	in
Multi-Section Taper =	0.2200		Top Section Thk. =	0.25	in	Bot Section Thk. (Height > 120') =	0.3125	in
Taper for height > 120' =	0.2200							
Shape (sides) =	12		Max. Mid Section Length =	36	ft	Material Grade =	65	ksi
Slip joint Factor =	1.65		Mid Section Thk. =	0.3125	in	Bend Radius =	4	x thickness
Embedded length (ft) =	10%	Ht + 2				Min. GL to Bot of Slip-Joint =	7	ft
Fixity from Bot (ft) =	7%	Ht + 0						

H18

Height	Top Section					Middle Section						Bottom Section						Total	Ground Line						
	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Slip Joint	Length	Top Dia.	Base Dia.	Thk.	Weight	Weight*	From Bot	Dia.	Allw. Str.	F-F Cap	P-P Cap	Req'd Mom.	Usage
30	30	18.5	25.2050	0.25	1773													1773	5.0000	24.0875	65.00	625.94	604.6	437.0	72.28%
35	35	18.5	26.3225	0.25	2122													2122	5.0000	25.0933	65.00	680.16	657.0	522.5	79.53%
40	40	18.5	27.4400	0.25	2486													2486	6.0000	26.0990	65.00	736.63	711.5	608.0	85.45%
45	45	18.5	28.5575	0.25	2865													2865	6.5000	27.1048	65.00	795.36	768.3	693.5	90.27%
50	50	18.5	29.6750	0.25	3260													3260	7.0000	28.1105	65.00	856.33	827.2	779.0	94.18%
55	55	18.5	30.7925	0.25	3670													3670	7.5000	29.1163	65.00	919.56	888.2	864.5	97.33%
60	40	18.5	27.3000	0.25	2478							3.75	23.7500	25.9750	31.2000	0.3125	2296	4774	8.0000	29.4400	65.00	1167.95	1128.2	950.0	84.21%
65	47.5	18.5	28.9500	0.25	3050							4	21.5000	27.5700	32.3000	0.3125	2178	5228	8.5000	30.4300	65.00	1249.13	1206.6	1035.5	85.82%
70	47.5	18.5	28.9500	0.25	3050							4	26.5000	27.5700	33.4000	0.3125	2734	5784	9.0000	31.4200	65.00	1333.04	1287.6	1121.0	87.06%
75	47.5	18.5	28.9500	0.25	3050							4	31.5000	27.5700	34.5000	0.3125	3309	6359	9.5000	32.4100	65.00	1419.67	1371.3	1206.5	87.98%
80	47.5	18.5	28.9500	0.25	3050							4	36.5000	27.5700	35.6000	0.3125	3903	6953	10.0000	33.4000	65.00	1509.04	1457.6	1292.0	88.64%
85	47.5	18.5	28.9500	0.25	3050							4	41.5000	27.5700	36.7000	0.3125	4515	7565	10.5000	34.3900	65.00	1601.12	1546.6	1377.5	89.07%
90	47.5	18.5	28.9500	0.25	3050							4	46.5000	27.5700	37.8000	0.3125	5147	8197	11.0000	35.3800	65.00	1695.94	1638.2	1463.0	89.31%
95	47.5	18.5	28.9500	0.25	3050							4	51.5000	27.5700	38.9000	0.3125	5797	8847	11.5000	36.3700	65.00	1793.48	1732.4	1548.5	89.39%
100	47.5	18.5	28.9500	0.25	3050							4	56.5000	27.5700	40.0000	0.3125	6466	9516	12.0000	37.3600	65.00	1893.76	1829.2	1634.0	89.33%
105	54.5	18.5	30.4900	0.25	3614							4.25	54.7500	29.0550	41.1000	0.3125	6508	10122	12.5000	38.3500	64.64	1985.57	1917.9	1719.5	89.65%
110	47.5	18.5	28.9500	0.25	3050	4	36.0000	27.5700	35.4900	0.3125	3843	5	35.5000	33.7650	41.5750	0.3125	4534	11427	13.0000	38.7150	64.33	2014.41	1945.8	1805.0	92.77%
115	47.5	18.5	28.9500	0.25	3050	4	36.0000	27.5700	35.4900	0.3125	3843	5	40.5000	33.7650	42.6750	0.3125	5249	12142	13.5000	39.7050	63.50	2092.61	2021.3	1890.5	93.53%
120	47.5	18.5	28.9500	0.25	3050	4	36.0000	27.5700	35.4900	0.3125	3843	5	45.5000	33.7650	43.7750	0.3125	5983	12875	14.0000	40.6950	62.66	2170.71	2096.7	1976.0	94.24%
125	47.5	18.5	28.9500	0.25	3050	4	36.0000	27.5700	35.4900	0.3125	3843	5	50.5000	33.7650	44.8750	0.3125	6735	13628	14.5000	41.6850	61.83	2248.59	2172.0	2061.5	94.91%
130	47.5	18.5	28.9500	0.25	3050	4	38.5000	27.5700	36.0400	0.3125	4146	5	53.0000	34.3150	45.9750	0.3125	7218	14414	15.0000	42.6750	61.00	2326.17	2246.9	2147.0	95.55%
135	47.5	18.5	28.9500	0.25	3050	4	43.7500	27.5700	37.1950	0.3125	4797	5.25	53.0000	35.4150	47.0750	0.3125	7418	15265	15.5000	43.6650	60.17	2403.32	2321.4	2232.5	96.17%
140	47.5	18.5	28.9500	0.25	3050	4	48.7500	27.5700	38.2950	0.3125	5437	5.25	53.0000	36.5150	48.1750	0.3125	7617	16104	16.0000	44.6550	59.34	2479.96	2395.5	2318.0	96.77%
145	48.75	18.5	29.2250	0.25	3149	4	52.7500	27.8450	39.4500	0.3125	6012	5.5	53.0000	37.6150	49.2750	0.3125	7816	16977	16.5000	45.6450	58.50	2555.96	2468.9	2403.5	97.35%
150	53.25	18.5	30.2150	0.25	3511	4.25	53.5000	28.7800	40.5500	0.3125	6284	5.5	53.0000	38.7150	50.3750	0.3125	8016	17811	17.0000	46.6350	57.67	2631.24	2541.6	2489.0	97.93%

Height	Fixity Point						5 Ft from Top					Top Slip-Joint					Bot Slip-Joint				
	From Bot	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage	Dia.	Allw. Str.	Mom. Cap	Req'd Mom.	Usage
30	2.1000	24.7357	65.00	638.1	492.1	77.12%	19.6175	65.00	398.2	152	38.17%										
35	2.4500	25.7749	65.00	693.7	580.5	83.67%	19.6175	65.00	398.2	152	38.17%										
40	2.8000	26.8142	65.00	751.6	668.8	88.98%	19.6175	65.00	398.2	152	38.17%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
45	3.1500	27.8535	65.00	811.9	757.2	93.26%	19.6175	65.00	398.2	152	38.17%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
50	3.5000	28.8928	65.00	874.5	845.5	96.69%	19.6175	65.00	398.2	152	38.17%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
55	3.8500	29.9320	65.00	939.4	933.9	99.41%	19.6175	65.00	398.2	152	38.17%	0.0000	0.00	0.0	0	0.00%	0.0000	0.00	0.0	0	0.00%
60	4.2000	30.2760	65.00	1194.2	1022.2	85.60%	19.6000	65.00	397.4	152	38.24%	26.4750	65.00	732.5	651	88.84%	0.0000	0.00	0.0	0	0.00%
65	4.5500	31.2990	65.00	1277.6	1110.6	86.93%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	0.0000	0.00	0.0	0	0.00%
70	4.9000	32.3220	65.00	1363.8	1198.9	87.91%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	0.0000	0.00	0.0	0	0.00%
75	5.2500	33.3450	65.00	1452.8	1287.3	88.61%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	0.0000	0.00	0.0	0	0.00%
80	5.6000	34.3680	65.00	1544.6	1375.6	89.06%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	0.0000	0.00	0.0	0	0.00%
85	5.9500	35.3910	65.00	1639.2	1464.0	89.31%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	0.0000	0.00	0.0	0	0.00%
90	6.3000	36.4140	65.00	1736.6	1552.3	89.39%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	0.0000	0.00	0.0	0	0.00%
95	6.6500	37.4370	65.00	1836.9	1640.7	89.32%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	0.0000	0.00	0.0	0	0.00%
100	7.0000	38.4600	64.54	1926.3	1729.0	89.76%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	0.0000	0.00	0.0	0	0.00%
105	7.3500	39.4830	63.68	2004.4	1817.4	90.67%	19.6000	65.00	397.4	152	38.24%	29.5550	65.00	915.5	917	100.13%	0.0000	0.00	0.0	0	0.00%
110	7.7000	39.8810	63.35	2034.7	1905.7	93.66%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	34.3900	65.00	1546.6	1378	89.07%
115	8.0500	40.9040	62.49	2112.6	1994.1	94.39%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	34.3900	65.00	1546.6	1378	89.07%
120	8.4000	41.9270	61.63	2190.3	2082.4	95.07%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	34.3900	65.00	1546.6	1378	89.07%
125	8.7500	42.9500	60.77	2267.7	2170.8	95.73%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	34.3900	65.00	1546.6	1378	89.07%
130	9.1000	43.9730	59.91	2344.5	2259.1	96.36%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	34.9400	65.00	1597.1	1425	89.22%
135	9.4500	44.9960	59.05	2420.8	2347.5	96.97%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	36.0400	65.00	1700.7	1520	89.38%
140	9.8000	46.0190	58.19	2496.4	2435.8	97.57%	19.6000	65.00	397.4	152	38.24%	28.0700	65.00	824.7	789	95.61%	37.1400	65.00	1807.5	1615	89.35%
145	10.1500	47.0420	57.33	2571.2	2524.2	98.17%	19.6000	65.00	397.4	152	38.24%	28.3450	65.00	841.2	812	96.56%	38.2400	64.73	1909.5	1710	89.55%
150	10.5000	48.0650	56.47	2645.1	2612.5	98.77%	19.6000	65.00	397.4	152	38.24%	29.2800	65.00	898.4	893	99.40%	39.3400	63.80	1993.5	1805	90.55%