SAG-TENSION CALCULATION

Sag and Tension Input Data

Project Name	BINAK-BK05	
Conductor Name		Hyena
Initial Modulus of Elasticity	Kg/mm2	6000
final Modulus of Elasticity	Kg/mm2	7450
Initial Coefficient of linear expansion	1/°C	0.0000188
final Coefficient of linear expansion	1/°C	0.0000188
Cross section Area of Conductor	mm2	126.2
Bare Conductor unit weight	Kg/m	0.45
Diameter of Conductor	mm	14.57
Ultimate strength of Conductor	Kg	4090
Ice Unit Weight	gr/cm3	0.913
Equivalent Creep Temperature	°C	15
EDS Temperature	°C	25

Loading Case		Ice Thick. (mm)	Wind Speed(m/s)	Temp. (°C)	Tension Limit %UTS	K	Unit Weight (Kg/m)
1	LOW WIND	0	28	15	40	0	0.844
2	NESC LIGHT	0	26.5	-1	40	0.07	0.852
3	HIGH WIND	0	45	0	50	0	1.898
4	WIND & ICE	6	22	-5	50	0	1.137
5	WIND & BARE	0	22	-5	40	0	0.63
6	EDS	0	0	25	20	0	0.45
7	MIN. TEMP.	0	0	-5	25	0	0.45
8	MAX. TEMP.	0	0	80	25	0	0.45
9	30% HIGH WIND	0	24	0	50	0	0.691
10	50% HIGH WIND	0	32	0	50	0	1.035

Span (m)	Govern Case	Hot Param(m)	Cold Param(m)	Sag in Hot Param.	Max Sag in Case	Case No	Max Creep Tension	EDS initial Tension	Tension In Case 1	% UTS	Tension In Case 2	% UTS	Tension In Case 3	% UTS	Tension In Case 4	% UTS	Tension In Case 5	% UTS	Tension In Case 6	% UTS	Tension In Case 7	% UTS	Tension In Case 8	% UTS	Tension In Case 9	% UTS	Tension In Case 10	% UTS
100	7	649	2272	1.93	1.93	Creep	291.8	741.8	921.6	23	1107.7	27	1492.2	36	1263.7	31	1079.9	26	621.6	15	1022.5	25	303.8	7	1033.4	25	1166.7	29
105	7	676	2272	2.04	2.04	Creep	304	750.4	936.2	23	1118.7	27	1522.1	37	1279.7	31	1084.5	27	629.4	15	1022.5	25	315.4	8	1040.9	25	1181.9	29
110	7	702	2272	2.15	2.15	Creep	316	758.8	950.7	23	1129.6	28	1551.7	38	1295.6	32	1089.2	27	637	16	1022.5	25	326.8	8	1048.3	26	1197	29
115	7	728	2272	2.27	2.27	Creep	327.8	766.9	964.9	24	1140.5	28	1580.8	39	1311.5	32	1093.9	27	644.5	16	1022.5	25	338	8	1055.8	26	1211.9	30
120	7	754	2272	2.39	2.39	Creep	339.3	774.9	979	24	1151.4	28	1609.5	39	1327.2	32	1098.7	27	651.8	16	1022.5	25	349	9	1063.2	26	1226.7	30
125	7	779	2272	2.51	2.51	Creep	350.7	782.7	992.8	24	1162.2	28	1637.8	40	1342.7	33	1103.4	27	659	16	1022.5	25	359.7	9	1070.6	26	1241.4	30
130	7	804	2272	2.63	2.63	Creep	361.9	790.2	1006.3	25	1172.9	29	1665.6	41	1358.1	33	1108.2	27	666.1	16	1022.5	25	370.2	9	1078	26	1255.9	31
135	7	829	2272	2.75	2.75	Creep	372.9	797.6	1019.7	25	1183.5	29	1693.1	41	1373.4	34	1112.9	27	673.1	16	1022.5	25	380.5	9	1085.3	27	1270.2	31
140	7	853	2272	2.87	2.87	Creep	383.7	804.8	1032.9	25	1194	29	1720.2	42	1388.5	34	1117.7	27	679.9	17	1022.5	25	390.6	10	1092.6	27	1284.4	31
145	7	876	2272	3	3	Creep	394.3	811.8	1045.8	26	1204.4	29	1747	43	1403.4	34	1122.4	27	686.6	17	1022.5	25	400.5	10	1099.8	27	1298.4	32
150	7	899	2272	3.13	3.13	Creep	404.7	818.6	1058.5	26	1214.7	30	1773.3	43	1418.2	35	1127.1	28	693.1	17	1022.5	25	410.2	10	1107	27	1312.2	32
155	7	922	2272	3.26	3.26	Creep	414.9	825.2	1071	26	1224.8	30	1799.3	44	1432.8	35	1131.7	28	699.5	17	1022.5	25	419.7	10	1114	27	1325.8	32
160	7	944	2272	3.39	3.39	Creep	425	831.6	1083.3	26	1234.9	30	1824.9	45	1447.2	35	1136.4	28	705.7	17	1022.5	25	429	10	1121	27	1339.3	33
165	7	966	2272	3.52	3.52	Creep	434.9	837.9	1095.4	27	1244.8	30	1850.1	45	1461.4	36	1141	28	711.9	17	1022.5	25	438.2	11	1127.9	28	1352.5	33
170	7	988	2272	3.66	3.66	3	444.6	844	1107.3	27	1254.6	31	1875	46	1475.4	36	1145.5	28	717.8	18	1022.5	25	447.2	11	1134.8	28	1365.6	33
175	7	1009	2272	3.79	3.83	3	454.2	849.9	1119	27	1264.2	31	1899.6	46	1489.2	36	1150	28	723.7	18	1022.5	25	456	11	1141.5	28	1378.5	34
180	7	1030	2272	3.93	4	3	463.5	855.6	1130.5	28	1273.8	31	1923.8	47	1502.9	37	1154.5	28	729.4	18	1022.5	25	464.7	11	1148.2	28	1391.3	34
185	7	1051	2272	4.07	4.17	3	472.7	861.2	1141.8	28	1283.2	31	1947.7	48	1516.4	37	1158.9	28	735.1	18	1022.5	25	473.2	12	1154.7	28	1403.8	34
190	7	1070	2272	4.22	4.34	3	481.8	866.6	1152.9	28	1292.4	32	1971.3	48	1529.7	37	1163.2	28	740.5	18	1022.5	25	481.5	12	1161.2	28	1416.2	35
195	7	1088	2272	4.37	4.52	3	490.7	871.9	1163.8	28	1301.5	32	1994.6	49	1542.8	38	1167.5	29	745.9	18	1022.5	25	489.7	12	1167.5	29	1428.3	35
200	7	1106	2272	4.52	4.7	3	499.4	877	1174.5	29	1310.5	32	2017.6	49	1555.7	38	1171.8	29	751.1	18	1022.5	25	497.7	12	1173.8	29	1440.3	35
205	7	1123	2272	4.68	4.89	3	508	881.9	1185	29	1319.4	32	2040.2	50	1568.5	38	1176	29	756.3	18	1022.5	25	505.6	12	1180	29	1452.2	36
206.1	3	1127	2272	4.71	4.93	3	509.8	883	1187.3	29	1321.2	32	2045	50	1571.2	38	1176.8	29	757.3	19	1022.5	25	507.2	12	1181.3	29	1454.7	36
210	3	1125	2216	4.9	5.12	3	509.6	866.1	1178.1	29	1307.6	32	2045	50	1561.2	38	1157	28	745	18	997	24	506.5	12	1164.8	28	1444.4	35
215	3	1123	2147	5.14	5.36	3	509.3	845.6	1166.9	29	1291.1	32	2045	50	1548.9	38	1133	28	730.4	18	966.1	24	505.6	12	1144.8	28	1431.8	35
220	3	1122	2082	5.39	5.62	3	509	826.4	1156.3	28	1275.3	31	2045	50	1537.1	38	1110.2	27	716.8	18	937.1	23	504.7	12	1125.9	28	1419.8	35
225	3	1120	2022	5.65	5.87	3	508.6	808.2	1146.3	28	1260.3	31	2045	50	1525.8	37	1088.7	27	704.3	17	909.9	22	503.9	12	1108	27	1408.3	34
230	3	1118	1965	5.91	6.14	3	508.2	791.2	1136.7	28	1246.1	30	2045	50	1515	37	1068.4	26	692.6	17	884.5	22	503.2	12	1091.1	27	1397.4	34
235	3	1117	1913	6.18	6.41	3	507.8	775.2	1127.7	28	1232.5	30	2045	50	1504.6	37	1049.2	26	681.8	17	860.8	21	502.4	12	1075.1	26	1386.9	34
240	3	1115	1864	6.46	6.68	3	507.4	760.2	1119.1	27	1219.7	30	2045	50	1494.7	37	1031.2	25	671.7	16	838.8	21	501.8	12	1060.1	26	1376.9	34
245	3	1114	1819	6.74	6.96	3	506.9	746.2	1110.9	27	1207.5	30	2045	50	1485.2	36	1014.3	25	662.4	16	818.4	20	501.1	12	1045.9	26	1367.4	33

Span (m)	Govern Case	Hot Param(m)	Cold Param(m)	Sag in Hot Param.	Max Sag in Case	Case No	Max Creep Tension	EDS initial Tension	Tension In Case 1	% UTS	Tension In Case 2	% UTS	Tension In Case 3	% UTS	Tension In Case 4	% UTS	Tension In Case 5	% UTS	Tension In Case 6	% UTS	Tension In Case 7	% UTS	Tension In Case 8	% UTS	Tension In Case 9	% UTS	Tension In Case 10	% UTS
250	3	1112	1777	7.02	7.25	3	506.5	733.2	1103.2	27	1195.9	29	2045	50	1476.2	36	998.5	24	653.8	16	799.6	20	500.5	12	1032.5	25	1358.3	33
255	3	1111	1738	7.32	7.54	3	506	720.9	1095.9	27	1184.9	29	2045	50	1467.5	36	983.6	24	645.7	16	782.1	19	500	12	1020	25	1349.6	33
260	3	1110	1702	7.61	7.84	3	505.5	709.5	1088.9	27	1174.5	29	2045	50	1459.2	36	969.6	24	638.2	16	766	19	499.4	12	1008.1	25	1341.4	33
265	3	1109	1669	7.92	8.15	3	505.1	698.9	1082.3	26	1164.7	28	2045	50	1451.3	35	956.5	23	631.2	15	751	18	498.9	12	996.9	24	1333.5	33
270	3	1108	1638	8.23	8.46	3	504.6	688.9	1076.1	26	1155.3	28	2045	50	1443.8	35	944.1	23	624.7	15	737.2	18	498.4	12	986.4	24	1326	32
275	3	1107	1610	8.54	8.77	3	504.1	679.6	1070.1	26	1146.4	28	2045	50	1436.5	35	932.6	23	618.6	15	724.4	18	498	12	976.5	24	1318.8	32
280	3	1106	1583	8.86	9.1	3	503.7	670.9	1064.4	26	1138	28	2045	50	1429.6	35	921.7	23	612.9	15	712.5	17	497.5	12	967.2	24	1311.9	32
285	3	1105	1559	9.19	9.42	3	503.2	662.8	1059.1	26	1130	28	2045	50	1423	35	911.5	22	607.5	15	701.5	17	497.1	12	958.4	23	1305.4	32
290	3	1104	1536	9.52	9.76	3	502.8	655.1	1053.9	26	1122.4	27	2045	50	1416.7	35	901.9	22	602.5	15	691.3	17	496.7	12	950	23	1299.2	32
295	3	1103	1515	9.86	10.1	3	502.3	648	1049.1	26	1115.2	27	2045	50	1410.6	34	892.9	22	597.8	15	681.7	17	496.3	12	942.2	23	1293.2	32
300	3	1102	1495	10.21	10.44	3	501.9	641.2	1044.4	26	1108.4	27	2045	50	1404.8	34	884.4	22	593.4	15	672.9	16	496	12	934.8	23	1287.5	31

SAG-TENSION CALCULATION

Sag and Tension Input Data

Project Name	BINAK-BK12	
Conductor Name		Hyena
Initial Modulus of Elasticity	Kg/mm2	6000
final Modulus of Elasticity	Kg/mm2	7450
Initial Coefficient of linear expansion	1/°C	0.0000188
final Coefficient of linear expansion	1/°C	0.0000188
Cross section Area of Conductor	mm2	126.2
Bare Conductor unit weight	Kg/m	0.45
Diameter of Conductor	mm	14.57
Ultimate strength of Conductor	Kg	4090
Ice Unit Weight	gr/cm3	0.913
Equivalent Creep Temperature	°C	15
EDS Temperature	°C	25

Loading Case		Ice Thick. (mm)	Wind Speed(m/s)	Temp. (°C)	Tension Limit %UTS	K	Unit Weight (Kg/m)
1	LOW WIND	0	28	15	40	0	0.844
2	NESC LIGHT	0	26.5	-1	40	0.07	0.852
3	HIGH WIND	0	45	0	50	0	1.898
4	WIND & ICE	6	22	-5	50	0	1.137
5	WIND & BARE	0	22	-5	40	0	0.63
6	EDS	0	0	25	20	0	0.45
7	MIN. TEMP.	0	0	-5	25	0	0.45
8	MAX. TEMP.	0	0	80	25	0	0.45
9	30% HIGH WIND	0	24	0	50	0	0.691
10	50% HIGH WIND	0	32	0	50	0	1.035

Span (m)	Govern Case	Hot Param(m)	Cold Param(m)	Sag in Hot Param.	Max Sag in Case	Case No	Max Creep Tension	EDS initial Tension	Tension In Case 1	% UTS	Tension In Case 2	% UTS	Tension In Case 3	% UTS	Tension In Case 4	% UTS	Tension In Case 5	% UTS	Tension In Case 6	% UTS	Tension In Case 7	% UTS	Tension In Case 8	% UTS	Tension In Case 9	% UTS	Tension In Case 10	% UTS
100	7	649	2272	1.93	1.93	Creep	291.8	741.8	921.6	23	1107.7	27	1492.2	36	1263.7	31	1079.9	26	621.6	15	1022.5	25	303.8	7	1033.4	25	1166.7	29
105	7	676	2272	2.04	2.04	Creep	304	750.4	936.2	23	1118.7	27	1522.1	37	1279.7	31	1084.5	27	629.4	15	1022.5	25	315.4	8	1040.9	25	1181.9	29
110	7	702	2272	2.15	2.15	Creep	316	758.8	950.7	23	1129.6	28	1551.7	38	1295.6	32	1089.2	27	637	16	1022.5	25	326.8	8	1048.3	26	1197	29
115	7	728	2272	2.27	2.27	Creep	327.8	766.9	964.9	24	1140.5	28	1580.8	39	1311.5	32	1093.9	27	644.5	16	1022.5	25	338	8	1055.8	26	1211.9	30
120	7	754	2272	2.39	2.39	Creep	339.3	774.9	979	24	1151.4	28	1609.5	39	1327.2	32	1098.7	27	651.8	16	1022.5	25	349	9	1063.2	26	1226.7	30
125	7	779	2272	2.51	2.51	Creep	350.7	782.7	992.8	24	1162.2	28	1637.8	40	1342.7	33	1103.4	27	659	16	1022.5	25	359.7	9	1070.6	26	1241.4	30
130	7	804	2272	2.63	2.63	Creep	361.9	790.2	1006.3	25	1172.9	29	1665.6	41	1358.1	33	1108.2	27	666.1	16	1022.5	25	370.2	9	1078	26	1255.9	31
135	7	829	2272	2.75	2.75	Creep	372.9	797.6	1019.7	25	1183.5	29	1693.1	41	1373.4	34	1112.9	27	673.1	16	1022.5	25	380.5	9	1085.3	27	1270.2	31
140	7	853	2272	2.87	2.87	Creep	383.7	804.8	1032.9	25	1194	29	1720.2	42	1388.5	34	1117.7	27	679.9	17	1022.5	25	390.6	10	1092.6	27	1284.4	31
145	7	876	2272	3	3	Creep	394.3	811.8	1045.8	26	1204.4	29	1747	43	1403.4	34	1122.4	27	686.6	17	1022.5	25	400.5	10	1099.8	27	1298.4	32
150	7	899	2272	3.13	3.13	Creep	404.7	818.6	1058.5	26	1214.7	30	1773.3	43	1418.2	35	1127.1	28	693.1	17	1022.5	25	410.2	10	1107	27	1312.2	32
155	7	922	2272	3.26	3.26	Creep	414.9	825.2	1071	26	1224.8	30	1799.3	44	1432.8	35	1131.7	28	699.5	17	1022.5	25	419.7	10	1114	27	1325.8	32
160	7	944	2272	3.39	3.39	Creep	425	831.6	1083.3	26	1234.9	30	1824.9	45	1447.2	35	1136.4	28	705.7	17	1022.5	25	429	10	1121	27	1339.3	33
165	7	966	2272	3.52	3.52	Creep	434.9	837.9	1095.4	27	1244.8	30	1850.1	45	1461.4	36	1141	28	711.9	17	1022.5	25	438.2	11	1127.9	28	1352.5	33
170	7	988	2272	3.66	3.66	3	444.6	844	1107.3	27	1254.6	31	1875	46	1475.4	36	1145.5	28	717.8	18	1022.5	25	447.2	11	1134.8	28	1365.6	33
175	7	1009	2272	3.79	3.83	3	454.2	849.9	1119	27	1264.2	31	1899.6	46	1489.2	36	1150	28	723.7	18	1022.5	25	456	11	1141.5	28	1378.5	34
180	7	1030	2272	3.93	4	3	463.5	855.6	1130.5	28	1273.8	31	1923.8	47	1502.9	37	1154.5	28	729.4	18	1022.5	25	464.7	11	1148.2	28	1391.3	34
185	7	1051	2272	4.07	4.17	3	472.7	861.2	1141.8	28	1283.2	31	1947.7	48	1516.4	37	1158.9	28	735.1	18	1022.5	25	473.2	12	1154.7	28	1403.8	34
190	7	1070	2272	4.22	4.34	3	481.8	866.6	1152.9	28	1292.4	32	1971.3	48	1529.7	37	1163.2	28	740.5	18	1022.5	25	481.5	12	1161.2	28	1416.2	35
195	7	1088	2272	4.37	4.52	3	490.7	871.9	1163.8	28	1301.5	32	1994.6	49	1542.8	38	1167.5	29	745.9	18	1022.5	25	489.7	12	1167.5	29	1428.3	35
200	7	1106	2272	4.52	4.7	3	499.4	877	1174.5	29	1310.5	32	2017.6	49	1555.7	38	1171.8	29	751.1	18	1022.5	25	497.7	12	1173.8	29	1440.3	35
205	7	1123	2272	4.68	4.89	3	508	881.9	1185	29	1319.4	32	2040.2	50	1568.5	38	1176	29	756.3	18	1022.5	25	505.6	12	1180	29	1452.2	36
206.1	3	1127	2272	4.71	4.93	3	509.8	883	1187.3	29	1321.2	32	2045	50	1571.2	38	1176.8	29	757.3	19	1022.5	25	507.2	12	1181.3	29	1454.7	36
210	3	1125	2216	4.9	5.12	3	509.6	866.1	1178.1	29	1307.6	32	2045	50	1561.2	38	1157	28	745	18	997	24	506.5	12	1164.8	28	1444.4	35
215	3	1123	2147	5.14	5.36	3	509.3	845.6	1166.9	29	1291.1	32	2045	50	1548.9	38	1133	28	730.4	18	966.1	24	505.6	12	1144.8	28	1431.8	35
220	3	1122	2082	5.39	5.62	3	509	826.4	1156.3	28	1275.3	31	2045	50	1537.1	38	1110.2	27	716.8	18	937.1	23	504.7	12	1125.9	28	1419.8	35
225	3	1120	2022	5.65	5.87	3	508.6	808.2	1146.3	28	1260.3	31	2045	50	1525.8	37	1088.7	27	704.3	17	909.9	22	503.9	12	1108	27	1408.3	34
230	3	1118	1965	5.91	6.14	3	508.2	791.2	1136.7	28	1246.1	30	2045	50	1515	37	1068.4	26	692.6	17	884.5	22	503.2	12	1091.1	27	1397.4	34
235	3	1117	1913	6.18	6.41	3	507.8	775.2	1127.7	28	1232.5	30	2045	50	1504.6	37	1049.2	26	681.8	17	860.8	21	502.4	12	1075.1	26	1386.9	34
240	3	1115	1864	6.46	6.68	3	507.4	760.2	1119.1	27	1219.7	30	2045	50	1494.7	37	1031.2	25	671.7	16	838.8	21	501.8	12	1060.1	26	1376.9	34
245	3	1114	1819	6.74	6.96	3	506.9	746.2	1110.9	27	1207.5	30	2045	50	1485.2	36	1014.3	25	662.4	16	818.4	20	501.1	12	1045.9	26	1367.4	33

Span (m)	Govern Case	Hot Param(m)	Cold Param(m)	Sag in Hot Param.	Max Sag in Case	Case No	Max Creep Tension	EDS initial Tension	Tension In Case 1	% UTS	Tension In Case 2	% UTS	Tension In Case 3	% UTS	Tension In Case 4	% UTS	Tension In Case 5	% UTS	Tension In Case 6	% UTS	Tension In Case 7	% UTS	Tension In Case 8	% UTS	Tension In Case 9	% UTS	Tension In Case 10	% UTS
250	3	1112	1777	7.02	7.25	3	506.5	733.2	1103.2	27	1195.9	29	2045	50	1476.2	36	998.5	24	653.8	16	799.6	20	500.5	12	1032.5	25	1358.3	33
255	3	1111	1738	7.32	7.54	3	506	720.9	1095.9	27	1184.9	29	2045	50	1467.5	36	983.6	24	645.7	16	782.1	19	500	12	1020	25	1349.6	33
260	3	1110	1702	7.61	7.84	3	505.5	709.5	1088.9	27	1174.5	29	2045	50	1459.2	36	969.6	24	638.2	16	766	19	499.4	12	1008.1	25	1341.4	33
265	3	1109	1669	7.92	8.15	3	505.1	698.9	1082.3	26	1164.7	28	2045	50	1451.3	35	956.5	23	631.2	15	751	18	498.9	12	996.9	24	1333.5	33
270	3	1108	1638	8.23	8.46	3	504.6	688.9	1076.1	26	1155.3	28	2045	50	1443.8	35	944.1	23	624.7	15	737.2	18	498.4	12	986.4	24	1326	32
275	3	1107	1610	8.54	8.77	3	504.1	679.6	1070.1	26	1146.4	28	2045	50	1436.5	35	932.6	23	618.6	15	724.4	18	498	12	976.5	24	1318.8	32
280	3	1106	1583	8.86	9.1	3	503.7	670.9	1064.4	26	1138	28	2045	50	1429.6	35	921.7	23	612.9	15	712.5	17	497.5	12	967.2	24	1311.9	32
285	3	1105	1559	9.19	9.42	3	503.2	662.8	1059.1	26	1130	28	2045	50	1423	35	911.5	22	607.5	15	701.5	17	497.1	12	958.4	23	1305.4	32
290	3	1104	1536	9.52	9.76	3	502.8	655.1	1053.9	26	1122.4	27	2045	50	1416.7	35	901.9	22	602.5	15	691.3	17	496.7	12	950	23	1299.2	32
295	3	1103	1515	9.86	10.1	3	502.3	648	1049.1	26	1115.2	27	2045	50	1410.6	34	892.9	22	597.8	15	681.7	17	496.3	12	942.2	23	1293.2	32
300	3	1102	1495	10.21	10.44	3	501.9	641.2	1044.4	26	1108.4	27	2045	50	1404.8	34	884.4	22	593.4	15	672.9	16	496	12	934.8	23	1287.5	31

SAG-TENSION CALCULATION

Sag and Tension Input Data

Project Name	BINAK-BK15	
Conductor Name		Hyena
Initial Modulus of Elasticity	Kg/mm2	6000
final Modulus of Elasticity	Kg/mm2	7450
Initial Coefficient of linear expansion	1/°C	0.0000188
final Coefficient of linear expansion	1/°C	0.0000188
Cross section Area of Conductor	mm2	126.2
Bare Conductor unit weight	Kg/m	0.45
Diameter of Conductor	mm	14.57
Ultimate strength of Conductor	Kg	4090
Ice Unit Weight	gr/cm3	0.913
Equivalent Creep Temperature	°C	15
EDS Temperature	°C	25

Loading Case		Ice Thick. (mm)	Wind Speed(m/s)	Temp. (°C)	Tension Limit %UTS	K	Unit Weight (Kg/m)
1	LOW WIND	0	28	15	40	0	0.844
2	NESC LIGHT	0	26.5	-1	40	0.07	0.852
3	HIGH WIND	0	45	0	50	0	1.898
4	WIND & ICE	6	22	-5	50	0	1.137
5	WIND & BARE	0	22	-5	40	0	0.63
6	EDS	0	0	25	20	0	0.45
7	MIN. TEMP.	0	0	-5	25	0	0.45
8	MAX. TEMP.	0	0	80	25	0	0.45
9	30% HIGH WIND	0	24	0	50	0	0.691
10	50% HIGH WIND	0	32	0	50	0	1.035

Span (m)	Govern Case	Hot Param(m)	Cold Param(m)	Sag in Hot Param.	Max Sag in Case	Case No	Max Creep Tension	EDS initial Tension	Tension In Case 1	% UTS	Tension In Case 2	% UTS	Tension In Case 3	% UTS	Tension In Case 4	% UTS	Tension In Case 5	% UTS	Tension In Case 6	% UTS	Tension In Case 7	% UTS	Tension In Case 8	% UTS	Tension In Case 9	% UTS	Tension In Case 10	% UTS
100	7	649	2272	1.93	1.93	Creep	291.8	741.8	921.6	23	1107.7	27	1492.2	36	1263.7	31	1079.9	26	621.6	15	1022.5	25	303.8	7	1033.4	25	1166.7	29
105	7	676	2272	2.04	2.04	Creep	304	750.4	936.2	23	1118.7	27	1522.1	37	1279.7	31	1084.5	27	629.4	15	1022.5	25	315.4	8	1040.9	25	1181.9	29
110	7	702	2272	2.15	2.15	Creep	316	758.8	950.7	23	1129.6	28	1551.7	38	1295.6	32	1089.2	27	637	16	1022.5	25	326.8	8	1048.3	26	1197	29
115	7	728	2272	2.27	2.27	Creep	327.8	766.9	964.9	24	1140.5	28	1580.8	39	1311.5	32	1093.9	27	644.5	16	1022.5	25	338	8	1055.8	26	1211.9	30
120	7	754	2272	2.39	2.39	Creep	339.3	774.9	979	24	1151.4	28	1609.5	39	1327.2	32	1098.7	27	651.8	16	1022.5	25	349	9	1063.2	26	1226.7	30
125	7	779	2272	2.51	2.51	Creep	350.7	782.7	992.8	24	1162.2	28	1637.8	40	1342.7	33	1103.4	27	659	16	1022.5	25	359.7	9	1070.6	26	1241.4	30
130	7	804	2272	2.63	2.63	Creep	361.9	790.2	1006.3	25	1172.9	29	1665.6	41	1358.1	33	1108.2	27	666.1	16	1022.5	25	370.2	9	1078	26	1255.9	31
135	7	829	2272	2.75	2.75	Creep	372.9	797.6	1019.7	25	1183.5	29	1693.1	41	1373.4	34	1112.9	27	673.1	16	1022.5	25	380.5	9	1085.3	27	1270.2	31
140	7	853	2272	2.87	2.87	Creep	383.7	804.8	1032.9	25	1194	29	1720.2	42	1388.5	34	1117.7	27	679.9	17	1022.5	25	390.6	10	1092.6	27	1284.4	31
145	7	876	2272	3	3	Creep	394.3	811.8	1045.8	26	1204.4	29	1747	43	1403.4	34	1122.4	27	686.6	17	1022.5	25	400.5	10	1099.8	27	1298.4	32
150	7	899	2272	3.13	3.13	Creep	404.7	818.6	1058.5	26	1214.7	30	1773.3	43	1418.2	35	1127.1	28	693.1	17	1022.5	25	410.2	10	1107	27	1312.2	32
155	7	922	2272	3.26	3.26	Creep	414.9	825.2	1071	26	1224.8	30	1799.3	44	1432.8	35	1131.7	28	699.5	17	1022.5	25	419.7	10	1114	27	1325.8	32
160	7	944	2272	3.39	3.39	Creep	425	831.6	1083.3	26	1234.9	30	1824.9	45	1447.2	35	1136.4	28	705.7	17	1022.5	25	429	10	1121	27	1339.3	33
165	7	966	2272	3.52	3.52	Creep	434.9	837.9	1095.4	27	1244.8	30	1850.1	45	1461.4	36	1141	28	711.9	17	1022.5	25	438.2	11	1127.9	28	1352.5	33
170	7	988	2272	3.66	3.66	3	444.6	844	1107.3	27	1254.6	31	1875	46	1475.4	36	1145.5	28	717.8	18	1022.5	25	447.2	11	1134.8	28	1365.6	33
175	7	1009	2272	3.79	3.83	3	454.2	849.9	1119	27	1264.2	31	1899.6	46	1489.2	36	1150	28	723.7	18	1022.5	25	456	11	1141.5	28	1378.5	34
180	7	1030	2272	3.93	4	3	463.5	855.6	1130.5	28	1273.8	31	1923.8	47	1502.9	37	1154.5	28	729.4	18	1022.5	25	464.7	11	1148.2	28	1391.3	34
185	7	1051	2272	4.07	4.17	3	472.7	861.2	1141.8	28	1283.2	31	1947.7	48	1516.4	37	1158.9	28	735.1	18	1022.5	25	473.2	12	1154.7	28	1403.8	34
190	7	1070	2272	4.22	4.34	3	481.8	866.6	1152.9	28	1292.4	32	1971.3	48	1529.7	37	1163.2	28	740.5	18	1022.5	25	481.5	12	1161.2	28	1416.2	35
195	7	1088	2272	4.37	4.52	3	490.7	871.9	1163.8	28	1301.5	32	1994.6	49	1542.8	38	1167.5	29	745.9	18	1022.5	25	489.7	12	1167.5	29	1428.3	35
200	7	1106	2272	4.52	4.7	3	499.4	877	1174.5	29	1310.5	32	2017.6	49	1555.7	38	1171.8	29	751.1	18	1022.5	25	497.7	12	1173.8	29	1440.3	35
205	7	1123	2272	4.68	4.89	3	508	881.9	1185	29	1319.4	32	2040.2	50	1568.5	38	1176	29	756.3	18	1022.5	25	505.6	12	1180	29	1452.2	36
206.1	3	1127	2272	4.71	4.93	3	509.8	883	1187.3	29	1321.2	32	2045	50	1571.2	38	1176.8	29	757.3	19	1022.5	25	507.2	12	1181.3	29	1454.7	36
210	3	1125	2216	4.9	5.12	3	509.6	866.1	1178.1	29	1307.6	32	2045	50	1561.2	38	1157	28	745	18	997	24	506.5	12	1164.8	28	1444.4	35
215	3	1123	2147	5.14	5.36	3	509.3	845.6	1166.9	29	1291.1	32	2045	50	1548.9	38	1133	28	730.4	18	966.1	24	505.6	12	1144.8	28	1431.8	35
220	3	1122	2082	5.39	5.62	3	509	826.4	1156.3	28	1275.3	31	2045	50	1537.1	38	1110.2	27	716.8	18	937.1	23	504.7	12	1125.9	28	1419.8	35
225	3	1120	2022	5.65	5.87	3	508.6	808.2	1146.3	28	1260.3	31	2045	50	1525.8	37	1088.7	27	704.3	17	909.9	22	503.9	12	1108	27	1408.3	34
230	3	1118	1965	5.91	6.14	3	508.2	791.2	1136.7	28	1246.1	30	2045	50	1515	37	1068.4	26	692.6	17	884.5	22	503.2	12	1091.1	27	1397.4	34
235	3	1117	1913	6.18	6.41	3	507.8	775.2	1127.7	28	1232.5	30	2045	50	1504.6	37	1049.2	26	681.8	17	860.8	21	502.4	12	1075.1	26	1386.9	34
240	3	1115	1864	6.46	6.68	3	507.4	760.2	1119.1	27	1219.7	30	2045	50	1494.7	37	1031.2	25	671.7	16	838.8	21	501.8	12	1060.1	26	1376.9	34
245	3	1114	1819	6.74	6.96	3	506.9	746.2	1110.9	27	1207.5	30	2045	50	1485.2	36	1014.3	25	662.4	16	818.4	20	501.1	12	1045.9	26	1367.4	33

Span (m)	Govern Case	Hot Param(m)	Cold Param(m)	Sag in Hot Param.	Max Sag in Case	Case No	Max Creep Tension	EDS initial Tension	Tension In Case 1	% UTS	Tension In Case 2	% UTS	Tension In Case 3	% UTS	Tension In Case 4	% UTS	Tension In Case 5	% UTS	Tension In Case 6	% UTS	Tension In Case 7	% UTS	Tension In Case 8	% UTS	Tension In Case 9	% UTS	Tension In Case 10	% UTS
250	3	1112	1777	7.02	7.25	3	506.5	733.2	1103.2	27	1195.9	29	2045	50	1476.2	36	998.5	24	653.8	16	799.6	20	500.5	12	1032.5	25	1358.3	33
255	3	1111	1738	7.32	7.54	3	506	720.9	1095.9	27	1184.9	29	2045	50	1467.5	36	983.6	24	645.7	16	782.1	19	500	12	1020	25	1349.6	33
260	3	1110	1702	7.61	7.84	3	505.5	709.5	1088.9	27	1174.5	29	2045	50	1459.2	36	969.6	24	638.2	16	766	19	499.4	12	1008.1	25	1341.4	33
265	3	1109	1669	7.92	8.15	3	505.1	698.9	1082.3	26	1164.7	28	2045	50	1451.3	35	956.5	23	631.2	15	751	18	498.9	12	996.9	24	1333.5	33
270	3	1108	1638	8.23	8.46	3	504.6	688.9	1076.1	26	1155.3	28	2045	50	1443.8	35	944.1	23	624.7	15	737.2	18	498.4	12	986.4	24	1326	32
275	3	1107	1610	8.54	8.77	3	504.1	679.6	1070.1	26	1146.4	28	2045	50	1436.5	35	932.6	23	618.6	15	724.4	18	498	12	976.5	24	1318.8	32
280	3	1106	1583	8.86	9.1	3	503.7	670.9	1064.4	26	1138	28	2045	50	1429.6	35	921.7	23	612.9	15	712.5	17	497.5	12	967.2	24	1311.9	32
285	3	1105	1559	9.19	9.42	3	503.2	662.8	1059.1	26	1130	28	2045	50	1423	35	911.5	22	607.5	15	701.5	17	497.1	12	958.4	23	1305.4	32
290	3	1104	1536	9.52	9.76	3	502.8	655.1	1053.9	26	1122.4	27	2045	50	1416.7	35	901.9	22	602.5	15	691.3	17	496.7	12	950	23	1299.2	32
295	3	1103	1515	9.86	10.1	3	502.3	648	1049.1	26	1115.2	27	2045	50	1410.6	34	892.9	22	597.8	15	681.7	17	496.3	12	942.2	23	1293.2	32
300	3	1102	1495	10.21	10.44	3	501.9	641.2	1044.4	26	1108.4	27	2045	50	1404.8	34	884.4	22	593.4	15	672.9	16	496	12	934.8	23	1287.5	31

SAG-TENSION CALCULATION

Sag and Tension Input Data

Project Name	BINAK-W007S	
Conductor Name		Hyena
Initial Modulus of Elasticity	Kg/mm2	6000
final Modulus of Elasticity	Kg/mm2	7450
Initial Coefficient of linear expansion	1/°C	0.0000188
final Coefficient of linear expansion	1/°C	0.0000188
Cross section Area of Conductor	mm2	126.2
Bare Conductor unit weight	Kg/m	0.45
Diameter of Conductor	mm	14.57
Ultimate strength of Conductor	Kg	4090
Ice Unit Weight	gr/cm3	0.913
Equivalent Creep Temperature	°C	15
EDS Temperature	°C	25

Loading Case		Ice Thick. (mm)	Wind Speed(m/s)	Temp. (°C)	Tension Limit %UTS	K	Unit Weight (Kg/m)
1	LOW WIND	0	28	15	40	0	0.844
2	NESC LIGHT	0	26.5	-1	40	0.07	0.852
3	HIGH WIND	0	45	0	50	0	1.898
4	WIND & ICE	6	22	-5	50	0	1.137
5	WIND & BARE	0	22	-5	40	0	0.63
6	EDS	0	0	25	20	0	0.45
7	MIN. TEMP.	0	0	-5	25	0	0.45
8	MAX. TEMP.	0	0	80	25	0	0.45
9	30% HIGH WIND	0	24	0	50	0	0.691
10	50% HIGH WIND	0	32	0	50	0	1.035

Span (m)	Govern Case	Hot Param(m)	Cold Param(m)	Sag in Hot Param.	Max Sag in Case	Case No	Max Creep Tension	EDS initial Tension	Tension In Case 1	% UTS	Tension In Case 2	% UTS	Tension In Case 3	% UTS	Tension In Case 4	% UTS	Tension In Case 5	% UTS	Tension In Case 6	% UTS	Tension In Case 7	% UTS	Tension In Case 8	% UTS	Tension In Case 9	% UTS	Tension In Case 10	% UTS
100	7	649	2272	1.93	1.93	Creep	291.8	741.8	921.6	23	1107.7	27	1492.2	36	1263.7	31	1079.9	26	621.6	15	1022.5	25	303.8	7	1033.4	25	1166.7	29
105	7	676	2272	2.04	2.04	Creep	304	750.4	936.2	23	1118.7	27	1522.1	37	1279.7	31	1084.5	27	629.4	15	1022.5	25	315.4	8	1040.9	25	1181.9	29
110	7	702	2272	2.15	2.15	Creep	316	758.8	950.7	23	1129.6	28	1551.7	38	1295.6	32	1089.2	27	637	16	1022.5	25	326.8	8	1048.3	26	1197	29
115	7	728	2272	2.27	2.27	Creep	327.8	766.9	964.9	24	1140.5	28	1580.8	39	1311.5	32	1093.9	27	644.5	16	1022.5	25	338	8	1055.8	26	1211.9	30
120	7	754	2272	2.39	2.39	Creep	339.3	774.9	979	24	1151.4	28	1609.5	39	1327.2	32	1098.7	27	651.8	16	1022.5	25	349	9	1063.2	26	1226.7	30
125	7	779	2272	2.51	2.51	Creep	350.7	782.7	992.8	24	1162.2	28	1637.8	40	1342.7	33	1103.4	27	659	16	1022.5	25	359.7	9	1070.6	26	1241.4	30
130	7	804	2272	2.63	2.63	Creep	361.9	790.2	1006.3	25	1172.9	29	1665.6	41	1358.1	33	1108.2	27	666.1	16	1022.5	25	370.2	9	1078	26	1255.9	31
135	7	829	2272	2.75	2.75	Creep	372.9	797.6	1019.7	25	1183.5	29	1693.1	41	1373.4	34	1112.9	27	673.1	16	1022.5	25	380.5	9	1085.3	27	1270.2	31
140	7	853	2272	2.87	2.87	Creep	383.7	804.8	1032.9	25	1194	29	1720.2	42	1388.5	34	1117.7	27	679.9	17	1022.5	25	390.6	10	1092.6	27	1284.4	31
145	7	876	2272	3	3	Creep	394.3	811.8	1045.8	26	1204.4	29	1747	43	1403.4	34	1122.4	27	686.6	17	1022.5	25	400.5	10	1099.8	27	1298.4	32
150	7	899	2272	3.13	3.13	Creep	404.7	818.6	1058.5	26	1214.7	30	1773.3	43	1418.2	35	1127.1	28	693.1	17	1022.5	25	410.2	10	1107	27	1312.2	32
155	7	922	2272	3.26	3.26	Creep	414.9	825.2	1071	26	1224.8	30	1799.3	44	1432.8	35	1131.7	28	699.5	17	1022.5	25	419.7	10	1114	27	1325.8	32
160	7	944	2272	3.39	3.39	Creep	425	831.6	1083.3	26	1234.9	30	1824.9	45	1447.2	35	1136.4	28	705.7	17	1022.5	25	429	10	1121	27	1339.3	33
165	7	966	2272	3.52	3.52	Creep	434.9	837.9	1095.4	27	1244.8	30	1850.1	45	1461.4	36	1141	28	711.9	17	1022.5	25	438.2	11	1127.9	28	1352.5	33
170	7	988	2272	3.66	3.66	3	444.6	844	1107.3	27	1254.6	31	1875	46	1475.4	36	1145.5	28	717.8	18	1022.5	25	447.2	11	1134.8	28	1365.6	33
175	7	1009	2272	3.79	3.83	3	454.2	849.9	1119	27	1264.2	31	1899.6	46	1489.2	36	1150	28	723.7	18	1022.5	25	456	11	1141.5	28	1378.5	34
180	7	1030	2272	3.93	4	3	463.5	855.6	1130.5	28	1273.8	31	1923.8	47	1502.9	37	1154.5	28	729.4	18	1022.5	25	464.7	11	1148.2	28	1391.3	34
185	7	1051	2272	4.07	4.17	3	472.7	861.2	1141.8	28	1283.2	31	1947.7	48	1516.4	37	1158.9	28	735.1	18	1022.5	25	473.2	12	1154.7	28	1403.8	34
190	7	1070	2272	4.22	4.34	3	481.8	866.6	1152.9	28	1292.4	32	1971.3	48	1529.7	37	1163.2	28	740.5	18	1022.5	25	481.5	12	1161.2	28	1416.2	35
195	7	1088	2272	4.37	4.52	3	490.7	871.9	1163.8	28	1301.5	32	1994.6	49	1542.8	38	1167.5	29	745.9	18	1022.5	25	489.7	12	1167.5	29	1428.3	35
200	7	1106	2272	4.52	4.7	3	499.4	877	1174.5	29	1310.5	32	2017.6	49	1555.7	38	1171.8	29	751.1	18	1022.5	25	497.7	12	1173.8	29	1440.3	35
205	7	1123	2272	4.68	4.89	3	508	881.9	1185	29	1319.4	32	2040.2	50	1568.5	38	1176	29	756.3	18	1022.5	25	505.6	12	1180	29	1452.2	36
206.1	3	1127	2272	4.71	4.93	3	509.8	883	1187.3	29	1321.2	32	2045	50	1571.2	38	1176.8	29	757.3	19	1022.5	25	507.2	12	1181.3	29	1454.7	36
210	3	1125	2216	4.9	5.12	3	509.6	866.1	1178.1	29	1307.6	32	2045	50	1561.2	38	1157	28	745	18	997	24	506.5	12	1164.8	28	1444.4	35
215	3	1123	2147	5.14	5.36	3	509.3	845.6	1166.9	29	1291.1	32	2045	50	1548.9	38	1133	28	730.4	18	966.1	24	505.6	12	1144.8	28	1431.8	35
220	3	1122	2082	5.39	5.62	3	509	826.4	1156.3	28	1275.3	31	2045	50	1537.1	38	1110.2	27	716.8	18	937.1	23	504.7	12	1125.9	28	1419.8	35
225	3	1120	2022	5.65	5.87	3	508.6	808.2	1146.3	28	1260.3	31	2045	50	1525.8	37	1088.7	27	704.3	17	909.9	22	503.9	12	1108	27	1408.3	34
230	3	1118	1965	5.91	6.14	3	508.2	791.2	1136.7	28	1246.1	30	2045	50	1515	37	1068.4	26	692.6	17	884.5	22	503.2	12	1091.1	27	1397.4	34
235	3	1117	1913	6.18	6.41	3	507.8	775.2	1127.7	28	1232.5	30	2045	50	1504.6	37	1049.2	26	681.8	17	860.8	21	502.4	12	1075.1	26	1386.9	34
240	3	1115	1864	6.46	6.68	3	507.4	760.2	1119.1	27	1219.7	30	2045	50	1494.7	37	1031.2	25	671.7	16	838.8	21	501.8	12	1060.1	26	1376.9	34
245	3	1114	1819	6.74	6.96	3	506.9	746.2	1110.9	27	1207.5	30	2045	50	1485.2	36	1014.3	25	662.4	16	818.4	20	501.1	12	1045.9	26	1367.4	33

Span (m)	Govern Case	Hot Param(m)	Cold Param(m)	Sag in Hot Param.	Max Sag in Case	Case No	Max Creep Tension	EDS initial Tension	Tension In Case 1	% UTS	Tension In Case 2	% UTS	Tension In Case 3	% UTS	Tension In Case 4	% UTS	Tension In Case 5	% UTS	Tension In Case 6	% UTS	Tension In Case 7	% UTS	Tension In Case 8	% UTS	Tension In Case 9	% UTS	Tension In Case 10	% UTS
250	3	1112	1777	7.02	7.25	3	506.5	733.2	1103.2	27	1195.9	29	2045	50	1476.2	36	998.5	24	653.8	16	799.6	20	500.5	12	1032.5	25	1358.3	33
255	3	1111	1738	7.32	7.54	3	506	720.9	1095.9	27	1184.9	29	2045	50	1467.5	36	983.6	24	645.7	16	782.1	19	500	12	1020	25	1349.6	33
260	3	1110	1702	7.61	7.84	3	505.5	709.5	1088.9	27	1174.5	29	2045	50	1459.2	36	969.6	24	638.2	16	766	19	499.4	12	1008.1	25	1341.4	33
265	3	1109	1669	7.92	8.15	3	505.1	698.9	1082.3	26	1164.7	28	2045	50	1451.3	35	956.5	23	631.2	15	751	18	498.9	12	996.9	24	1333.5	33
270	3	1108	1638	8.23	8.46	3	504.6	688.9	1076.1	26	1155.3	28	2045	50	1443.8	35	944.1	23	624.7	15	737.2	18	498.4	12	986.4	24	1326	32
275	3	1107	1610	8.54	8.77	3	504.1	679.6	1070.1	26	1146.4	28	2045	50	1436.5	35	932.6	23	618.6	15	724.4	18	498	12	976.5	24	1318.8	32
280	3	1106	1583	8.86	9.1	3	503.7	670.9	1064.4	26	1138	28	2045	50	1429.6	35	921.7	23	612.9	15	712.5	17	497.5	12	967.2	24	1311.9	32
285	3	1105	1559	9.19	9.42	3	503.2	662.8	1059.1	26	1130	28	2045	50	1423	35	911.5	22	607.5	15	701.5	17	497.1	12	958.4	23	1305.4	32
290	3	1104	1536	9.52	9.76	3	502.8	655.1	1053.9	26	1122.4	27	2045	50	1416.7	35	901.9	22	602.5	15	691.3	17	496.7	12	950	23	1299.2	32
295	3	1103	1515	9.86	10.1	3	502.3	648	1049.1	26	1115.2	27	2045	50	1410.6	34	892.9	22	597.8	15	681.7	17	496.3	12	942.2	23	1293.2	32
300	3	1102	1495	10.21	10.44	3	501.9	641.2	1044.4	26	1108.4	27	2045	50	1404.8	34	884.4	22	593.4	15	672.9	16	496	12	934.8	23	1287.5	31

SAG-TENSION CALCULATION

Sag and Tension Input Data

Project Name	BINAK-W046S	
Conductor Name		Hyena
Initial Modulus of Elasticity	Kg/mm2	6000
final Modulus of Elasticity	Kg/mm2	7450
Initial Coefficient of linear expansion	1/°C	0.0000188
final Coefficient of linear expansion	1/°C	0.0000188
Cross section Area of Conductor	mm2	126.2
Bare Conductor unit weight	Kg/m	0.45
Diameter of Conductor	mm	14.57
Ultimate strength of Conductor	Kg	4090
Ice Unit Weight	gr/cm3	0.913
Equivalent Creep Temperature	°C	15
EDS Temperature	°C	25

Loading Case		Ice Thick. (mm)	Wind Speed(m/s)	Temp. (°C)	Tension Limit %UTS	K	Unit Weight (Kg/m)
1	LOW WIND	0	28	15	40	0	0.844
2	NESC LIGHT	0	26.5	-1	40	0.07	0.852
3	HIGH WIND	0	45	0	50	0	1.898
4	WIND & ICE	6	22	-5	50	0	1.137
5	WIND & BARE	0	22	-5	40	0	0.63
6	EDS	0	0	25	20	0	0.45
7	MIN. TEMP.	0	0	-5	25	0	0.45
8	MAX. TEMP.	0	0	80	25	0	0.45
9	30% HIGH WIND	0	24	0	50	0	0.691
10	50% HIGH WIND	0	32	0	50	0	1.035

Span (m)	Govern Case	Hot Param(m)	Cold Param(m)	Sag in Hot Param.	Max Sag in Case	Case No	Max Creep Tension	EDS initial Tension	Tension In Case 1	% UTS	Tension In Case 2	% UTS	Tension In Case 3	% UTS	Tension In Case 4	% UTS	Tension In Case 5	% UTS	Tension In Case 6	% UTS	Tension In Case 7	% UTS	Tension In Case 8	% UTS	Tension In Case 9	% UTS	Tension In Case 10	% UTS
100	7	649	2272	1.93	1.93	Creep	291.8	741.8	921.6	23	1107.7	27	1492.2	36	1263.7	31	1079.9	26	621.6	15	1022.5	25	303.8	7	1033.4	25	1166.7	29
105	7	676	2272	2.04	2.04	Creep	304	750.4	936.2	23	1118.7	27	1522.1	37	1279.7	31	1084.5	27	629.4	15	1022.5	25	315.4	8	1040.9	25	1181.9	29
110	7	702	2272	2.15	2.15	Creep	316	758.8	950.7	23	1129.6	28	1551.7	38	1295.6	32	1089.2	27	637	16	1022.5	25	326.8	8	1048.3	26	1197	29
115	7	728	2272	2.27	2.27	Creep	327.8	766.9	964.9	24	1140.5	28	1580.8	39	1311.5	32	1093.9	27	644.5	16	1022.5	25	338	8	1055.8	26	1211.9	30
120	7	754	2272	2.39	2.39	Creep	339.3	774.9	979	24	1151.4	28	1609.5	39	1327.2	32	1098.7	27	651.8	16	1022.5	25	349	9	1063.2	26	1226.7	30
125	7	779	2272	2.51	2.51	Creep	350.7	782.7	992.8	24	1162.2	28	1637.8	40	1342.7	33	1103.4	27	659	16	1022.5	25	359.7	9	1070.6	26	1241.4	30
130	7	804	2272	2.63	2.63	Creep	361.9	790.2	1006.3	25	1172.9	29	1665.6	41	1358.1	33	1108.2	27	666.1	16	1022.5	25	370.2	9	1078	26	1255.9	31
135	7	829	2272	2.75	2.75	Creep	372.9	797.6	1019.7	25	1183.5	29	1693.1	41	1373.4	34	1112.9	27	673.1	16	1022.5	25	380.5	9	1085.3	27	1270.2	31
140	7	853	2272	2.87	2.87	Creep	383.7	804.8	1032.9	25	1194	29	1720.2	42	1388.5	34	1117.7	27	679.9	17	1022.5	25	390.6	10	1092.6	27	1284.4	31
145	7	876	2272	3	3	Creep	394.3	811.8	1045.8	26	1204.4	29	1747	43	1403.4	34	1122.4	27	686.6	17	1022.5	25	400.5	10	1099.8	27	1298.4	32
150	7	899	2272	3.13	3.13	Creep	404.7	818.6	1058.5	26	1214.7	30	1773.3	43	1418.2	35	1127.1	28	693.1	17	1022.5	25	410.2	10	1107	27	1312.2	32
155	7	922	2272	3.26	3.26	Creep	414.9	825.2	1071	26	1224.8	30	1799.3	44	1432.8	35	1131.7	28	699.5	17	1022.5	25	419.7	10	1114	27	1325.8	32
160	7	944	2272	3.39	3.39	Creep	425	831.6	1083.3	26	1234.9	30	1824.9	45	1447.2	35	1136.4	28	705.7	17	1022.5	25	429	10	1121	27	1339.3	33
165	7	966	2272	3.52	3.52	Creep	434.9	837.9	1095.4	27	1244.8	30	1850.1	45	1461.4	36	1141	28	711.9	17	1022.5	25	438.2	11	1127.9	28	1352.5	33
170	7	988	2272	3.66	3.66	3	444.6	844	1107.3	27	1254.6	31	1875	46	1475.4	36	1145.5	28	717.8	18	1022.5	25	447.2	11	1134.8	28	1365.6	33
175	7	1009	2272	3.79	3.83	3	454.2	849.9	1119	27	1264.2	31	1899.6	46	1489.2	36	1150	28	723.7	18	1022.5	25	456	11	1141.5	28	1378.5	34
180	7	1030	2272	3.93	4	3	463.5	855.6	1130.5	28	1273.8	31	1923.8	47	1502.9	37	1154.5	28	729.4	18	1022.5	25	464.7	11	1148.2	28	1391.3	34
185	7	1051	2272	4.07	4.17	3	472.7	861.2	1141.8	28	1283.2	31	1947.7	48	1516.4	37	1158.9	28	735.1	18	1022.5	25	473.2	12	1154.7	28	1403.8	34
190	7	1070	2272	4.22	4.34	3	481.8	866.6	1152.9	28	1292.4	32	1971.3	48	1529.7	37	1163.2	28	740.5	18	1022.5	25	481.5	12	1161.2	28	1416.2	35
195	7	1088	2272	4.37	4.52	3	490.7	871.9	1163.8	28	1301.5	32	1994.6	49	1542.8	38	1167.5	29	745.9	18	1022.5	25	489.7	12	1167.5	29	1428.3	35
200	7	1106	2272	4.52	4.7	3	499.4	877	1174.5	29	1310.5	32	2017.6	49	1555.7	38	1171.8	29	751.1	18	1022.5	25	497.7	12	1173.8	29	1440.3	35
205	7	1123	2272	4.68	4.89	3	508	881.9	1185	29	1319.4	32	2040.2	50	1568.5	38	1176	29	756.3	18	1022.5	25	505.6	12	1180	29	1452.2	36
206.1	3	1127	2272	4.71	4.93	3	509.8	883	1187.3	29	1321.2	32	2045	50	1571.2	38	1176.8	29	757.3	19	1022.5	25	507.2	12	1181.3	29	1454.7	36
210	3	1125	2216	4.9	5.12	3	509.6	866.1	1178.1	29	1307.6	32	2045	50	1561.2	38	1157	28	745	18	997	24	506.5	12	1164.8	28	1444.4	35
215	3	1123	2147	5.14	5.36	3	509.3	845.6	1166.9	29	1291.1	32	2045	50	1548.9	38	1133	28	730.4	18	966.1	24	505.6	12	1144.8	28	1431.8	35
220	3	1122	2082	5.39	5.62	3	509	826.4	1156.3	28	1275.3	31	2045	50	1537.1	38	1110.2	27	716.8	18	937.1	23	504.7	12	1125.9	28	1419.8	35
225	3	1120	2022	5.65	5.87	3	508.6	808.2	1146.3	28	1260.3	31	2045	50	1525.8	37	1088.7	27	704.3	17	909.9	22	503.9	12	1108	27	1408.3	34
230	3	1118	1965	5.91	6.14	3	508.2	791.2	1136.7	28	1246.1	30	2045	50	1515	37	1068.4	26	692.6	17	884.5	22	503.2	12	1091.1	27	1397.4	34
235	3	1117	1913	6.18	6.41	3	507.8	775.2	1127.7	28	1232.5	30	2045	50	1504.6	37	1049.2	26	681.8	17	860.8	21	502.4	12	1075.1	26	1386.9	34
240	3	1115	1864	6.46	6.68	3	507.4	760.2	1119.1	27	1219.7	30	2045	50	1494.7	37	1031.2	25	671.7	16	838.8	21	501.8	12	1060.1	26	1376.9	34
245	3	1114	1819	6.74	6.96	3	506.9	746.2	1110.9	27	1207.5	30	2045	50	1485.2	36	1014.3	25	662.4	16	818.4	20	501.1	12	1045.9	26	1367.4	33

Span (m)	Govern Case	Hot Param(m)	Cold Param(m)	Sag in Hot Param.	Max Sag in Case	Case No	Max Creep Tension	EDS initial Tension	Tension In Case 1	% UTS	Tension In Case 2	% UTS	Tension In Case 3	% UTS	Tension In Case 4	% UTS	Tension In Case 5	% UTS	Tension In Case 6	% UTS	Tension In Case 7	% UTS	Tension In Case 8	% UTS	Tension In Case 9	% UTS	Tension In Case 10	% UTS
250	3	1112	1777	7.02	7.25	3	506.5	733.2	1103.2	27	1195.9	29	2045	50	1476.2	36	998.5	24	653.8	16	799.6	20	500.5	12	1032.5	25	1358.3	33
255	3	1111	1738	7.32	7.54	3	506	720.9	1095.9	27	1184.9	29	2045	50	1467.5	36	983.6	24	645.7	16	782.1	19	500	12	1020	25	1349.6	33
260	3	1110	1702	7.61	7.84	3	505.5	709.5	1088.9	27	1174.5	29	2045	50	1459.2	36	969.6	24	638.2	16	766	19	499.4	12	1008.1	25	1341.4	33
265	3	1109	1669	7.92	8.15	3	505.1	698.9	1082.3	26	1164.7	28	2045	50	1451.3	35	956.5	23	631.2	15	751	18	498.9	12	996.9	24	1333.5	33
270	3	1108	1638	8.23	8.46	3	504.6	688.9	1076.1	26	1155.3	28	2045	50	1443.8	35	944.1	23	624.7	15	737.2	18	498.4	12	986.4	24	1326	32
275	3	1107	1610	8.54	8.77	3	504.1	679.6	1070.1	26	1146.4	28	2045	50	1436.5	35	932.6	23	618.6	15	724.4	18	498	12	976.5	24	1318.8	32
280	3	1106	1583	8.86	9.1	3	503.7	670.9	1064.4	26	1138	28	2045	50	1429.6	35	921.7	23	612.9	15	712.5	17	497.5	12	967.2	24	1311.9	32
285	3	1105	1559	9.19	9.42	3	503.2	662.8	1059.1	26	1130	28	2045	50	1423	35	911.5	22	607.5	15	701.5	17	497.1	12	958.4	23	1305.4	32
290	3	1104	1536	9.52	9.76	3	502.8	655.1	1053.9	26	1122.4	27	2045	50	1416.7	35	901.9	22	602.5	15	691.3	17	496.7	12	950	23	1299.2	32
295	3	1103	1515	9.86	10.1	3	502.3	648	1049.1	26	1115.2	27	2045	50	1410.6	34	892.9	22	597.8	15	681.7	17	496.3	12	942.2	23	1293.2	32
300	3	1102	1495	10.21	10.44	3	501.9	641.2	1044.4	26	1108.4	27	2045	50	1404.8	34	884.4	22	593.4	15	672.9	16	496	12	934.8	23	1287.5	31