PLS-CADD Version 7.01T 3:34:15 PM Friday, November 12, 2004
Power Line Systems, Inc. - Missouri
Project Name: 'c:\projects\optimization\projects\optimization6point9.DON'
Line Title: 'Wood Pole Optimization'
Criteria notes:
  NESC Medium per Rule 250B, Page 161
  Extreme Wind Loading per Rule 250C, Page 161, Coefficients and Gust Response Factors per Equations in Tables 250-2, 250-3
  90 MPH Basic Wind Speed, 3 second Gust Wind Speed, Figure 250-2 Beginning on Page 166
  Grade B Construction "Method A" per Table 253-1, Page 173 and Table 261-1A, Page 182
  Tension Limits per Rule 261H1, Page 179
  Insulator Strength Reduction per Rule 277, Page 188 Should be applied to Insulator Strengths when Modeling Insulators
  2002 NESC C2-2002 Criteria File for PLS-CADD Created December 21, 2001
  POWER LINE SYSTEMS, INC. IS NOT RESPONSIBLE FOR THE ACCURACY OF THE CONTENT HEREIN. THIS FILE IS BEING PROVIDED
  AS A REFERENCE. CRITERIA SHOULD BE CHECKED AND MODIFIED AS NECESSARY BY A QUALIFIED ENGINEER FAMILIAR WITH THE
  NESC REQUIREMENTS OF THE AREA WHICH THE PROJECT IS IN AND ITS APPLICATION.
  Project in SPCS Oregon North NAD83 Feet
  UTM NAD83 Feet Coordinates;
  P.I.1 - 1753909.05, 16471881.83
  P.I.11 - 1735576.53, 16446118.50

Optimization parameters:
  Create report only, do not modify line
  Optimize all structures in range
  Use weight as metric for comparing pole shafts
  Switch all pole shafts to Steel
  Concrete pole library to use for optimization: Default stored with model
  Steel pole library to use for optimization: c:\projects\optimization\structures\components\components.spp
  Wood pole library to use for optimization: Default stored with model
  Wood material library to use for optimization: Default stored with model
  Part file used for calculating costs: c:\projects\optimization\parts\optimization.prt

Notes:
  Costs are determined by looking up the stock number for a pole property in the parts list.
  Costs and usages are given for the pole shaft, not the entire structure.
  A cost of 0.00 will be printed if the pole property does not have a stock number.
  Weight will be used to compare pole shafts whenever the cost is 0.00.
  In multi-pole structures the cost and weight printed are per pole.
  Can only optimize frames where all poles have identical class and height.
  Only poles with the same length are considered if using the default material (structure height does not change).
  If switching materials and no matching height is found with the new material, the next tallest height will be used.

Total initial cost of poles: 67097.57
Total final cost of poles: 114413.00
Total initial weight of poles: 285.547 (kips)
Total final weight of poles: 114.419 (kips)

Automatic Pole Shaft Selection Results:

Str. No.	Structure Name	Pole Label	Initial Property	Initial Cost	Initial Weight (kips)	Initial Usage %	Final Property	Final Cost	Final Weight (kips)	Final Usage %	Optimize Outcome
2	deadend-1-090	Pole	SP-1-90	2638.12	5.639	152.38	LD02-090	2679.00	2.679	93.39	Switched Material
3	tangent-h2-085	Pole	SP-H2-85	1462.60	6.587	94.35	LD03-085	2650.00	2.650	85.04	Switched Material
4	tangent-h2-085	Pole	SP-H2-85	1462.60	6.587	107.12	LD03-085	2650.00	2.650	92.04	Switched Material
5	tangent-h2-080	Pole	SP-H2-80	1302.90	5.996	101.78	LD03-080	2442.00	2.442	89.31	Switched Material
6	tangent-h2-075	Pole	SP-H2-75	1112.40	5.504	117.98	LD03-075	2241.00	2.241	99.40	Switched Material
7	tangent-h2-075	Pole	SP-H2-75	1112.40	5.504	92.03	LD03-075	2241.00	2.241	85.72	Switched Material
8	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	78.70	LD01-075	1994.00	1.993	92.25	Switched Material
9	deadend-1-080	Pole	SP-1-80	1746.31	4.778	38.62	DC04-080	1649.00	1.649	33.93	Switched Material
10	tangent-h1-085	Pole	SP-H1-85	1287.50	5.911	87.79	LD01-085	2335.00	2.335	94.79	Switched Material
11	runnning_angle-h2-105	Pole	SP-H2-105	2000.00	9.158	16.22	LD01-105	3096.00	3.097	16.12	Switched Material
12	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	78.67	LD01-075	1994.00	1.993	93.38	Switched Material
13	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	100.12	LD02-075	2108.00	2.109	90.07	Switched Material
14	tangent-h2-085	Pole	SP-H2-85	1462.60	6.587	104.38	LD03-085	2650.00	2.650	87.63	Switched Material
15	tangent-h2-085	Pole	SP-H2-85	1462.60	6.587	110.41	LD03-085	2650.00	2.650	90.86	Switched Material
16	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	101.21	LD02-075	2108.00	2.109	96.78	Switched Material
17	tangent-h2-085	Pole	SP-H2-85	1462.60	6.587	117.01	LD03-085	2650.00	2.650	92.67	Switched Material
18	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	88.25	LD02-075	2108.00	2.109	89.17	Switched Material
19	deadend-1-100	Pole	SP-1-100	2937.57	6.658	27.93	LD01-100	2903.00	2.903	19.29	Switched Material
20	runnning_angle-h2-105	Pole	SP-H2-105	2000.00	9.158	36.35	LD01-105	3096.00	3.097	36.40	Switched Material
22	tangent-h1-070	Pole	SP-H1-70	894.91	4.371	91.03	LD01-070	1830.00	1.830	95.72	Switched Material
23	tangent-h1-070	Pole	SP-H1-70	894.91	4.371	61.09	DC03-070	1522.00	1.522	93.95	Switched Material
24	tangent-2-065	Pole	SP-2-65	799.40	3.026	70.58	DC04-065	1255.00	1.255	88.14	Switched Material
25	tangent-h1-070	Pole	SP-H1-70	894.91	4.371	95.78	LD02-070	1931.00	1.931	89.92	Switched Material
27	tangent-h2-100	Pole	SP-H2-100	1950.00	8.448	84.04	LD02-100	3111.00	3.111	95.85	Switched Material
28	tangent-h2-095	Pole	SP-H2-95	1797.35	7.861	57.09	LD01-095	2713.00	2.713	83.56	Switched Material
29	tangent-h1-065	Pole	SP-H1-65	818.85	3.912	66.13	DC02-065	1517.00	1.517	90.12	Switched Material
30	tangent-h2-080	Pole	SP-H2-80	1302.90	5.996	87.90	LD02-080	2292.00	2.292	89.12	Switched Material
31	tangent-h2-080	Pole	SP-H2-80	1302.90	5.996	105.05	LD03-080	2442.00	2.442	86.80	Switched Material
32	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	111.13	LD02-075	2108.00	2.109	97.95	Switched Material
33	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	86.12	LD02-075	2108.00	2.109	85.93	Switched Material
34	runnning_angle-h2-100	Pole	SP-H2-100	1950.00	8.448	22.28	LD01-100	2903.00	2.903	24.85	Switched Material
35	tangent-h2-065	Pole	SP-H2-65	952.75	4.398	106.65	LD03-065	1860.00	1.860	99.96	Switched Material
36	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	91.68	LD01-075	1994.00	1.993	93.89	Switched Material
37	tangent-h2-080	Pole	SP-H2-80	1302.90	5.996	102.10	LD03-080	2442.00	2.442	86.06	Switched Material
38	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	101.71	LD02-075	2108.00	2.109	94.62	Switched Material
39	tangent-h2-080	Pole	SP-H2-80	1302.90	5.996	102.37	LD03-080	2442.00	2.442	86.86	Switched Material
40	tangent-h2-080	Pole	SP-H2-80	1302.90	5.996	104.89	LD03-080	2442.00	2.442	92.78	Switched Material
41	runnning_angle-h2-105	Pole	SP-H2-105	2000.00	9.158	16.02	LD01-105	3096.00	3.097	16.02	Switched Material
42	tangent-h2-075	Pole	SP-H2-75	1112.40	5.504	95.30	LD03-075	2241.00	2.241	84.77	Switched Material
43	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	102.52	LD02-075	2108.00	2.109	94.41	Switched Material
44	tangent-h2-075	Pole	SP-H2-75	1112.40	5.504	102.56	LD03-075	2241.00	2.241	95.12	Switched Material
45	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	112.17	LD02-075	2108.00	2.109	99.00	Switched Material
46	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	111.50	LD02-075	2108.00	2.109	96.22	Switched Material
47	tangent-h2-080	Pole	SP-H2-80	1302.90	5.996	117.87	LD03-080	2442.00	2.442	96.47	Switched Material

48	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	106.37	LD02-075	2108.00	2.109	95.95	Switched Material
49	tangent-h1-070	Pole	SP-H1-70	894.91	4.371	85.46	LD01-070	1830.00	1.830	97.24	Switched Material
50	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	104.69	LD02-075	2108.00	2.109	91.57	Switched Material
51	tangent-h1-075	Pole	SP-H1-75	957.90	4.856	96.60	LD02-075	2108.00	2.109	89.99	Switched Material
52	light_angle-1-095	Pole	SP-1-95	2750.56	6.096	74.44	LD01-095	2713.00	2.713	80.98	Switched Material
53	deadend-1-090	Pole	SP-1-90	2638.12	5.639	38.69	DC04-090	1938.00	1.938	31.53	Switched Material