DESIGN NOTES:
Design according to FDOT Structures Manual (current edition) and the AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals" with Interims.

Manufacturers seeking approval of a prestressed concrete pole for inclusion on the Qualified Products List must submit a QPL Products Evaluation Application along with design documentation and drawings showing the product meets all specified requirements of this Index.

Place the prestressing symmetrically about one axis. Supply a sufficient amount of prestressing to provide a calculated compressive stress of 1.0 ksi for Type P-II pole (12 ft) and 1.8 ksi for Type P-II (36 ft) pole and Type P-III pole at the top of pole after all losses.

Design concrete Strain poles using Class V Special with strength of 6 ksi minimum at 28 days and 4 ksi minimum at transfer of the Prestressing force.

Reinforcing steel shall be A615 Grade 60. Provide a minimum area of non-prestressed reinforcement equal to 0.33% of the concrete area.

Prestressed Strands shall be A416 Grade 270 stress relieved or low relaxation.

One turn required for spiral splices and two turns required at the top and bottom of poles. Spiral shall be manufactured from cold-drawn steel wire meeting the requirements of ASTM A82.

Use cover plates made of non-corrosive materials and attached to the pole using lead anchors or threaded inserts embedded in the pole and round head chrome plated screws.

Attach ground wires to the reinforcing steel in the pole as necessary to prevent the ground wire from being displaced during concreting operations.

Identify concrete poles as to pole manufacturer, Department's pole type, length and Qualified Product List qualification number by inset numerals 1" in height inscribed on the same face of the pole as the handhole and ground wire.

Provide a Class 3 Surface Finish as specified in Section 400-15.2.4 of the Standard Specifications.

Provide a minimum cover of 1".

Provide all poles with a total taper of 0.162 IN/FT.

INSTALLATION NOTES:
Attach span wire assemblies (consisting of the catenary wire, the messenger wire, and the tether wire) to the concrete poles in accordance with Section 634 of the Standard Specifications.

If a two point attachment is required by the plans, provide an eye bolt hole for the messenger wire, or field drill one at the location indicated in the plans. Field drill the eyebolt hole for the tether wire, when required, prior to installation.

Rake pole back from the span wire as necessary to achieve a final rake of ½ ± ¼ inch per foot.

TABLE I
MINIMUM REQUIRED ALLOWABLE SERVICE MOMENT CAPACITY (Ms)

H (feet)	TYPE OF STRAIN POLE				
	P-IV (k-ft)	P-V (k-ft)	P-VI (k-ft)	P-VII (k-ft)	P-VIII (k-ft)
20	21	86	121	165	204
22	24	90	126	171	210
24	26	93	131	176	215
26	29	97	135	182	221
28	32	101	140	187	227
30	34	104	144	192	232
32	37	108	149	197	238
34	39	111	153	202	243
36	41	114	157	207	248
38	44	117	161	212	253
40	46	120	165	217	258
42	48	123	169	221	263
44	50	126	173	226	268
46	52	129	177	230	272
48	54	132	180	235	277
50	56	135	184	239	281

TABLE I shall be used for checking allowable stress in concrete for Dead Load. MS ≥ MDL, where MDL = moment due to dead load only.

TABLE II
MINIMUM REQUIRED ULTIMATE MOMENT CAPACITY (Ø Mn)

H (feet)	TYPE OF STRAIN POLE				
	P-IV (k-ft)	P-V (k-ft)	P-VI (k-ft)	P-VII (k-ft)	P-VIII (k-ft)
20	43	138	198	273	346
22	48	145	206	283	357
24	53	151	215	294	369
26	58	158	224	304	381
28	63	165	232	315	392
30	68	172	241	325	404
32	73	178	250	335	415
34	77	185	258	346	427
36	82	192	267	356	439
38	87	199	276	367	450
40	92	205	284	377	462
42	97	212	293	387	474
44	102	219	302	398	485
46	107	226	310	408	497
48	112	232	319	419	508
50	117	239	328	429	520

TABLE II shall be used for checking ultimate moment strength under factored loading combinations of dead load plus wind load, and is the Nominal Moment Strength (Mn) multiplied by Strength Reduction factor (Ø = 0.9) Ø Mn ≥ Mu = 1.3 (MDL+MWL), where MDL = moment due to dead load, and MWL = moment due to wind load.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
07/01/10	GJM	Deleted edition date from design specification reference.			

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

2010 Interim Design Standard

CONCRETE POLES

Interim Date 07/01/10

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