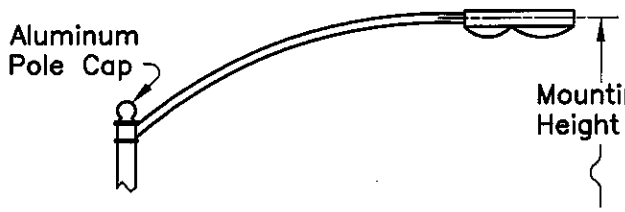
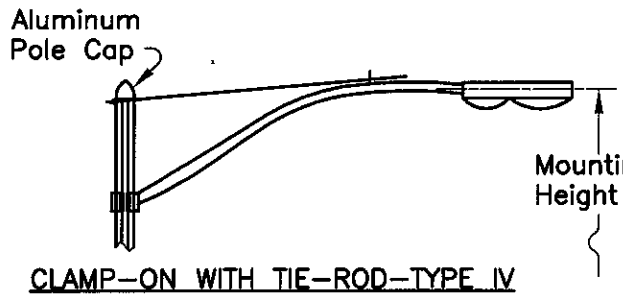
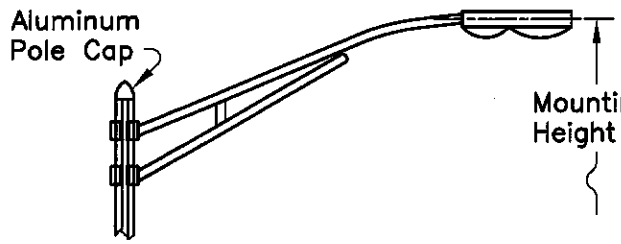
MAST ARM TYPE	POLE LIGHT STANDARD	POLE HEIGHT	MAST ARM LENGTH MOUNTING HEIGHT ±150 mm (±6")	
 CLAMP–ON–MAST ARM–TYPE I			1,800 mm (6 foot)	2,400 mm (8 foot)
	TYPE A	8,000 mm (26'–3")	8,375 mm (27'–6")	8,600 mm (28'–3")
	TYPE B, C & D	9,525 mm (31'–3")	9,900 mm (32'–6")	10,125 mm (33'–3")
 TOP MOUNTED MAST ARM–TYPE II			1,800 mm (6 foot)	2,400 mm (8 foot)
	TYPE A	8,000 mm (26'–3")	8,850 mm (29'–0")	9,075 mm (29'–9")
	TYPE B, C & D	9,525 mm (31'–3")	10,375 mm (34'–0")	10,600 mm (34"–9")
 TOP MOUNTED MAST ARM–TYPE II			1,200 mm (4 foot)	1,800 mm (6 foot)
	TYPE F	7,500 mm (24'–7")	8,075 mm (26'–6")	8,300 mm (27'–3")
			1,800 mm (6 foot)	2,400 mm (8 foot)
	TYPE H	8,535 mm (28'–0")	9,375 mm (30'–9")	9,600 mm (31'–6")
 CLAMP–ON WITH TIE–ROD–TYPE IV			3,000 mm (10 foot)	3,600 mm (12 foot)
	TYPE A	8,000 mm (26'–3")	7,875 mm (25'–10")	8,100 mm (26'–7")
	TYPE B, C & D	9,525 mm (31'–3")	9,400 mm (30'–10")	9,625 mm (31'–7")
 CLAMP–ON TRUSS–TYPE V			3,000 mm (10 foot)	3,600 mm (12 foot)
	TYPE C & D	9,525 mm (31'–3")	10,900 mm (35'–9")	11,875 mm (39'–0")

NOTE:

Electroliers shall be designated by light standard type, mast arm type and mast arm length, i.e., A–II–2400 (A–II–8).

MAST ARMS AND MOUNTING HEIGHTS
SCALE: NONE

Dimensions are in millimeters, except as noted

REVISIONS NO.	DATE
1	01/06/98
2	12/23/02
3	01/07/10
4	

CITY OF LONG BEACH, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

MAST ARMS AND MOUNTING HEIGHTS

STANDARD PLAN NO. METRIC 706

APPROVED BY: Mal Cliff DATE: 1/20/10

CITY ENGINEER R.E. No. 40599 EX. DATE 03/31/11

SHEET 1 OF 3

NOTES:

a) Lighting levels shall be in conformance with CLB STD 706–3.
b) Lighting fixture, shall be Beta LED Catalog Number BLD–STR–T2–HT LEDway Street Light – Type II or BLD–STR–T3–HT LEDway Street Light – Type III or approved equal by the City Engineer.
c) Weather–Tight Electrical Box with terminal strips for installation and power hook–up.
d) Power Hook–Up terminals shall be 183 Watts 120V–277V UL or approved equal.
e) Bird spikes (not shown) shall be a field installed accessory P/N: XA–BRDSPK.
f) All electrical equipment shall conform and shall be manufactured in accordance with Standard Specifications for Public Works Construction Section 209–1.

Dimensions are in millimeters except as noted.

REVISIONS		CITY OF LONG BEACH, CALIFORNIA	STANDARD PLAN NO.
NO.	DATE	DEPARTMENT OF PUBLIC WORKS	
1	01/07/10	MAST ARMS AND MOUNTING HEIGHTS AND LIGHTING FIXTURE NOTES	METRIC 706
2			
3		APPROVED BY: _____ DATE: 1/20/10	SHEET
4		CITY ENGINEER R.E. No. 40599 EX. DATE 03/31/11	2 OF 3

Recommended Maintained Luminance and Illuminance Values for Roadways**

(a) Maintained Luminance Values (L_{avg}) in Candelas per Square Meter*

Road and Area Classification		Average Luminance L_{avg}	Luminance Uniformity L_{avg} to L_{min}	Luminance Uniformity L_{max} to L_{min}	Veiling Luminance Ratio (maximum) L_v to L_{avg}
Freeway Class A		0.6	3.5 to 1	6 to 1	0.3 to 1
Freeway Class B		0.4	3.5 to 1	6 to 1	0.3 to 1
	Commercial	1.0	3 to 1	5 to 1	
Expressway	Intermediate	0.8	3 to 1	5 to 1	0.3 to 1
	Residential	0.6	3.5 to 1	6 to 1	
	Commercial	1.2	3 to 1	5 to 1	
Major	Intermediate	0.9	3 to 1	5 to 1	0.3 to 1
	Residential	0.6	3.5 to 1	6 to 1	
	Commercial	0.8	3 to 1	5 to 1	
Collector	Intermediate	0.6	3.5 to 1	6 to 1	0.4 to 1
	Residential	0.4	4 to 1	8 to 1	
	Commercial	0.6	6 to 1	10 to 1	
Local	Intermediate	0.5	6 to 1	10 to 1	0.4 to 1
	Residential	0.3	6 to 1	10 to 1	

(b) Average Maintained Illuminance Values (E_{avg}) in Lux†

Road and Area Classification		Pavement Classification R1	Pavement Classification R2 and R3	Pavement Classification R4	Illuminance Uniformity ratio E_{avg} to E_{min}
Freeway Class A		6	9	8	3 to 1
Freeway Class B		4	6	5	
	Commercial	10	14	13	
Expressway	Intermediate	8	12	10	3 to 1
	Residential	6	9	8	
	Commercial	12	17	15	
Major	Intermediate	9	13	11	3 to 1
	Residential	6	9	8	
	Commercial	8	12	10	
Collector	Intermediate	6	9	8	4 to 1
	Residential	4	6	5	
	Commercial	6	9	8	
Local	Intermediate	5	7	6	6 to 1
	Residential	3	4	4	

Notes
1. Lv = veiling luminance
2. These tables do not apply to high mast interchange lighting systems, e.g., mounting heights over 20 meters. See Fig. 24-9.
3. The relationship between individual and respective luminance and illuminance values is derived from general conditions for dry paving and straight road sections. This relationship does not apply to overages.
4. For divided highways, where the lighting on one roadway may differ from that on the other, calculations should be made on each roadway independently.
5. For freeways, the recommended values apply to both mainline and ramp roadways.

*For approximate values in candelas per square foot, multiply by 0.1.
†For approximate values in footcandles, multiply by 0.1.

**Figure 22-8 from the Illuminating Engineering Society of North America (IESNA) the year 2000 Ninth Edition

REVISIONS NO.	DATE	CITY OF LONG BEACH, CALIFORNIA DEPARTMENT OF PUBLIC WORKS	STANDARD PLAN NO.
1	01/07/10	RECOMMENDED MAINTAINED LUMINANCE AND ILLUMINANCE VALUES FOR ROADWAYS	METRIC 706
2			
3		APPROVED BY: _____ DATE: 1/20/10	SHEET
4		CITY ENGINEER R.E. No. 40599 EX. DATE 03/31/11	3 OF 3