

**DESIGN & CONSTRUCTION POLICIES**

Adopted:

**Roadway Illumination**

These policies are intended to aid in the design and construction of roadway illumination systems that are adequate to provide the necessary illumination for motor vehicles, bicycles, pedestrians and the City of Post Falls as a whole. These policies' are subject to the review and interpretation of the City Engineer.

**Standard:** Maximum illumination standards are based upon publication ANSI / IESNA RP-8-00

**Policy:**

Illumination of roadways within the public rights-of-way shall be done with equipment owned by the electric utility servicing the project area.

Cobra head style luminaries shall be mounted onto a metal standard.

Luminary type and maximum spacing shall be as indicated in Tables 1-B and 1-C by roadway type for each electric utility.

At roadway intersections, the average illumination shall be 1.5 times the illumination required for the more highly illuminated street.

**Application:**

The layout of roadway illumination shall take into account existing luminaries adjacent to the project area.

When necessary, consideration of the future locations of luminaries outside of the project limits shall be indicated to verify adequacy of the proposed layout.

Were conflicts exist between proposed luminary locations and existing features (driveway approaches, utility poles, utility lines); individual luminary positions may be adjusted up to 10% of the spacing length to accommodate the conflict.

*Collector and Arterial Roadways:* Layouts shall evenly space, to the greatest extent possible, luminaries between major intersections. Major intersections shall constitute any intersection where at least three (3) legs of the intersection are classified as a minor collector or higher.

The layout of luminaries at major intersections shall be based on the same layout and orientation as for traffic signalization. (Reference Figure 2). At major intersections that are unsignalized, a minimum of two (2) luminaries shall be provided with a single luminary oriented perpendicular to each approach.

Where a local roadway intersects a roadway classified as a collector or higher, a cobra head luminary shall be placed in a quadrant opposite of a traffic control device and oriented perpendicular to the local roadway. (Reference Figure 2)

Local Roadways: Intersections of local roadways with local roadways may utilize cobra head or town and country style luminaries. The luminary shall be located in a quadrant opposite of the proposed or the most likely location of future traffic control devices; based on projected traffic patterns and engineering judgment. Cobra head style lights shall be oriented perpendicular to the roadway centerline

Cul-de-sacs and knuckles: Luminaries shall not be located within the bulb portion of cul-de-sacs or knuckles (Reference Figure 3).

Signalized Intersections: Luminaires shall be installed and oriented with each mast arm to project over the roadway.

At "T" intersections an additional luminaire shall be installed on the exit leg of the minor approach to the intersection. Said luminaire shall be oriented perpendicular to the minor street centerline.

Signalized intersections shall provide advanced illumination for each approach leg of the intersection at a distance of 150 feet from the nearest intersection Luminaire.

Roundabouts: A Luminaires shall be installed near the exit leg within each quadrant of the roundabout and oriented radial to the respective curb.

Roundabouts shall provide advanced illumination for each approach leg of the intersection at a distance of 150 feet from the nearest intersection Luminaire.

Sidewalks: Sidewalks greater than 8-feet in width and all public sidewalks or multi-use trails located within the Smart Code Transects T-5 and T-6 shall be provided with sidewalk illumination.

Sidewalk luminaries shall be equally spaced along each block with a 100 foot maximum separation.

Sidewalk luminaires shall be placed on each block end, a minimum of 10 feet and a maximum of 25 feet from the pedestrian ramps.

Sidewalk luminaires shall be coordinated to provide a luminaire at all public bench location, bus stops and shelters.

Roadways shall locate sidewalk luminaires with a consistent Luminaire Mast Arm orientation and location relative to sidewalk or back of walk. Opposite sides of the roadway shall mirror the location of sidewalk lighting to the greatest extent practical.

Multi-use trails shall locate sidewalk luminaires with a consistent Luminaire Mast Arm orientation and location relative to the multi-use trail. Opposite sides of the roadway shall mirror the location of sidewalk lighting to the greatest extent practical.

**Alternate Design:**

Where alternate arrangements of luminaries are proposed, such as within a Planned Unit Development (PUD), illumination calculations shall be provided as part of the submittal.

For alternate designs scenarios; the amount of illumination provided shall meet at a minimum the same uniformity ratio as an identical roadway classification using the City's Standard Spacing. When the amount of illumination desired is greater than the City Standard, in no event shall the amount of illumination provided exceed the following:

**Maximum Roadway Illumination**

**Table 1-A**

Roadway Classification	Uniformity Ratio (avg/min)	Footcandle level
Residential	6	0.7
Local Commercial / Industrial	3	0.9
Collector	4	0.9
Minor Arterial	3	1.3
Sidewalk	4	0.5

Lamp type: High Pressure Sodium 100 watt (9,500 lumens)  
High Pressure Sodium 200 watt (22,000 lumens)

Maintenance factor 0.7

Intersection illumination 1.5x maximum roadway illumination

Prepared by: RSP  
Date: 01/03/2006

Modified by: RSP  
Date: 02/2010

**Kooetani Electric Cooperative (KEC)****Table 1-B**

Roadway Classification / (Smart Code Zone)	Luminaire Type & Catalogue #	Mounting Height /	Curb Overhang	Wattage	Spacing
Residential (T2-T3)	Cobra Head # M2RC10S1N2GMC3	30 Feet	2 Feet	100	600 Ft. max.
	Town & Country # LXF10SR233U0233	16 Feet	4 Foot curb setback	100	300 Ft. max.
Local Commercial / Industrial (T4-T6)	Cobra Head # M2RC10S1N2GMC3	30 Feet	4 Feet	100	150 Ft. staggered
Collector	Cobra Head # M2RC10S1N2GMC3	30 Feet	4 Feet	100	150 Ft. staggered
Minor Arterial	Cobra Head # M2RC20S1N2GMC3	30 Feet	4 Feet	200	150 Ft. staggered
Principal Arterial		35 Feet	4 Feet		varies

**Avista Utilities****Table 1-C**

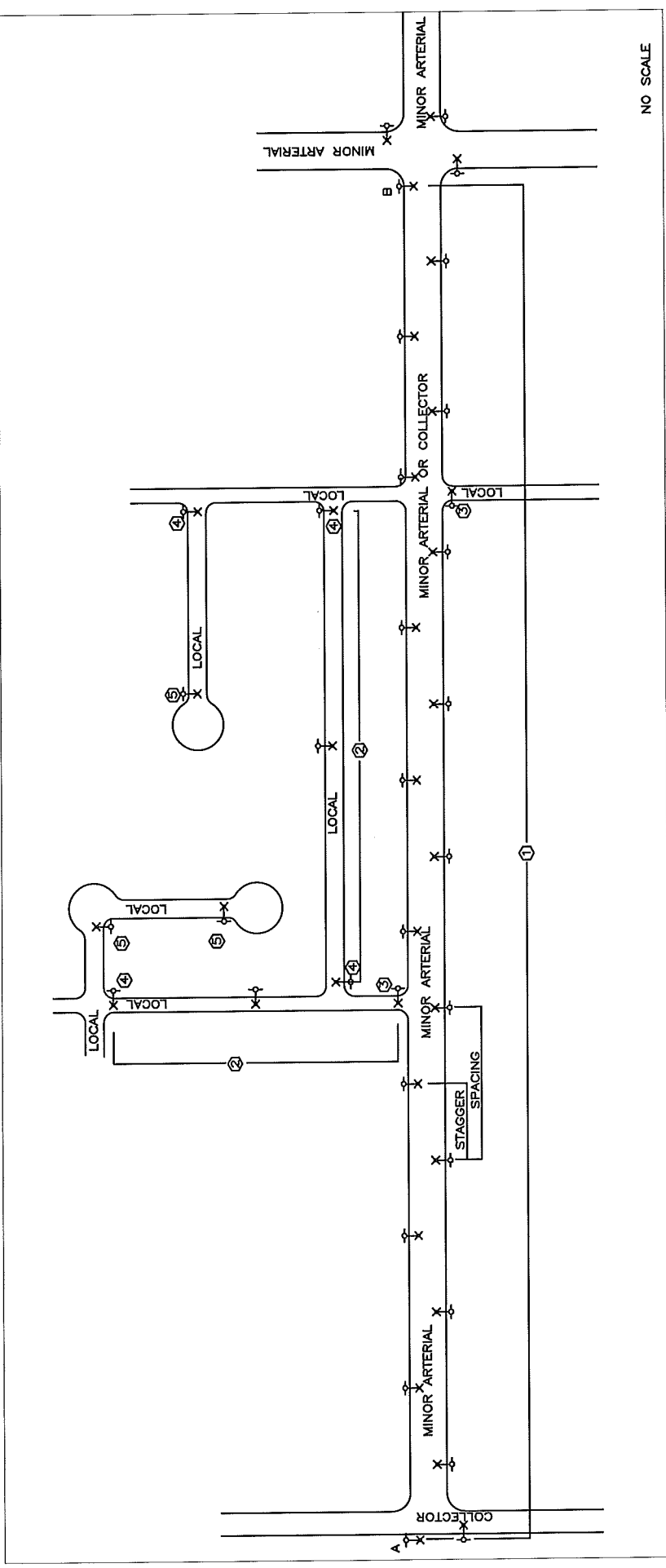
Roadway Classification / (Smart Code Zone)	Luminaire Type & Catalogue #	Mounting Height /	Curb Overhang	Wattage	Spacing
Residential (T2-T3)	Cobra Head # M2AR10S1H2AMS22 268	30 Feet	2 Feet	100	600 Ft. max.
	Town & Country # T10R10S1N2AMS3BL 104	16 Feet	4 Foot curb setback	100	300 Ft. max.
	Corvus # CVM 10S CA MT1 R2	30 Feet	0 Feet	100	600 Ft. max.
Local Commercial / Industrial (T4-T6)	Cobra Head # M2AC20S1A2GMC32 267	30 Feet	4 Feet	100	150 Ft. staggered
	Corvus # CVM 10S CA MT1 R2	30 Feet	1 Foot	100	150 Ft. staggered

Collector	Cobra Head # M2AC20S1A2GMC32 267	30 Feet	4 Feet	100	150 Ft. staggered
	Corvus # CVM 10S CA MT1 R2	30 Feet	1 Foot	100	150 Ft. staggered
Minor Arterial	Cobra Head # M2AC20S1A2GMC32 267	30 Feet	4 Feet	200	150 Ft. staggered
Principal Arterial	Cobra Head # M2AC20S1A2GMC32 267	35 Feet	4 Feet	200	150 Ft. staggered

**SIDEWALK ILLUMINATION**

**Table 1-D**

Pole Type & Catalogue #	Luminaire Type & Catalogue #	Mounting Height	Pole Height	Wattage	Spacing
Ameron # 5B119SPL With top cap and single LMA	Antique Street Lamp # EH16RT150SMED	14 Feet	18 Feet	150	100 Ft. max.



- NOTES:
- 1) EQUALLY SPACE LUMINAIRES ALONG COLLECTOR AND ARTERIAL ROADWAYS FROM MAJOR INTERSECTION TO MAJOR INTERSECTION (POINTS "A" TO "B"). SEE FIGURE #2 FOR DETAILS AT INTERSECTIONS.
  - 2) EQUALLY SPACE LUMINAIRES ALONG LOCAL ROADWAYS. NOT TO EXCEED MAXIMUM SPACING REQUIREMENTS.
  - 3) AT THE INTERSECTION OF A LOCAL ROADWAY WITH A COLLECTOR OR ARTERIAL ROADWAY, A SINGLE COBRA HEAD LUMINAIRE SHALL BE LOCATED PERPENDICULAR TO THE LOCAL ROADWAY, SEE FIGURE #2.
  - 4) AT THE INTERSECTION OF A LOCAL ROADWAY WITH A LOCAL ROADWAY, A SINGLE LUMINAIRE (COBRA HEAD OR TOWN AND COUNTRY) SHALL BE PROVIDED. SEE FIGURE #3
  - 5) A SINGLE LUMINAIRE SHALL BE LOCATED AT EACH CUL-DE-SAC OR STREET KNUCKLE. LUMINAIRES SHALL NOT BE LOCATED WITHIN THE BULB SECTION OF CUL-DE-SACS OR STREET KNUCKLES.

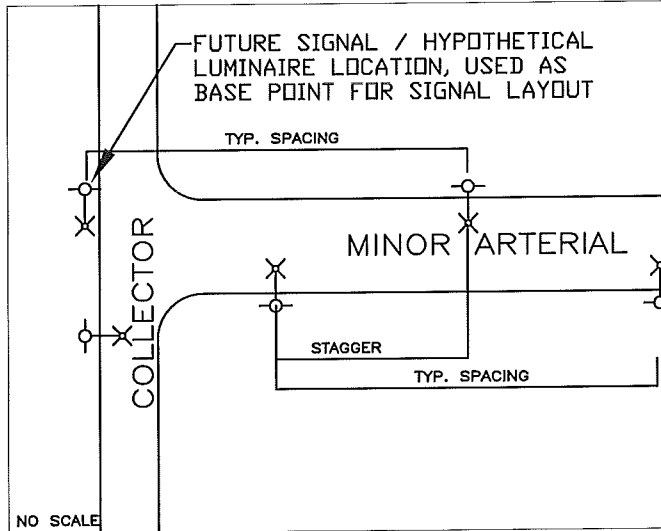
COMMUNITY DEVELOPMENT - ENGINEERING DIVISION  
 408 SPOKANE STREET, POST FALLS, IDAHO 83854  
 208-773-4233 - www.postfallsidaho.org

**Typical Luminaire Layout**

DWG No. 06-000 | SCALE: 1 in. = NONE | SHEET 1 of 3  
 FILE: Roadway\_Illumination\_Example.Dwg | DATE: January 6, 2006

Idaho's River City

FIGURE #1



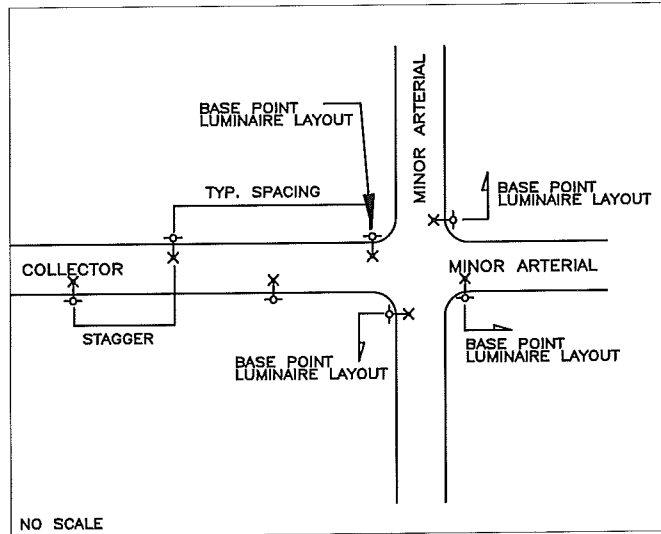
**MAJOR INTERSECTION (TEE)**

ESTABLISH BASE POINT FOR LUMINAIRE LAYOUT, BEING THE HYPOTHETICAL SIGNAL LOCATION AND ORIENTATION ON THE NONEXTENDED LEG OF THE INTERSECTION.

DETERMINE THE DISTANCE TO THE NEXT MAJOR INTERSECTION.

DETERMINE THE REQUIRED LUMINAIRE SPACING WITHOUT EXCEEDING THE ESTABLISHED MAXIMUM SPACING. MAKE MINOR ADJUSTMENTS TO SPACING, WHEN NECESSARY, TO ACCOMMODATE INTERSECTIONS WITH LOCAL STREETS.

REFERENCE FIGURE #1



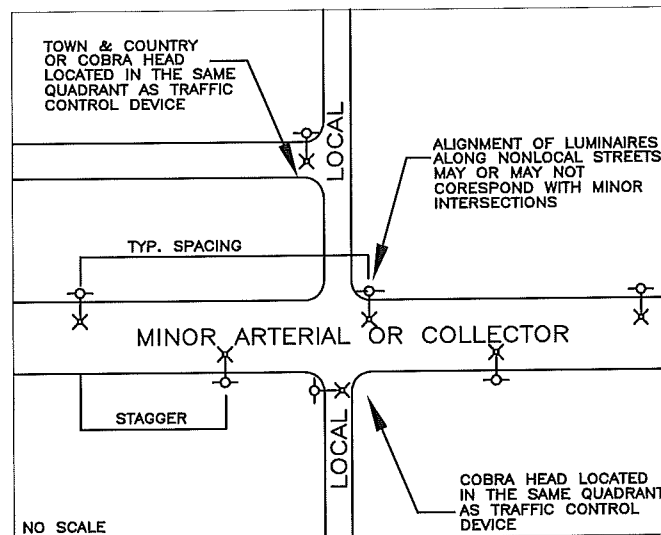
**MAJOR INTERSECTION (4-LEG)**

ESTABLISH BASE POINT FOR LUMINAIRE LAYOUT, BEING THE SAME LOCATION AND ORIENTATION AS FOR TRAFFIC SIGNALIZATION.

DETERMINE THE DISTANCE TO THE NEXT MAJOR INTERSECTION.

DETERMINE THE REQUIRED LUMINAIRE SPACING WITHOUT EXCEEDING ESTABLISHED MAXIMUM SPACING. MAKE MINOR ADJUSTMENTS TO SPACING, WHEN NECESSARY, TO ACCOMMODATE INTERSECTIONS WITH LOCAL STREETS.

REFERENCE FIGURE #1



**MINOR INTERSECTION**

**(LOCAL STREET WITH ARTERIAL OR COLLECTOR)**

WHERE A LOCAL ROADWAY INTERSECTS A MINOR ARTERIAL OR COLLECTOR ROADWAY, A SINGLE COBRA HEAD ASSEMBLY SHALL BE PROVIDED IN ONE QUADRANT OF THE INTERSECTION WITH THE MAST ARM ORIENTED PERPENDICULAR TO THE CENTERLINE OF THE LOCAL STREET. THE LOCAL STREET COBRA HEAD SHALL BE PLACED IN THE SAME QUADRANT AS A TRAFFIC CONTROL DEVICE.

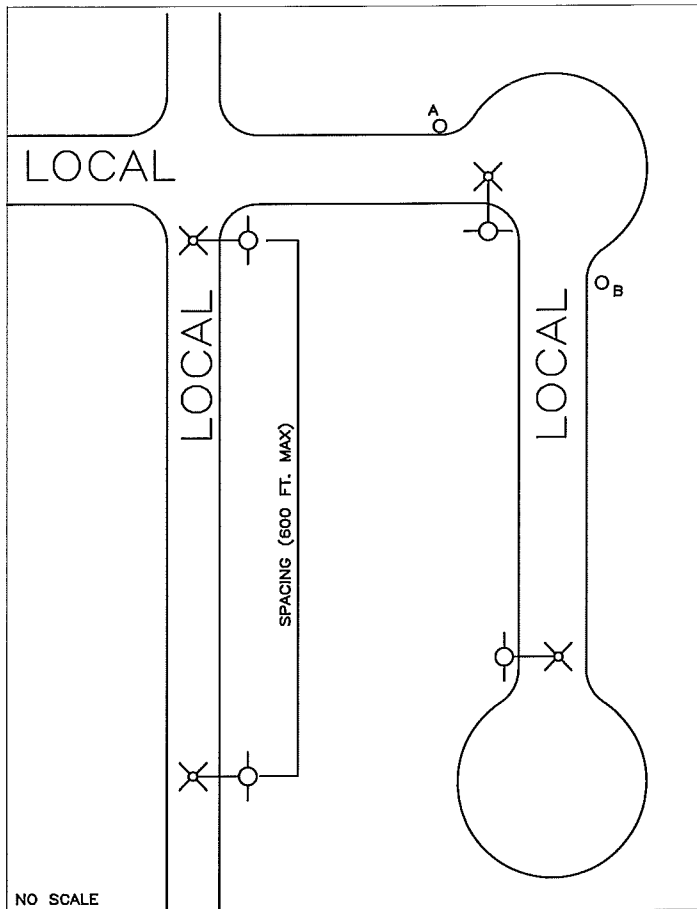
ONLY ONE (1) LUMINAIRE IS REQUIRED FOR THE LOCAL ROADWAY LEG(S) OF THE INTERSECTION.

LUMINAIRE LOCATIONS ALONG MINOR ARTERIAL AND COLLECTOR STREETS MAY OR MAY NOT ALIGN WITH MINOR INTERSECTIONS.

REFERENCE FIGURE #1

FIGURE #2

COMMUNITY DEVELOPMENT - ENGINEERING DIVISION 408 SPOKANE STREET, POST FALLS, IDAHO 83854 208-773-4235 - www.postfallsidaho.org	
	<h1>Intersection Detail</h1>
	DWG No. 06-000 SCALE: 1/4" = NONE Ft SHEET 2 of 3 FILE: Roadway Illumination Example.Dwg DATE: January 6, 2006



**LOCAL STREETS**

LOCAL ROADWAYS MAY UTILIZE COBRA HEAD OR TOWN AND COUNTRY STYLE LUMINAIRES.

A SINGLE LUMINAIRE IS REQUIRED AT EACH INTERSECTION OF A LOCAL ROADWAY WITH A LOCAL ROADWAY. (REFERENCE FIGURE #2 FOR INTERSECTIONS WITH COLLECTORS OR ARTERIALS).

AT INTERSECTIONS, THE LUMINAIRE SHALL BE LOCATED IN A QUADRANT WITHOUT A TRAFFIC CONTROL DEVICE OR THE LEAST LIKELY QUADRANT OF FUTURE DEVICES.

LUMINAIRES SHALL BE EQUALLY SPACED ALONG LOCAL ROADWAYS, WITH A MAXIMUM SPACING OF 600 FEET.

LUMINAIRES SHALL NOT BE LOCATED WITHIN THE BULB PORTION OF A CUL-DE-SAC OR STREET KNUCKLE.

WHERE COBRA HEADS ARE USED, THE MAST ARM SHALL BE ORIENTED PERPENDICULAR TO THE ROADWAY CENTERLINE.

ALTERNATE LOCATIONS FOR LUMINAIRES AT STREET KNUCKLES ARE IDENTIFIED FOR REFERENCE HEREIN AS POINTS "A" AND "B".

REFERENCE FIGURE #1

FIGURE #3

COMMUNITY DEVELOPMENT - ENGINEERING DIVISION 408 SPOKANE STREET, POST FALLS, IDAHO 83854 208-773-4235 - www.postfallsidaho.org	
	<b>Local Street Detail</b>
	DWG No. 06-000   SCALE: 1/4" = NONE Ft   SHEET 3 of 3
	FILE: Roadway Illumination Example.Dwg   DATE: January 6, 2006