

***SCHEDULE G***

**REGULATIONS, STANDARDS, AND SPECIFICATIONS  
FOR THE INSTALLATION OF STREET LIGHTING**

This is Schedule G of the Corporation of the Village of  
Valemount Subdivision and Development Servicing Bylaw  
No. 450, 1998.

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Clerk

# **SCHEDULE G**

## **REGULATIONS, STANDARDS AND SPECIFICATIONS FOR THE INSTALLATION OF STREET LIGHTING**

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### **1.0 GENERAL**

#### **1.01 Street Lighting To Be Provided By Owner**

Where the provisions of Schedule A require the provision of street lighting, the Owner shall provide street lighting including all service wiring, bases, poles, luminaires, lamps, photo cells, control equipment and all related appurtenances consistent with the regulations, standards and specifications set out in this Schedule and the requirements of the Provincial Inspector of Electrical Energy.

#### **1.02 Approval of Engineering Drawings Required Prior To Construction**

Engineering drawings showing detailed design of the necessary works shall be approved by the Village Engineer before commencement of construction.

The street lighting system shall be designed in accordance with the Canadian Standard Practice For Street and Highway Lighting.

#### **1.03 Permit Fees To Be Paid By Owner**

The Owner shall be responsible for obtaining all required electrical permits, arranging for all electrical inspections covering his work and paying all fees for such permits. A copy of the permits are to be submitted to the Village at the time of application for final approval.

### **2.0 DESIGN CRITERIA**

#### **2.01 Levels of Illumination**

The average levels of illumination in lux shall be as described in Table G.1:

**TABLE G.1  
ILLUMINATION FOR VARIOUS HIGHWAY CLASSIFICATIONS**

	Residential Areas	Commercial and Industrial Areas
Downtown/Frontage/ Commercial	10.0	21.5
Collector	6.5	11.0
Local	4.5	10.0

The maximum uniformity ratio for local residential highways shall be 6:1; all other highways shall be 3:1.

**2.02 Pole Locations**

In general, poles shall be installed as follows:

- .1 downtown/frontage/commercial - opposite or staggered spacing;
- .2 collector highways - staggered spacing; and
- .3 local highways - spaced one side of streets behind the sidewalk.

Poles shall be located within 0.6 metres of the property corners and shall be checked for conflict with driveways, underground services and fire hydrants.

**2.03 Rules and Regulations**

Equipment, installation, wiring methods, and materials used shall be in accordance with the latest edition, including amendments, of the Rules and Regulations for the installation and maintenance of electrical equipment as issued by the Province of British Columbia and all bulletins issued thereto. Work shall also be in accordance with all applicable Municipal codes and regulations, Provincial Statutes in effect at the site, and the Fire Marshall and Workmen's Compensation Acts, hereinafter called the Rules and Regulations.

Wherever the drawings or specifications call for material, workmanship, arrangement or construction of a superior quality than is required by the rules and regulations, the drawings and specifications shall prevail. Otherwise, should there be a conflict between the rules and regulations and the drawings and specifications, the rules and regulations shall prevail. The Owner shall obtain, and pay for all permits, and arrange for all electrical inspections covering his work, and pay all other fees and charges, and make all deposits that are in any way connected with the installation of the systems specified as shown on the Standard Drawings. He shall give all necessary notices to authorities having jurisdiction, and shall be responsible for keeping all applicable public ordinances.

Scheduling B.C. Hydro and Power Authority shall be the Owner's responsibility. Systems shall be compatible with power services available. Where costs are incurred with B.C. Hydro and Power Authority in installing the light system, these shall be considered as part of the cost of the system.

Before acceptance of any part or all of the system, it shall meet the requirements of Schedule H. As built drawings of the street lighting system shall be furnished to the Village Engineer prior to acceptance. The information shown shall be pole locations and locations of all conduits, together with any other pertinent information.

Before acceptance of any work by the Village Engineer, he shall have received a Certificate of Inspection by the governing electrical authorities showing that the installation is unconditionally approved.

#### **2.04 Connection to Utility**

An allowance for a minimum of 8 street lights per electrical connections shall be made and future extension of the street lighting system should accommodate this requirement.

Each connection to B.C. Hydro will be made to a service box located at a lamp standard as shown on the Standard Drawings.

### **3.0 MATERIALS**

#### **3.01 General**

Electrical materials used in the street lighting system shall be new and shall be approved by and bear the label of the Canadian Standards Association.

#### **3.02 Street Light Poles**

Poles shall be as shown on the Standard Drawing and shall be a minimum 11 gauge octagonal steel anchor base type with 1.8, 2.5 or 3.0 m davit and a minimum height of 7.9 m for local highways and 9 m for collector and arterial highways as shown on the applicable Standard Drawing. Poles shall be complete with anchor bolts, nuts and nut covers, handhole and water tight cover assembly, grounding stud and fuse and terminal block assembly as shown on the Standard Drawing. Poles shall be factory hot dipped galvanized coat in accordance with CAN/CSA-S16.1 and CAN/CSA-G164.

### **3.03 Conductors**

All conductors shall be copper and if larger than 10 AWG, shall be stranded.

All insulated conductors shall be colour coded. White shall be used for the mutual conductor.

Conductors run in rigid PVC conduit or in the interior of street light poles shall be wire type as listed in Table 19 of the Canadian Electrical Code for use in raceways (wet location). Adequate slack shall be provided in the pole to permit removal of connected wires and fusing through the handhole for maintenance.

In no case shall the conductor be less than 10 AWG.

### **3.04 Conduit**

Rigid PVC conduit shall be acceptable provided that it bears a CSA Certification label and all fittings shall be CSA Certified. PVC conduit shall be installed in strict accordance with the Manufacturer's recommendation, using CSA certified cement. The conduit shall not be bent in the field. Only factory bends shall be acceptable. The minimum conduit size shall be 32 mm diameter.

### **3.05 Luminaries and Lamps**

Luminaries shall be High Pressure Sodium Cobra Head Fixtures, 100 watt Landmark 100 - L2HS100P2V, 120/240 volt for local roads and 150 watt Landmark 150-L2HS150P2Y, 120/240 volt on collector and arterial roads, or as otherwise approved by the Village Engineer. Photocells shall be Fisher Pierce 6660 or 6690 or equivalent. There shall be one photocell per luminaire.

On local and cul-de-sac highways, a Cooper Industries Crouse-Hinds Lighting Promenade Type PR, 100 watt, HPS Post Top, poly carbonate, type 3 distribution luminaire may be used. Photocells shall be Fisher Pierce 6660 or 6690 or equivalent. There shall be one photocell per luminaire.

### **3.06 Junction Boxes**

Junction boxes shall be PVC or concrete. PVC boxes with street lids shall be used in sidewalk areas only. Concrete boxes with street lids shall be used in all areas subject to vehicle traffic. Concrete lids may be used in areas not subject to vehicle traffic. There will be one junction box per street light.

### **3.07 Ground Rods**

Ground rods shall be 19 mm diameter steel with hot forged point, full length galvanized or copperweld and located in the junction box adjacent to each pole.

### **3.08 Connectors**

Insulated connectors shall be Scotchlok as manufactured by Minnesota Mining and Manufacturing Co. Ltd., or as otherwise approved by the Village Engineer. For conductor combinations too large to use Scotchlok connectors, a solderless line connection shall be used, such as connector CL2 manufactured by Thomas & Betts Ltd., or approved equal. Bare copper lug used for connecting ground conductor to ground stud in lighting pole handhole shall be Thomas & Betts 54106 full compression lug, or approved equal. The connector serving a ground rod shall be Burndy type GAR, or approved equal.

### **3.09 Pole Bases**

Concrete bases for poles shall be as shown on the applicable Standard Drawing.

### **3.10 Fusing**

There shall be one in-line (cartridge type) fuse per street light, located within each pole and accessible through the handhole.

## **4.0 WORKMANSHIP**

### **4.01 Installation**

Conduits shall be installed in accordance with the applicable Standard Drawing at a constant depth and on the alignment shown on the approved construction drawings. Conduits under existing paved roads, driveways or sidewalks shall be installed by tunnelling, unless the Village Engineer gives his express written consent for open trench construction. Service line conductors and all other electrical components shall be installed in conformance with the standard drawings in the B.C. Electrical Code. A conduit under curb or sidewalk shall be buried in a trench with the centre line not less than 750 mm below top of curb or sidewalk.

If no curb or sidewalk is installed, the conduit shall be buried 900 mm below finished grade of centreline of road; and all road, lane and industrial and commercial driveway crossings, the conduit shall be buried not less than 900 mm below top of crossing. If the top of crossing is covered by concrete slab, the depth of trench may not be less than 750 mm below the top of crossing.

In all trenches, the conduit shall be snaked slightly to permit expansion and contraction.

All ducts shall be sand bedded.

Bases shall be constructed and installed as shown on the Standard Drawings. The standards shall be erected plumb, using shims if required.

Luminaries shall be securely fastened to the lighting poles and oriented to produce the required light distribution.

#### **4.02 Restoration**

All roadways, lanes, driveways, boulevards, and other areas traversed by trenches shall be returned to their original conditions or better by the Owner.