SCHEDULE H

REGULATIONS, STANDARDS AND SPECIFICATIONS FOR THE INSTALLATION OF ELECTRICAL AND COMMUNICATIONS WIRING AND GAS DISTRIBUTION SYSTEMS

This is Schedule H of the City of
Vernon Subdivision and Development
Servicing Bylaw No. 3843, 2008

"Patti Bridal"

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City Clerk

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SCHEDULE H – BYLAW NO. 3843

REGULATION, STANDARDS AND SPECIFICATIONS FOR THE INSTALLATION OF ELECTRICAL AND COMMUNICATIONS WIRING AND GAS DISTRIBUTION SYSTEM

1.0 GENERAL

Standards and Specifications to Apply to All Electrical and Communication Works

1.01 The objective of this section of the bylaw is to ensure that all development is provided with electrical, telephone, cablevision and natural gas service as necessary to support the development in a sustainable manner that improves or enables the future improvement of the streetscape. Electrical, telephone, cablevision and natural gas systems shall be provided to serve each lot within the subdivision consistent with the standards and specifications set out in this Schedule and Schedule A. The City does not support the use of overhead utility service within City limits for new development or re-development. Wherever possible existing overhead systems are to be removed and replaced with underground utility systems. Where existing overhead service is present but no underground utility service is available all servicing of the proposed development must be underground. This includes all works required to service the development which may be suspended from overhead poles including transformers. All utility servicing from overhead systems must be designed to enable the future removal of the overhead systems and their replacement with underground systems with minimal or no disturbance to users. Where overhead systems remain in place installation of approved conduit or carrier pipe for future utility use in the designated utility corridors along the frontage is required unless the City Engineer waives this requirement due to limited potential for use during the materials anticipated service life. Road crossing conduit and or carrier pipe is also required as part of any road construction where underground servicing is anticipated within the service life of the road structure

Approval of Engineering Drawings Required Prior to Construction

1.02 Any utility works proposed in existing City road ROW's must be submitted by the utility company directly to the City Engineer for approval. Any utility works proposed in new road ROW's for development must be submitted by each utility company to the project engineer for inclusion in the subdivision design plans. The project engineer must submit a plan showing all utilities, the associated surface works and underground alignments, ensuring no conflict with other works. The composite detailed design of the proposed works shall be submitted by the project engineer to the City Engineer for acceptance aspart of the overall project design. No construction of the works shall commence until the design drawings have been approved by the City Engineer. The engineering drawings shall clearly indicate the locations of poles, structures, conduits, pipes and any other facilities required. Standard drawings 100-16 & 100-17 provide the typical utility corridors supported by the City that are to be the basis for the integration of these services as part of the overall roadway design. Variations of offset for each corridor from typical may be necessary to address site specific circumstances but must be supported by all utility companies prior to submission to the City.

Construction In Compliance With Engineering Drawings

1.03 All poles, structures and facilities shall be constructed or installed in compliance with the engineering drawings approved by the City Engineer.

Construction In Accordance With B.C. Hydro, Telus, Shaw Cablesystems and Terasen Gas. Requirements

1.04 Electrical, Telephone and Cablevision services shall be installed in accordance with the requirements of the B.C. Hydro, Telus, Shaw Cable and the Inspector of Electrical Energy of the Province of B.C. Natural gas distribution works shall be installed in accordance with the requirements of Terasen Gas.

Underground Electrical Systems

1.05 Underground systems shall include the supply and installation of all necessary conduits, wiring, transformers, service runs and connections for a complete and fully operative underground electrical system as laid out by B.C. Hydro and approved by the Inspector of Electrical Energy of the Province of B.C and accepted by the City Engineer.

Underground Internet, Telephone and Cablevision

1.06 Underground communication systems, internet, telephone and cablevision shall include the supply and installation of the necessary conduits, wiring, service runs and connections for a complete and fully operative underground telephone and cable systems as laid out by Telus and Shaw Cablesystems and accepted by the City

Gas Distribution System

1.07 Natural gas distribution system shall include the supply and installation of the necessary conduit and main line tubing for a complete and fully operative main line as laid out by Terasen Gas and shall be accepted by the City Engineer prior to the construction and installation of such a system. All mains forming part of a natural gas distribution system shall be buried at a minimum depth of 600 mm. The system or extension shall be installed following installation of sewer and water mains. Rehabilitation of boulevards shall be the responsibility of the Applicant. Conduit is required adjacent to all structures that may be disturbed during installation of the gas system such as curb & gutter, sidewalk and roads, fire hydrants, other utility conduit or transformer counterpoise.

2.0 DESIGN CRITERIA

Horizontal Location

2.01 Typical horizontal line assignment for all shallow utilities shall be as per Standard Drawings 100-16 or 100-17. The **minimum** separation between BC Hydro conduit and other conduits is 0.3m. The minimum separation between Terasen gas mains and other conduits is 0.3m. Horizontal location relative to other road works and major

utilities shall be as shown on Standard Drawings No. 100-1 to 100-6. Where existing overhead utilities are present and proposed to be replaced with underground conduit, the ultimate location/alignment of the conduit is to be proposed by utility company and approved by the City Engineer. Where overhead lines vary from one side of the road to the other underground line assignment is to be based on best provision of current and future service along that road. Systems shall be laid out with due regard for other utilities, and shall have the approval of the City Engineer as well as the utility company involved. Where overhead distribution is specified, pole locations and any anchor easements shall be approved by both the City Engineer and the appropriate utility company. No design shall be approved that creates an aerial trespass and any revision of existing systems must be designed to reduce the number of existing poles present and eliminate any existing aerial trespass where possible.

Vertical Location

2.02 All conduit shall have a minimum of 900 mm cover. All gas tubing shall have a minimum of 600 mm cover

Detailed Design

2.03 Details of design such as vertical and horizontal location of service boxes, size and type of conduits and gas mains, kiosk dimensions and ducting and all wiring details shall be as per specifications and drawings provided by B.C. Hydro, Telus, Shaw Cable and Terasen Gas. All major structures such as ground transformers must be sized and located to minimize the number of these structures ultimately required. Road right of way design widths must accommodate all shallow utility conduits and natural gas mains and may need to be increased from the minimum indicated in the standard drawings in this bylaw to accommodate this. Site specific right-of-way widening to accommodate larger structures may be considered by the City Engineer on a site specific basis.

3.0 MATERIALS

B.C. Hydro

3.01 All materials used in the underground or overhead electrical distribution system shall be as specified by B.C. Hydro.

Telus

3.02 All materials used shall be as specified by the Telus.

Shaw Cablesystems

3.03 All materials used shall be specified by Shaw Cablesystems and supplied by the Applicant unless otherwise directed by the cablevision company.

Terasen Gas

3.04 All materials used in the underground natural gas distribution system shall be specified by Terasen Gas. Gas distribution may be permitted on both sides of the roadway where development is present on both sides if requested by Terasen Gas and authorized by the City Engineer.

4.0 WORKMANSHIP

Underground Installation

4.01 Installation requirements such as trenching, installation of ducting and backfilling shall be according to specifications supplied by the appropriate utility company and City of Vernon Bylaws. All installations shall conform to Workers Compensation Board requirements for excavations. All conduits must be bedded and covered in sand complete with marker tape over the works at 0.3m cover.

Clean-up

4.02 All existing infrastructure is to be restored to its original condition, or better, to the satisfaction of the City Engineer. Sidewalk replacement/restoration must be for entire panels impacted by the works. After installation of all underground ducting service boxes, kiosks, etc. the boulevard area shall be shaped to grade and all debris shall be removed. Any damage to existing structures as the result of installation shall be repaired to the City's satisfaction. All work sites shall be barricaded and or fenced until all surface restoration has been completed. Where this is not possible to complete restoration prior to permitting public access to the general area fencing etc and the necessary signage, as required to accommodate safe public passage through the area must be maintained until the restoration has been completed.

5.0 STANDARD DRAWINGS

5.01 The following City of Vernon Standard Drawings shall form part of this schedule.

Drawing No.	Drawing Description
100-1	Arterial Highway Divided 25.0 m and 30.0 m Right- of-Way
100-2	Arterial Highway Undivided 25.0 m Right-of-Way
100-3	Major Collector Highway 20.0 m Right-of-Way
100-4	Minor Collector Highway 18.5 m Right-of-Way
100-5	Industrial Highway 16.0 m Right-of-Way
100-6	Local Residential Highway 16.0 m Right-of-Way
100-16	Typical Utility Corridors Residential
100-17	Typical Utility Corridors Commercial