



Department Planning and Development	Policy No. PD 029	Page 1 of 5
Policy Title RESIDENTIAL SPRINKLER STANDARD		

Council Resolution No. 425-00 Date: September 26, 2000	GMCS	CC	Cross Reference	Effective September 26, 2000
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INTRODUCTION

Parkland County requires automatic sprinkler systems to be installed in single family dwellings within specific subdivisions in the County where acreage lot sizes are less than one (1) acre and where a municipal water system was required as a condition of subdivision approval. This standard is enforced through restrictive covenants placed on the title of each lot. The home owner shall be responsible for all aspects and costs of the design, installation and maintenance of an automatic sprinkler system in accordance with these standards.

The Standard deals with design and installation of automatic sprinkler systems for protection against the fire hazards in single family dwellings. The basis of this Standard is the National Fire Protection Association (NFPA), which is the standard-making organization that sets the guidelines for fire protection systems in Canada, "STANDARD of SPRINKLER SYSTEMS in ONE - and TWO - FAMILY DWELLINGS AND MANUFACTURED HOMES", NFPA 13D, latest edition. **NFPA 13D is to be followed with the following clarifications that are applicable to the subdivisions within Parkland County.**

Parkland County approves and may or may not inspect, or certify any installations, procedures, equipment, or materials. In determining the acceptability of installations, procedures, equipment, or materials, Parkland County requires evidence of proper design, installation, procedure or, use of equipment or material that is in compliance with NFPA 13D. Only equipment or material listed by ULC or UL may be utilized in the installation of any sprinkler system. All designers and installers must be knowledgeable of all the requirements and design philosophy of NFPA 13D.

WATER SUPPLY

Parkland County will provide to the property line of each Country Residential lot, within the subdivision, a service connection connected to a municipal water distribution system in accordance to the system outlined on the attached Figure 2. This service connection will normally be located at the front property line of the lot. The pressure contours or pressure levels indicated on the attached Figure 1 provide the available design water pressure within the subdivision during periods of peak day water use. Figure 1 also provides the size, type of material, and elevation of the service connection.

RESIDENTIAL SPRINKLER SYSTEM

A system employing automatic sprinklers attached to a piping system containing water only and connected to the municipal water distribution system so that water discharges immediately from the sprinklers opened by a fire shall be installed within the dwellings within the subdivision. All systems shall be designed and certified by a Professional Engineer registered in the Province of Alberta.

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<p>WATER SERVICE LINE</p> <p>Parkland County will provide a water connection, at the property line, in accordance with Figure 1. The water service line from this service connection to the residence shall be equal to or greater than the line size provided by Parkland County. Material used for the service line will be in accordance with NFPA 13D.</p> <p>SYSTEM DESIGN</p> <p>The residential sprinkler system design shall be in accordance with NFPA 13D and all equipment and material used shall be ULC or UL listed.</p> <p>The arrangement of connections, piping, valving, and required equipment is shown on Figure 2 and shall be in accordance with the latest version of the regulations of the Safety Codes Act.</p> <p>TESTING REQUIREMENTS</p> <p><u>Completion of Installation</u></p> <p>The residential fire sprinkler system is to be tested with a one and two sprinkler head flow test to determine if it performs as determined by design. The tests are to be performed on the most critical and remote head(s). The tests involve flowing one and two heads in calibrated buckets for a duration of 30 seconds to determine the flow rates. The flow rates and pressures are to be checked against the system design to determine if the residential fire system is performing within design values. A <u>RESIDENTIAL SPRINKLER FLOW VERIFICATION REPORT</u> is to be submitted to Parkland County upon completion of the flow test. See attached form (Figure 3).</p> <p><u>Monthly Maintenance Program</u></p> <p>The home owner should undertake a minimum monthly maintenance program:</p> <ul style="list-style-type: none">▪ visually inspect all sprinklers to ensure against obstruction of spray▪ inspect and operate all valves to assure that they are open▪ test all water flow devices▪ test the alarm system <p><u>Yearly Maintenance Program</u></p> <p>On a yearly basis the home owner should, in addition to the monthly maintenance program, operate and open the drain valve for a sufficient period of time to purge the residential sprinkler system.</p> <p>USE OF WATER</p> <p>Home owners using water from the sprinkler system drain, other than for testing and draining of the sprinkler system, shall be subject to a penalty as outlined by the County Bylaw.</p>		

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Figure 1

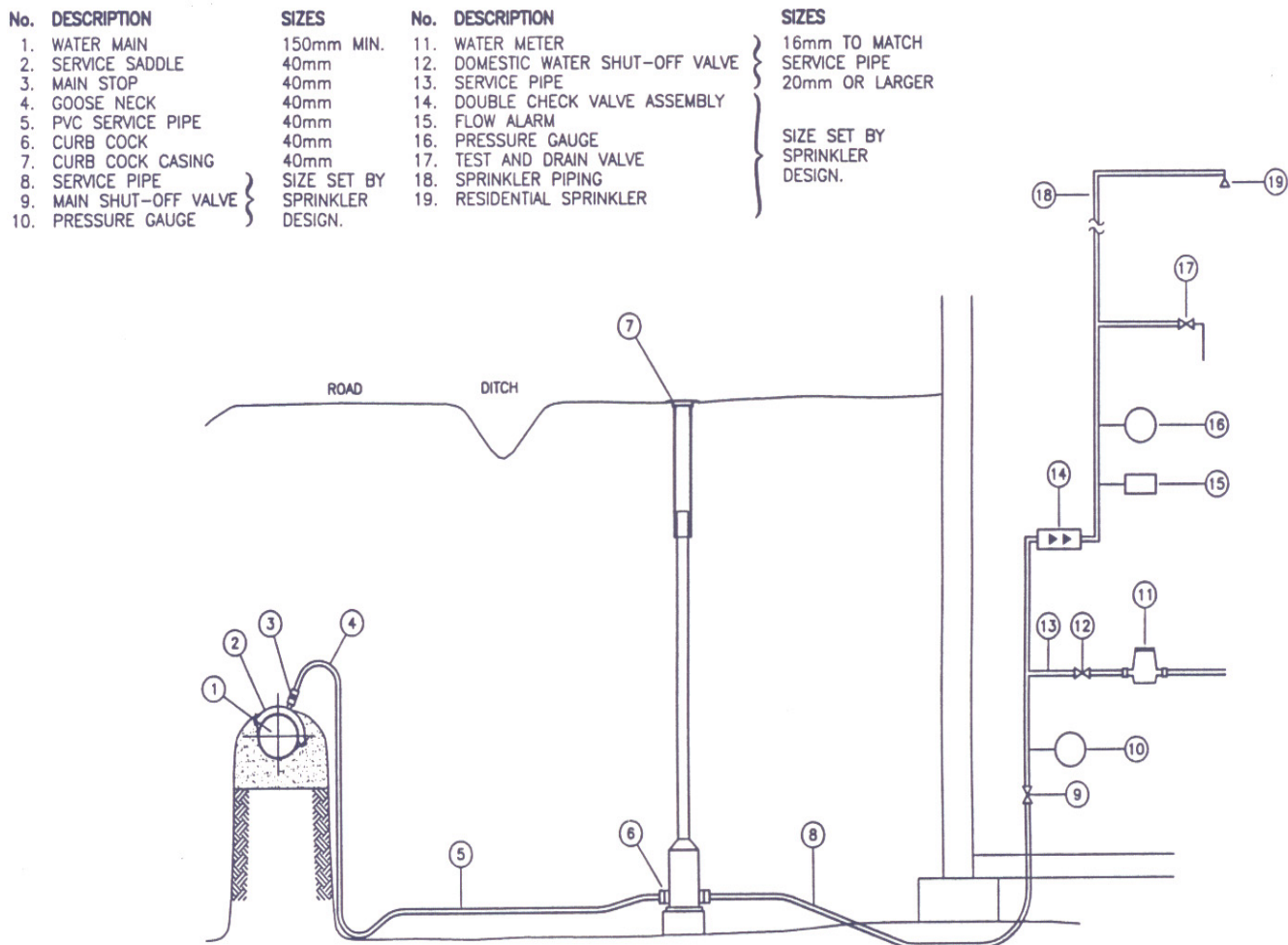
**PARKLAND COUNTY
HELENSLEA HEATH STAGE 111**

SUPPLY PRESSURE AT PROPERTY LINE

	Static Pressure at Property Line kPa	Design Service Elevation metres	Peak Day Pressure at Property Line (1) kPa	Correction Factor kPa	Service Connection Size mm	Type of Material
LOT 1	294	680.87	280	14	40 mm nominal	Polyethylene Series 160
LOT 2	293	680.94	279	14	40 mm nominal	Polyethylene Series 160
LOT 3	300	680.27	286	14	40 mm nominal	Polyethylene Series 160
LOT 4	297	680.50	283	14	40 mm nominal	Polyethylene Series 160
LOT 5	307	679.53	293	14	40 mm nominal	Polyethylene Series 160
LOT 6	315	678.70	301	14	40 mm nominal	Polyethylene Series 160
LOT 7	314	678.83	300	14	40 mm nominal	Polyethylene Series 160
LOT 8	321	678.07	307	14	40 mm nominal	Polyethylene Series 160
LOT 9	326	677.87	309	14	40 mm nominal	Polyethylene Series 160
LOT 10	329	677.25	315	14	40 mm nominal	Polyethylene Series 160
LOT 11	328	676.34	314	14	40 mm nominal	Polyethylene Series 160
LOT 12	338	676.31	324	14	40 mm nominal	Polyethylene Series 160
LOT 13	335	676.65	321	14	40 mm nominal	Polyethylene Series 160
LOT 14	344	675.74	330	14	40 mm nominal	Polyethylene Series 160
LOT 15	344	675.75	330	14	40 mm nominal	Polyethylene Series 160
LOT 16	342	675.91	328	14	40 mm nominal	Polyethylene Series 160
LOT 17	347	675.47	333	14	40 mm nominal	Polyethylene Series 160
LOT 18	342	675.93	328	14	40 mm nominal	Polyethylene Series 160
LOT 19	346	675.50	332	14	40 mm nominal	Polyethylene Series 160
LOT 20	344	675.68	330	14	40 mm nominal	Polyethylene Series 160
LOT 21	345	675.60	331	14	40 mm nominal	Polyethylene Series 160
LOT 22	348	675.29	334	14	40 mm nominal	Polyethylene Series 160
LOT 23	344	675.76	330	14	40 mm nominal	Polyethylene Series 160
LOT 24	351	675.00	337	14	40 mm nominal	Polyethylene Series 160
LOT 25	342	675.94	328	14	40 mm nominal	Polyethylene Series 160
LOT 26	349	675.22	335	14	40 mm nominal	Polyethylene Series 160
LOT 27	343	675.87	329	14	40 mm nominal	Polyethylene Series 160
LOT 28	349	675.24	335	14	40 mm nominal	Polyethylene Series 160
LOT 29	347	675.37	333	14	40 mm nominal	Polyethylene Series 160
LOT 30	350	675.14	336	14	40 mm nominal	Polyethylene Series 160
LOT 31	350	675.13	336	14	40 mm nominal	Polyethylene Series 160
LOT 32	357	674.38	343	14	40 mm nominal	Polyethylene Series 160
LOT 33	350	675.14	336	14	40 mm nominal	Polyethylene Series 160
LOT 34	367	673.40	353	14	40 mm nominal	Polyethylene Series 160
LOT 35	348	675.35	334	14	40 mm nominal	Polyethylene Series 160
LOT 37	350	675.13	336	14	40 mm nominal	Polyethylene Series 160
LOT 39	356	674.45	342	14	40 mm nominal	Polyethylene Series 160
LOT 43	375	672.53	361	14	40 mm nominal	Polyethylene Series 160
LOT 44	323	677.82	309	14	40 mm nominal	Polyethylene Series 160
LOT 45	318	678.36	304	14	40 mm nominal	Polyethylene Series 160
LOT 46	325	677.65	311	14	40 mm nominal	Polyethylene Series 160
LOT 47	321	678.10	307	14	40 mm nominal	Polyethylene Series 160
LOT 48	327	677.49	313	14	40 mm nominal	Polyethylene Series 160

(1) Based on supply pressure of 380 kPa at Temporary Water Reservoir Site and Peak Day Water Demand of 4.4 litres per second thru distribution system consisting of 1464 metres of 200 mm and 808 metres of 150 mm watermain. Supply pump elevation 672.050.

Figure 2



**PARKLAND COUNTY
RESIDENTIAL SPRINKLER SYSTEM SCHEMATIC**

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Figure 3

RESIDENTIAL SPRINKLER FLOW VERIFICATION REPORT

Address: _____ Date: _____ Time: _____
 Contractor: _____ Permit: _____
 Approved Certificate Number: _____ Inspector: _____

SYSTEM DESIGN INFORMATION - NFPA 13D

Piping Drawings Available: _____ Yes _____ No
 Sprinkler A Type: _____ Manufacturer: _____ Model: _____ K Factor: _____
 Sprinkler B Type: _____ Manufacturer: _____ Model: _____ K Factor: _____
 Design Spacing A: _____ x _____ Static Gauge Pressure: _____ kPa @ _____ metre elev.
 Static Pressure @ Street _____ kPa - Peak Day Pressure* _____ kPa = Correction Factor** _____ (kPa)
 Design Spacing B: _____ x _____ Static Gauge Pressure: _____ kPa @ _____ metre elev.
 Static Pressure @ Street _____ kPa - Peak Day Pressure* _____ kPa = Correction Factor** _____ (kPa)

* Refer to Figure 1
 ** If Correction Factor Negative Use 0.0

TEST #1 ONE HEAD FLOWING 30 SECONDS

Head Location: _____ Reference Pt: _____ Sprinkler A/B
 Amount of Water Flowed: _____ litres
 Residual Gauge Pressure: _____ kPa - Correction Factor _____ kPa = Corrected Pressure (kPa) _____

TEST #2 TWO HEADS FLOWING 30 SECONDS

Head 1 Location: _____ Reference Pt: _____ Sprinkler A/B
 Head 2 Location: _____ Reference Pt: _____ Sprinkler A/B
 Amount of Water Flowed: Head 1: _____ litres
 Head 2: _____ litres
 Residual Gauge Pressure: _____ kPa - Correction Factor _____ kPa = Corrected Pressure (kPa) _____

CONCLUSIONS

TEST #1

Required Flow: _____ litres per minute
 Obtained Flow: _____ litres per minute
 Required Pressure: _____ kPa
 Corrected Pressure: _____ kPa

Passed: _____ Failed: _____

TEST #2

Required Flow: _____ litres per minute
 Obtained Flow: _____ litres per minute
 Required Pressure: _____ kPa
 Corrected Pressure: _____ kPa

Passed: _____ Failed: _____

NOTES:

SIGNATURES

Contractor _____

Certified Inspector/Professional Engineer _____

ATTACHMENT