
APPENDIX 1

PARKLAND COUNTY RESIDENTIAL SPRINKLER STANDARD

INTRODUCTION

Parkland County requires automatic sprinkler systems to be installed in single family dwellings within specific subdivisions within the County where acreage lot sizes are less than 1 acre and where a municipal water system was required as a condition of subdivision approval. The home owners 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 standards 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 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.

WATER SERVICE LINE

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.

SYSTEM DESIGN

The residential sprinkler system design shall be in accordance with NFPA 13D and all equipment and material used shall be ULC or UL listed.

The arrangement of connection, 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.

TESTING REQUIREMENTS

Completion of Installation

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 RESIDENTIAL SPRINKLER FLOW VERIFICATION REPORT is to be submitted to Parkland County upon completion of the flow test. See attached form.

Monthly Maintenance Program

The home owner should undertake a minimum monthly maintenance program:

- 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

Yearly Maintenance Program

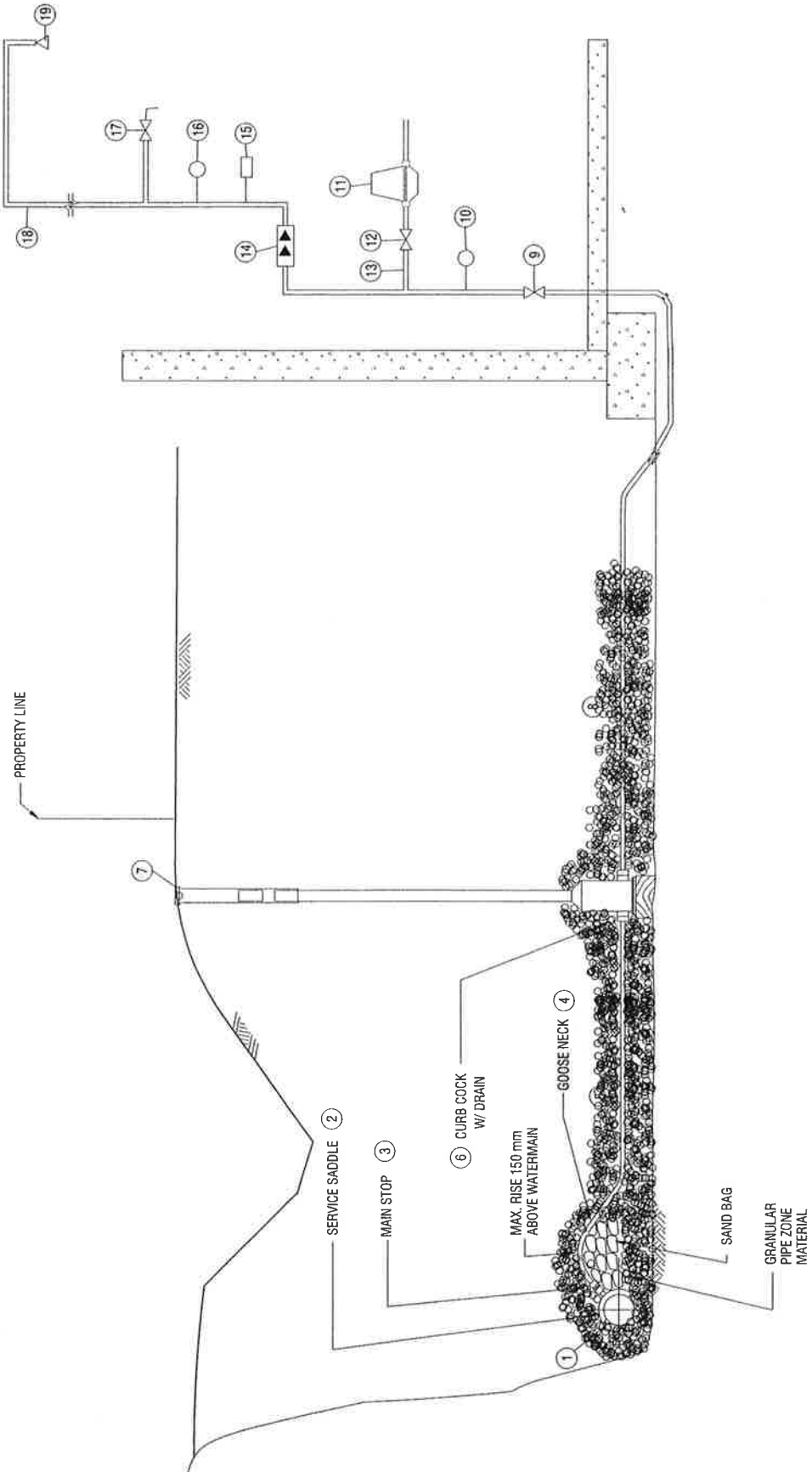
On a yearly basis the home owner should, in addition to the monthly maintenance program, operate and open the drain valve for a sufficient period of time to purge the residential sprinkler system.

USE OF WATER

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.

PARKLAND COUNTY TYPICAL SUBDIVISION PRESSURE CHART SUPPLY PRESSURE AT PROPERTY LINE							
	Static Pressure at Property Line	Design Service Elevation	Peak Day Pressure at Property Line (1)	Correction Factor	Service Connection Size	Type of Material	Distance Watermain to Property Line
	KPA	meters	kPa	kPa	mm (I.D.)		
Lot 1	397	680.97	383	14	38mm	HDPE	13m
Lot 2	396	680.94	382	14	38mm	HDPE	12m
Lot 3	403	680.27	389	14	38mm	HDPE	18m
Lot 4	400	680.50	386	14	38mm	HDPE	12m
Lot 5	410	679.53	396	14	38mm	HDPE	18m
Lot 6	418	678.70	404	14	38mm	HDPE	12m
Lot 7	418	678.83	403	14	38mm	HDPE	15m
Lot 8	424	678.07	410	14	38mm	HDPE	18m
Lot 9	426	677.87	412	14	38mm	HDPE	10m
Lot 10	432	677.25	418	14	38mm	HDPE	12m
Lot 11	431	677.34	417	14	38mm	HDPE	18m
Lot 12	441	676.31	427	14	38mm	HDPE	18m
Lot 13	438	676.65	424	14	38mm	HDPE	13m
Lot 14	447	675.74	433	14	38mm	HDPE	12m
Lot 15	447	675.75	433	14	38mm	HDPE	18m
Lot 16	445	675.91	431	14	38mm	HDPE	12m
Lot 17	450	675.47	436	14	38mm	HDPE	20m
Lot 18	445	675.93	431	14	38mm	HDPE	12m
Lot 19	449	675.50	435	14	38mm	HDPE	19m
Lot 20	447	675.68	433	14	38mm	HDPE	12m
Lot 21	448	675.60	434	14	38mm	HDPE	18m
Lot 22	451	675.29	437	14	38mm	HDPE	12m
Lot 23	447	675.76	433	14	38mm	HDPE	18m
Lot 24	454	675.00	440	14	38mm	HDPE	15m
Lot 25	454	675.00	440	14	38mm	HDPE	15m

- (1) Based on supply pressure of 483 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 of 672.050.
- (2) Service pipe material is Series 160 HDPE DR 11



No.	DESCRIPTION	SIZES	No.	DESCRIPTION	SIZES
1.	WATER MAIN	150mm MIN.	11.	WATER METER	16mm TO MATCH SERVICE PIPE
2.	SERVICE SADDLE	40mm	12.	DOMESTIC WATER SHUT-OFF VALVE	20mm OR LARGER
3.	MAIN STOP	40mm	13.	SERVICE PIPE	
4.	GOOSE NECK	40mm	14.	DOUBLE CHECK VALVE ASSEMBLY	
5.	HDPE SERVICE PIPE	40mm	15.	FLOW ALARM	SIZE SET BY SPRINKLER DESIGN
6.	CURB COCK	40mm	16.	PRESSURE GAUGE	
7.	CURB COCK CASING	40mm	17.	TEST AND DRAIN VALVE	
8.	SERVICE PIPE	40mm	18.	SPRINKLER PIPING	
9.	MAIN SHUT-OFF VALVE	SIZE SET BY SPRINKLER DESIGN	19.	RESIDENTIAL SPRINKLER	
10.	PRESSURE GAUGE				

PARKLAND COUNTY

TYPICAL SPRINKLER SYSTEM SCHEMATIC

DATE	APRIL 1999	DRAWN BY	WAYNE TELLIER	DRAWING
SCALE	N.T.S.	CHECKED BY	W.S.S.	Fig 2
			APPROVED	

DIMENSIONS SHOWN IN METRES

RESIDENTIAL SPRINKLER FLOW VERIFICATION REPORT

Address: _____
Contractor: _____
Approved Certificate Number: _____

Date: _____ Time: _____
Permit: _____
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
Residential Gauge Pressure: _____ kPa - Correction Factor _____ kPa = Correction Pressure (kPa) _____

TEST # 2 TWO HEAD 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
Residential Gauge Pressure: _____ kPa - Correction Factor _____ kPa = Correction Pressure (kPa) _____

CONCLUSIONS

TEST #1

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

TEST #2

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

Passed: _____ Failed: _____

Passed: _____ Failed: _____

NOTES:

SIGNATURES

Contractor

Certified Inspector/Professional Engineer