

BYLAW 79-2005

A BYLAW OF STRATHCONA COUNTY IN THE PROVINCE OF ALBERTA, FOR THE PURPOSE OF ADOPTING THE ESTATES AT CRIMSON LEAF AREA STRUCTURE PLAN.

WHEREAS it is deemed advisable to adopt the Estates at Crimson Leaf Area Structure Plan.

NOW THEREFORE, the Council of Strathcona County, pursuant to the authority conferred upon it by the *Municipal Government Act, R.S.A. 2000 c.-M-26* and amendments thereto, enacts as follows:

1. That Bylaw 79-2005 is to be cited as "The Estates at Crimson Leaf Area Structure Plan".
2. That Schedule "A" attached hereto is hereby adopted as part of this Bylaw.

Read a first time this 20 day of September, 2005.

Read a second time this 20 day of September, 2005.

Read a third time and finally passed this 20 day of September, 2005.

Cathy Oleson

Mayor

[Signature]
Manager,
Legislative and Legal Services

Date Signed: September 26, 2005

The Estates at
CRIMSON LEAF

AREA STRUCTURE PLAN

STRATHCONA COUNTY

August 2005



Scheffer Andrew Ltd.
Planners & Engineers

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1 INTRODUCTION

This area structure plan provides guidance for a municipally serviced (water and sanitary) country residential development on SW 8-52-22-W4 in Strathcona County. The name proposed for this development is *The Estates at Crimson Leaf*.

The Estates at Crimson Leaf Area Structure Plan has been developed with particular care for the preservation and integration of the natural wetland, significant tree stands, existing topography, and provision for wildlife movement corridors within the plan area. The design is intended to create a sustainable interface between the human and the natural environments.

To further the environmentally conscience design of this development, the developer has committed to require the utilization of geothermal heating / cooling for all residential dwellings within the Estates at Crimson Leaf. This technology eliminates the dependency on natural gas for heating / cooling purposes, reducing or eliminating the combustion of fossil fuels for domestic reasons. For a development the size of the proposed Estates at Crimson Leaf, this will translate into a substantial reduction in the amount of greenhouse gases released annually.

2 LOCATION

The subject land (approximately 64 ha) is located approximately 5 km southeast of Sherwood Park, south of Laurina Estates country residential development. It is bound on the west by Range Road 225, on the north by Laurina Estates, and on the south by Springhill Park (country residential). This area is 1.6 km east of the intersection of Highway 21 and Secondary Highway 628.

3 FACTORS INFLUENCING DEVELOPMENT

3.1 Policy Context

3.1.1 Municipal Government Act

This area structure plan meets the provincial requirements outlined in Section 633 of the MGA. Land use, population density, transportation routes and utilities, and development sequence are addressed within the framework of this area structure plan.

3.1.2 Municipal Development Plan

The Strathcona County Municipal Development Plan (MDP), Bylaw 38-98 as amended, designates the plan area as Country Residential Policy Area. Applicable policies were reviewed during the development of this area structure plan. The policy and concepts proposed within this plan are in general compliance with the approved policy of the MDP.

3.1.3 Land Use Bylaw

The Land Use Bylaw (No. 8-2001) presently districts SW 8-52-22-W4 as Agricultural: General District (AG). An amendment to the land use bylaw, redistricting the land to Country Residential (RC), will be required prior to subdivision. This district provides for the development of residential lots with a minimum size of 0.8 ha.

3.1.4 Strathcona County Servicing Strategy

This plan meets the objectives of the recently adopted policy. This area structure plan requires the connections to both an offsite wastewater treatment system and the municipal water system.

3.2 Ownership

The subject land is owned by 1107844 Alberta Ltd., the proponent of this area structure plan.

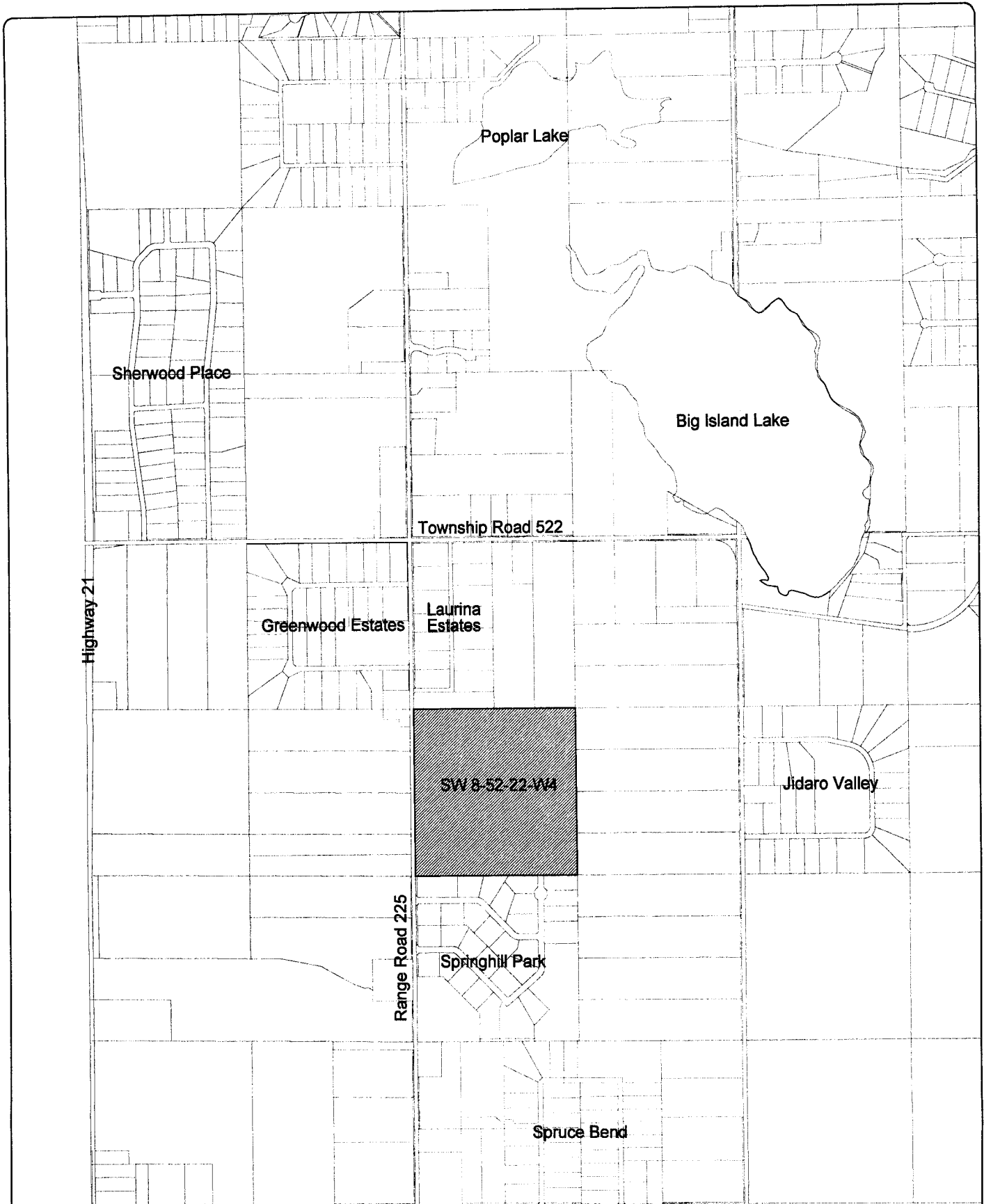
3.3 Resource Extraction

Information received from the Alberta Energy Utilities Board (July 2004) indicated that there are no sour gas facilities in the vicinity of the proposed development and that there are no active wells within 100m of the area structure plan area.

3.4 Adjacent Land Use

There are several existing country residential developments adjacent the plan area. To the south is the Springhill Park country residential subdivision, Greenwood Estates is to the northeast, and Laurina Estates is directly north. The remainder of the adjacent lands is presently in agricultural small holdings of 40 acre lots.

The southern lot in Laurina Estates is dedicated as municipal reserve and is presently in a natural state with dense tree cover. The agricultural lots to the north and east are also in a relatively natural state with substantial tree cover.



**Area Structure Plan
Crimson Leaf**

**Figure 1
Location Plan**



3.5 Existing Land Use

The land is presently used as pasture for cattle. The existing farmstead in the southwest of the plan area will not be retained. All structures will be removed with the development of the area for country residential lots.

The existing features are illustrated in Figure 2.

3.6 Natural Features

The topography of the site is hummocky with numerous hills and depressions with isolated wetlands scattered throughout the quarter section. As illustrated in Figure 3, there is topographic relief of approximately 10 m in the area with the lowest area in the west central part of the site and the high area in the southeast.

The surficial geology of the subject land is characterized by stagnation moraine glacial deposits. This material is frequently associated with areas of shallow water tables. In July 2004 Sabatini Earth Technologies Inc. prepared a report identifying areas of shallow groundwater tables (a copy submitted under separate cover). This report identified approximately one third of the subject lands as low wet areas with a water table depth of less than 2.5 m. Further analysis of the data identified areas where the depth to water table was less than the County required 2.0m. The areas with a water table depth less than 2.0m are shown in Figure 4.

In May and June 2004, Spencer Environmental Management Services Ltd. (Spencer) conducted a biophysical assessment for the subject lands. The biophysical assessment report has been submitted to the County under separate cover.

The biophysical assessment notes that the subject parcel consists largely of a patchwork of forest and wetland in a matrix of open pasture. Approximately fifty percent of the uplands in the study area have been cleared for pasture. The remaining natural vegetation is characteristic of the dry mixed wood subregion. Aspen and/or balsam poplar woodlands dominate the uplands. The wetlands include shallow marshes and wet meadow communities.

Spencer states that the "mosaic of upland and wetland habitat types present, the hydrological connectivity, the abundant natural vegetation remaining on adjacent lands, and the relative absence of roads all interact to result in the presence of productive, diverse, well-connected, currently sustainable vegetation and wildlife communities on the subject parcel. The presence of pasture scattered throughout the parcel, the convoluted shapes of the remaining tree stands and the current and past agricultural land use has, however, led to a relatively high incidence and prevalence of weedy exotic species, an

abundance of edge habitat that is highly suitable for commonly-occurring generalist plant and wildlife species and less suitable for more sensitive, forest interior species.”

The biophysical assessment concludes that the subject parcel is currently an ecologically valuable, diverse mix of rural/natural environment that is best suited to and likely well used by a suite of rural-tolerant, generalist wildlife species and that the large wetlands in the west are a somewhat degraded but highly functioning wetland complex.

The biophysical resources on the property that most merit retention are the existing surface drainage patterns, including those leading off-site, the large wetland complex on the west, and the sizeable rectangular woodland in the southeast plan area.

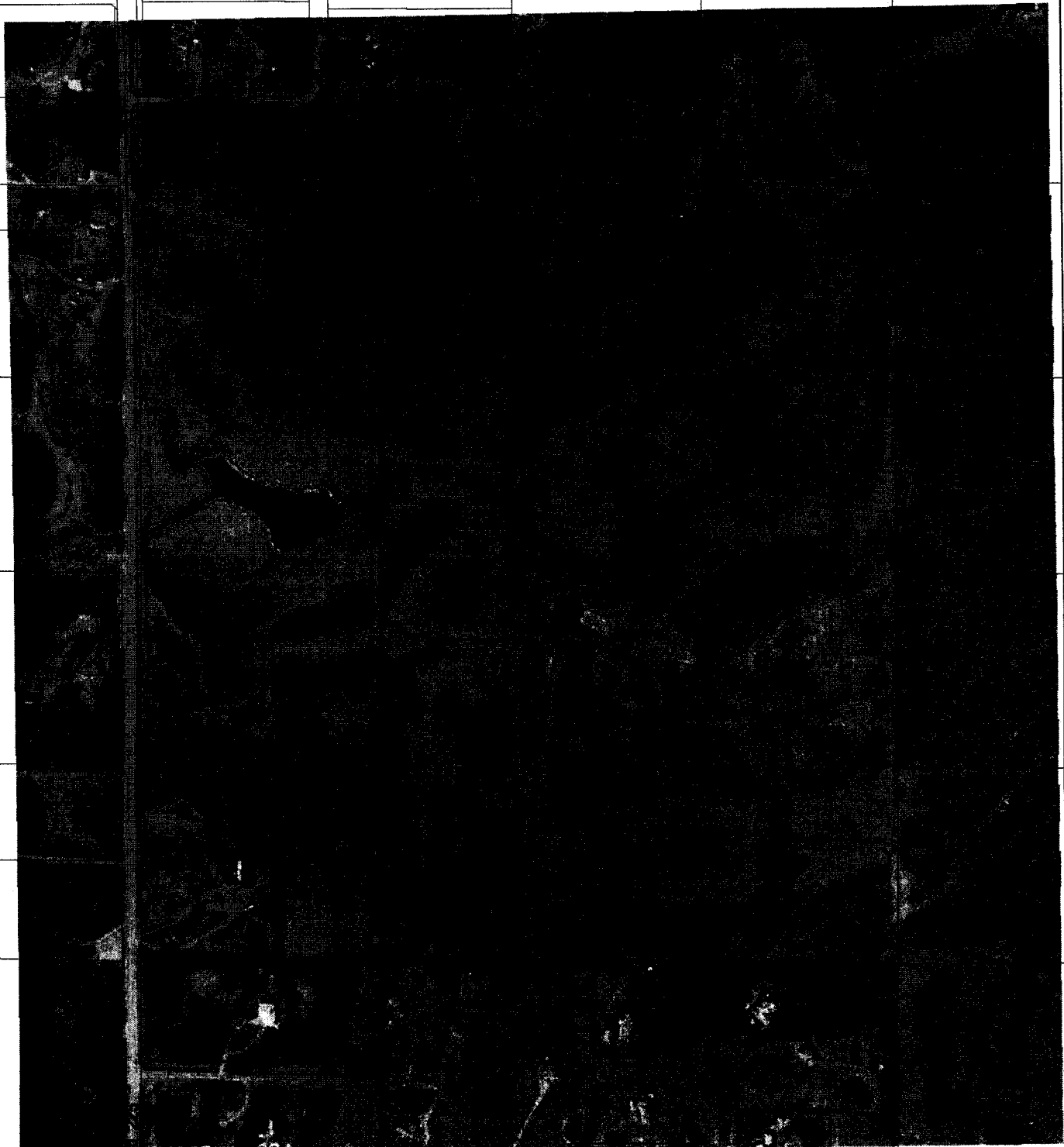
3.7 Access

The subject land has immediate access available from Range Road 225. There are presently two accesses into the plan area; a driveway at the south to the existing farmstead and an access to the field near the NW property line.

County standards will permit two accesses into the plan area.

3.8 Historical/Cultural Resources

In a letter dated September 27, 2004 Alberta Community Development indicated that a Historical Resource Impact Assessment is not required and granted Historical Resources Act clearance.



Range Road

Springhill Park

Springhill Crescent

**Area Structure Plan
Crimson Leaf**

**Figure 2
Existing Features**

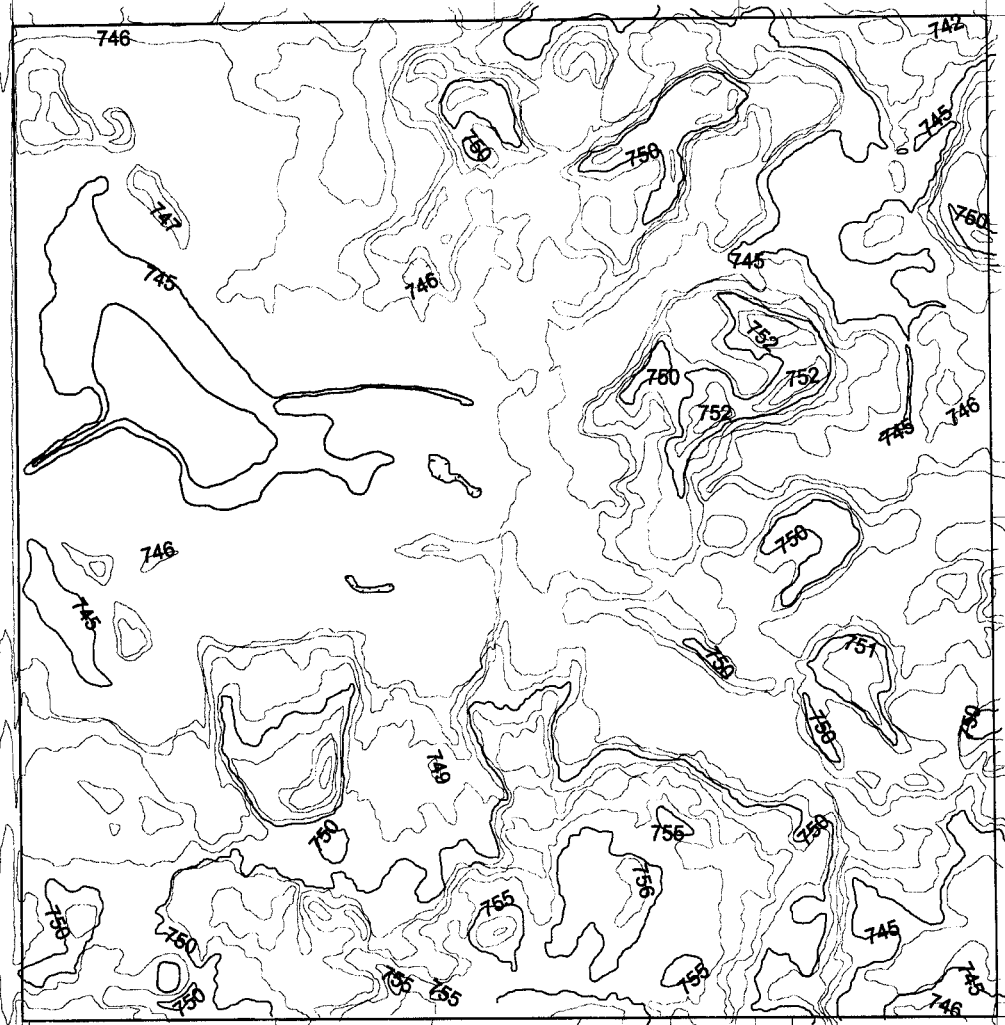


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Laurina Estates



Range Road 225

Springhill Park

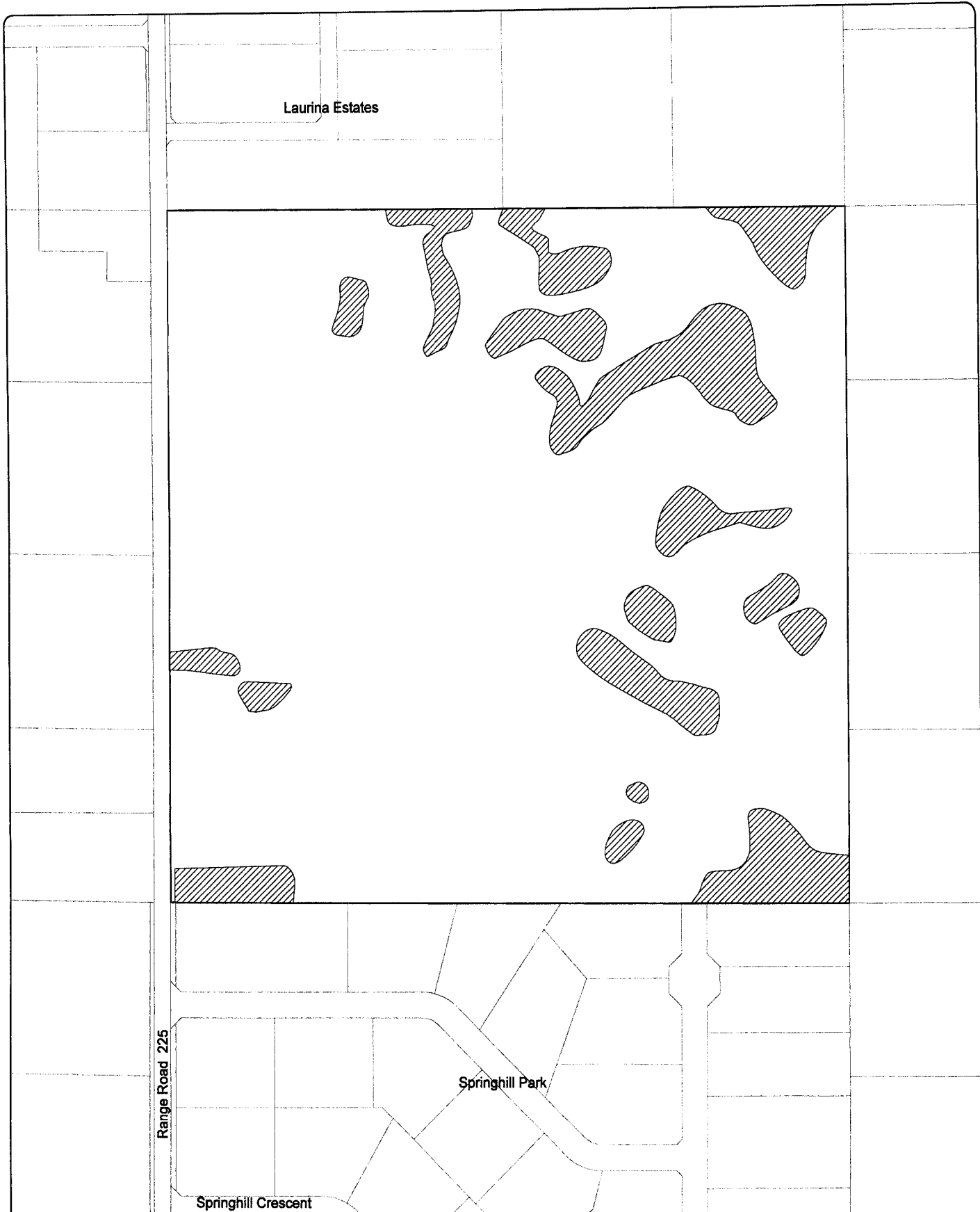
Springhill Crescent

Area Structure Plan
Crimson Leaf

Figure 3
Topography

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**Area Structure Plan
Crimson Leaf**
Figure 4
Shallow Water Table Areas

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Based on information provided by Sabatini Geotechnical



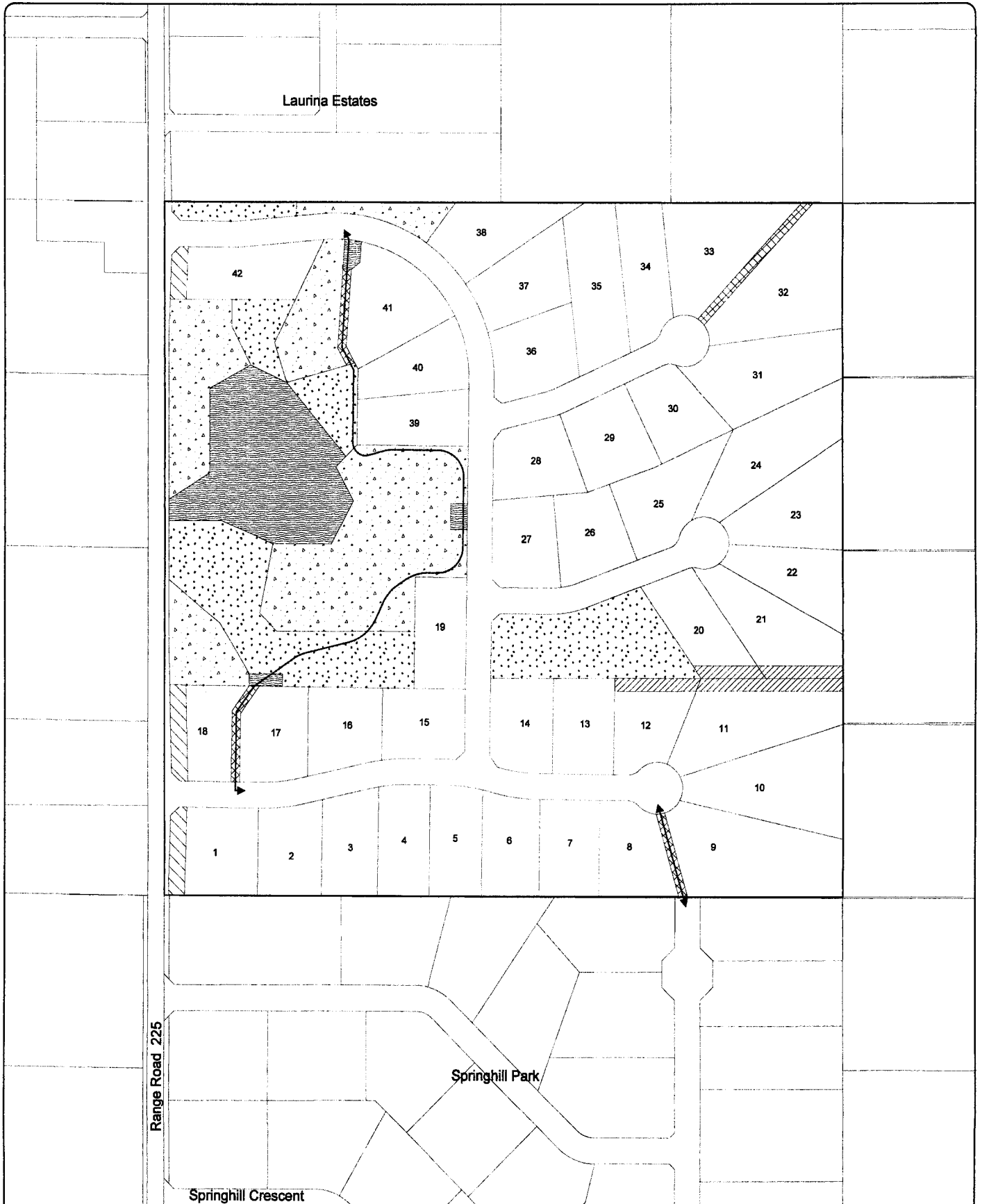
4 DEVELOPMENT CONCEPT

The development concept was designed with regard to the recommendations of the biophysical assessment, and in consultation with Spencer Environmental Management Services Ltd. regarding the integrity of the natural features to be preserved. The site topography was also considered in the proposed pattern of local roads.

The development concept is shown in Figure 5 and the associated land use statistics are provided in the following table. Future residential subdivision and dedication of public land (municipal and environmental reserve, public utility lots) will be in general compliance with the concept but are subject to refinements with subdivision application and detailed engineering.

Land Use Statistics Table

Use	Area (Ha)	% of GDA
<i>Gross Area</i>	64.7	
Road Widening (RR 225)	0.4	
Environmental Reserve	7.4	
<i>Gross Developable Area</i>	56.9	100%
Municipal Reserve	5.7	10%
Public Utility Lots	3.3	6%
Internal Circulation	7.0	12%
Residential	40.9	72%
<i>Conservation Easement (Part of Residential)</i>	0.7	1%
Proposed Lots	42	
Projected Population	134	(proposed lots x 3.2 people per dwelling)



**Area Structure Plan
Crimson Leaf**

**Figure 5
Development Concept**

- Residential
- Noise Attenuation Berm (Private Land)
- Municipal Reserve
- Environmental Reserve
- Conservation Easement Area
- Access / Drainage PUJ
- Public Utility Lot
- Pedestrian Trail

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4.1 Integration With Natural Features

The biophysical analysis notes several recommended measures that could be undertaken to facilitate the development of a country residential subdivision that incorporates some of the identified biophysical resources and maintains the existing ecological connectivity.

The large natural wetland feature in the west central portion of the plan area was identified as the main conservation concern within the plan area. Although the existing natural water body will be expanded and used for storm water management purposes, the proposed storm water management system (including three sedimentation ponds) has been designed to retain the functionality of the wetland. The wetland is dedicated as a combination of public utility lot (open water area) and environmental reserve (shallow marsh and wet meadows) and a substantial upland area has been dedicated as municipal reserve to maintain an upland wildlife habitat adjacent the wetland and serve as a wetland buffer.

The retention of the woodland in the southeast plan area, particularly the identified birch stand, was also recommended. The development concept was designed such that all of the birch stand can be retained, unaltered, within a proposed municipal reserve lot. It has been agreed that the County will not develop trails or conduct any clearing on this environmental feature.

Spencer Environmental identified the site as suitable for wildlife movement and indicated connectivity with adjacent lands. The development concept attempts to maintain this connectivity to the adjacent lands with the provision of two specific wildlife movement corridors. The primary corridor connects the wetland complex through the retained birch stand and forested lands to the east of the quarter section. A second minor corridor connects the wetland complex to the existing municipal reserve in Laurina Estates and the treed area east of that subdivision. The connection to the north will be established through the dedication of municipal and environmental reserve at the north boundary of the subject parcel.

The figure presented in the Appendix illustrated the specific vegetation areas identified in the biophysical analysis and the areas to be preserved as public land and through conservation easements. Wildlife movement corridors are also illustrated on this drawing.

4.1.1 Country Residential

Residential development within the plan area will comply with the development regulations of the RC Country Residential District in the County's Land Use Bylaw. Associated subdivision applications will create country residential lots (minimum size of 0.8 ha), generally as illustrated in this plan.

Although each residential lot has a substantial developable area, a limited amount of engineered fill may be utilized on some lots to establish a more desirable building location (or to avoid large tree stands). Figure 6 identifies the developable area for each of the proposed country residential lots.

Conservation easements will be registered on each lot that contains a portion of the identified wildlife movement corridor. This easement will prohibit any development (including fencing), the alteration of existing vegetation, and the addition of non-native vegetation, within the identified conservation easement.

The retention of trees outside of the chosen building pocket is encouraged throughout the plan area and will be requested through architectural controls.

4.1.2 Municipal Reserve

The municipal reserve provided within the plan area has been dedicated to enhance the land provided as environmental reserve, preserve an identified birch stand, and provide connectivity to the north and east. This future dedication will provide a buffer between the residential uses and the environmental feature in addition to providing a larger contiguous area that can be retained in a natural state.

On uplands that will become municipal reserve it will initially be necessary to manage vegetation to promote establishment of natural vegetation and control weeds.



4.2 Transportation

Two accesses to the internal road network will be provided from Range Road 225. All country residential lots will have access from local roads within the subdivision - individual accesses to Range Road 225 will not be permitted.

Emergency/pedestrian accesses have been provided to Springhill Park (to the south) and to potential future development east of Laurina Estates (north) with an 8.0 m right-of-way.

Road widening of 5.0 m has been identified along the east side of Range Road 225 and will be dedicated at the time of subdivision.



 Depth to water table less than two meters
 Contiguous developable area

**Area Structure Plan
Crimson Leaf**

**Figure 6
Developable Areas**

Local roads within the subdivision will be constructed to a rural standard, on a 30 m right-of-way. Entrances to the development from Range Road 225 may be constructed with a wider right-of-way to allow for special aesthetic treatments such as a landscaped centre median.

4.3 Utility Servicing

4.3.1 Water Supply

The proposed development will be connected to the municipal water system. The existing municipal system will be extended south under existing County roads to the southern entrance to Crimson Leaf and into the plan area. This water service will be provided as a low-pressure system with each property requiring a cistern.

The water system will be built to municipal standards. The proposed onsite water distribution system alignment is illustrated in Figure 7.

4.3.2 Sanitary

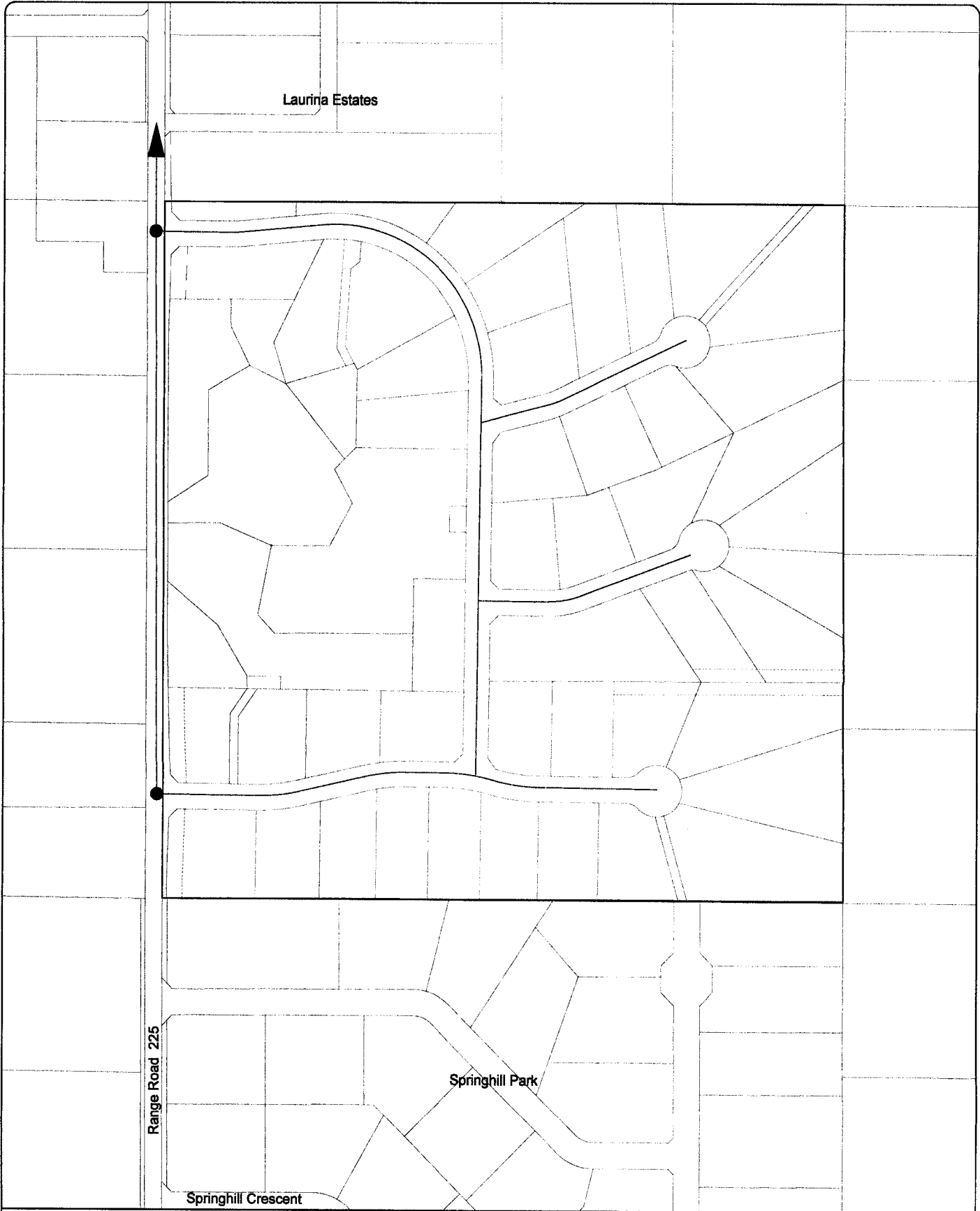
The proposed development will be connected to an off-site municipal sanitary system via the Septic Tank Effluent Pump (STEP) System. This system requires each residence to have a septic tank and pump. Clear effluent is pumped from the septic tank through a pressurized sanitary sewer to an urban system for treatment. The existing municipal sanitary sewer will be extended south from the Lorrelind Estates subdivision within the Range Road 225 right-of-way into the Crimson Leaf plan area.

The sanitary system will be designed in consultation with County administration and be built to municipal standards. The general alignment of the sanitary sewer is illustrated in Figure 8.

4.3.3 Storm Water Management

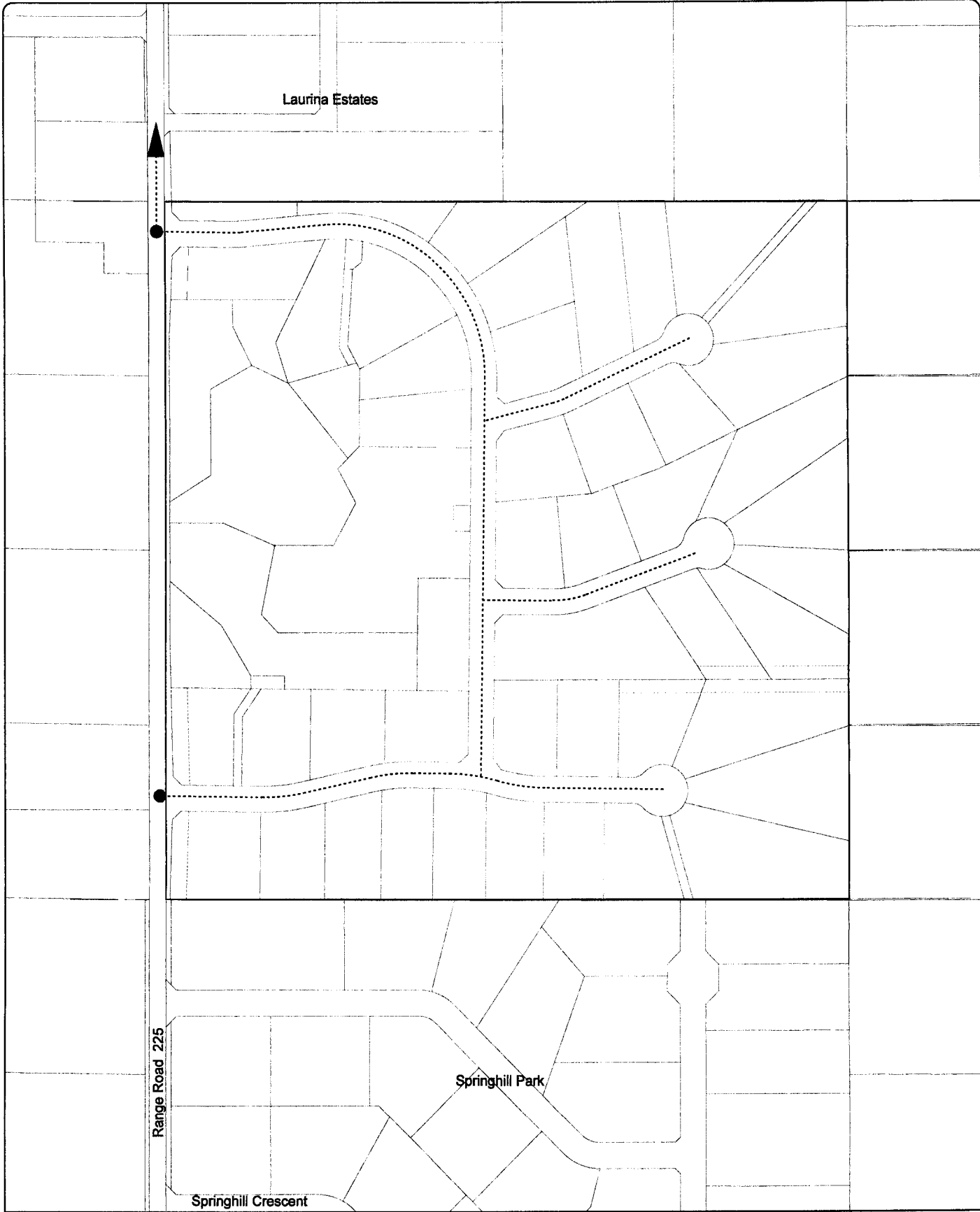
The storm water management plan was developed by Sameng Inc. and was presented in a design brief (submitted under separate cover). This report identified three drainage basins within the area structure plan lands – two naturally draining to the east and one to the west.

To mitigate the anticipated 25% increase to runoff volume that is expected to result from this development, the eastern drainage basin areas were reduced by 25%, which will maintain runoff volumes to pre-development rates. This drainage basin reduction will be achieved through the use of drainage ditches. Storm water runoff in this reduced basin area will continue to drain eastward through natural drainage flow paths.



**Area Structure Plan
Crimson Leaf**

**Figure 7
Water Distribution System**



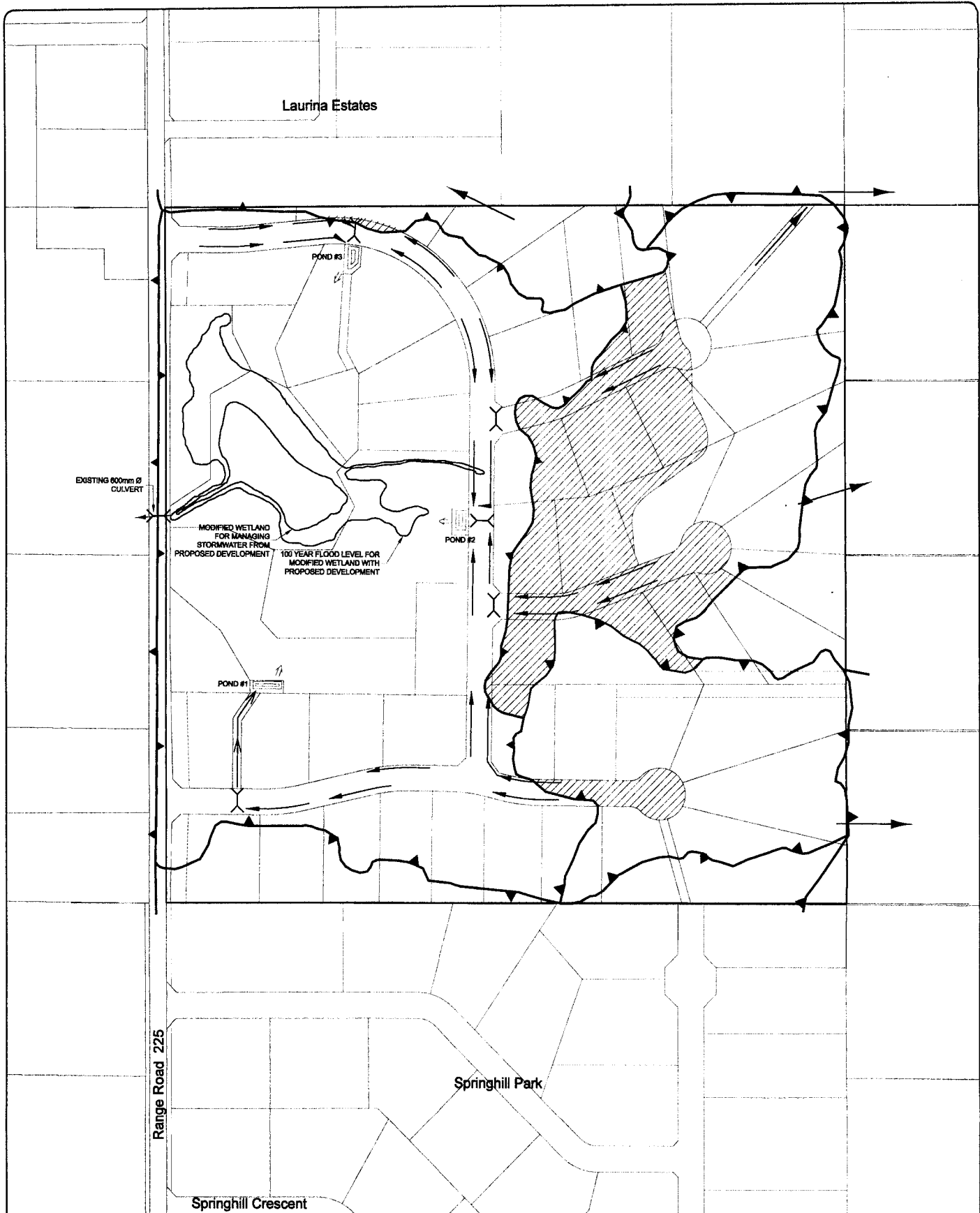
**Area Structure Plan
Crimson Leaf**







**Figure 8
Sanitary System**

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- Sanitary Sewer Lines
- Future Connections





- Legend:
-  Drainage Divide
 -  Eastern drainage areas changed to drain west into wetland (See stormwater report)
 -  Road Ditch
 -  Drainage Ditch
 -  Overland Flow
 -  Natural Flow Path
 -  Sedimentation Ponds

Area Structure Plan
Crimson Leaf
 Figure 9
 Storm Water Management

The increased runoff volumes in the developed and expanded western drainage basin will be directed to the large wetland, which will be modified to provide sufficient storage. Storm water in the western basin will be collected in roadside ditches and drainage channels and directed through one of three sedimentation ponds before entering the modified wetland. The wetland has been designed to handle the 1:100 year event. The storm water will be released, at pre-development rates, west through the existing culvert under Range Road 225 into the existing drainage course. The proposed storm water management concept represents a compromise that provides the required storage, minimizes impacts on the wetland, and considers historical wetland conditions.

The proposed storm water management system is illustrated in Figure 9.

4.3.4 Geothermal Energy

Every residential lot will be required to utilize geothermal energy for heating / cooling the dwelling unit. The use of this technology for heating, cooling, and water heating purposes has the potential to eliminate, or at least significantly reduce, the residential occupant's dependence on natural gas. This will substantially reduce the amount of greenhouse gases released through the consumption of non-renewable resources.

4.3.5 Shallow Utilities

Gas, electricity, and telephone servicing for the plan area is presently available within adjacent roadways, and will be extended into the proposed development. Alignment of these utilities within the plan area will be in accordance with County standards.

5 DEVELOPMENT SEQUENCE

Figure 10 illustrates the proposed staging for the development.

Stage 1 will be started first, with the remaining stages, which may be developed together, being subdivided, registered, and developed as per market demand.

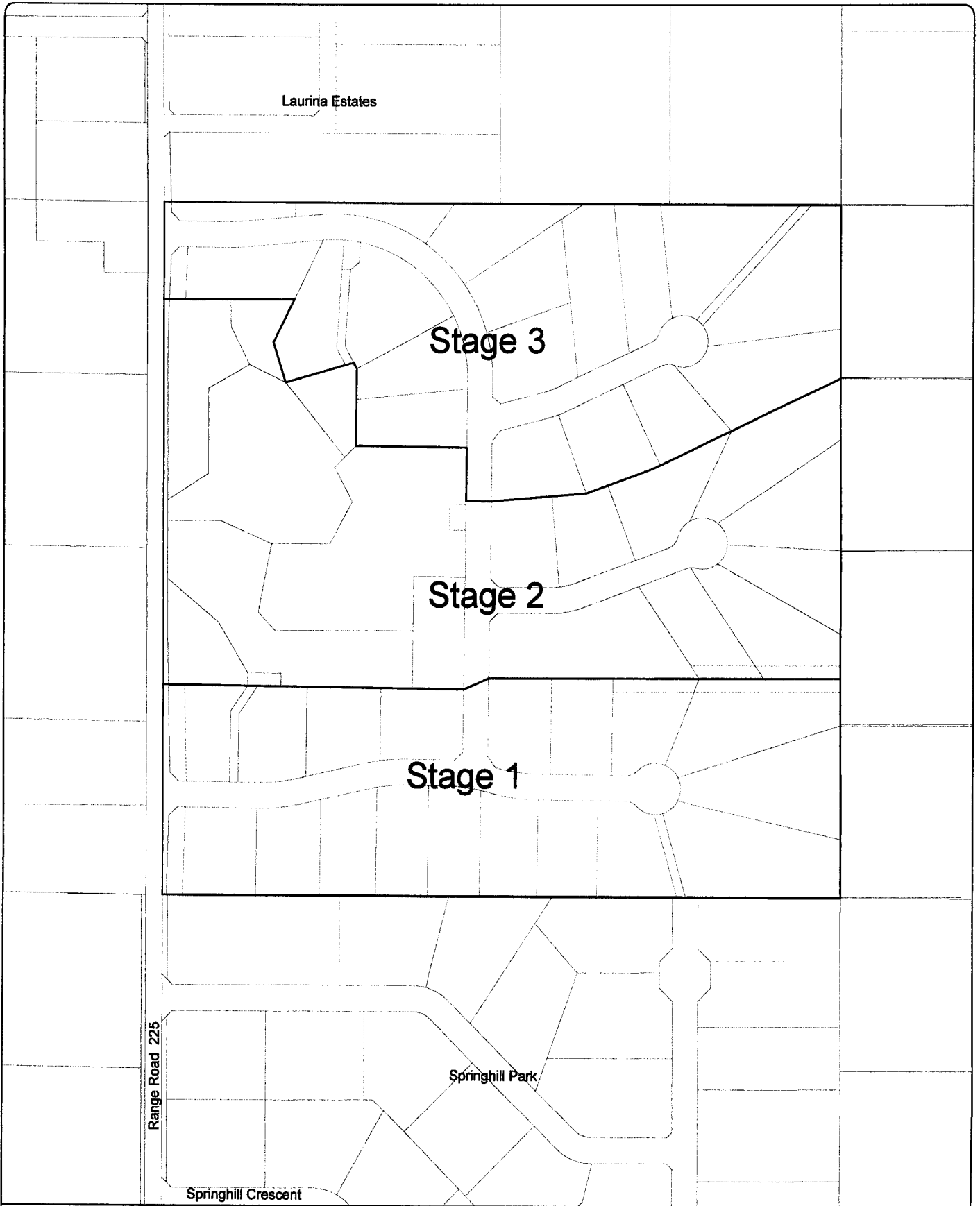
6 RATIONALE

The subject land has been identified in the Municipal Development Plan as suitable for the development of country residential lots. This area structure plan has been developed in compliance with the policy of the MDP, and also meets the objectives of the Country Residential Servicing Strategy with proposed connections to both municipal water and sanitary services.

Close attention to and consideration of the existing natural features on the site were prominent factors in the plan design. The preservation of and integration with the natural environment, together with the use of modern technologies (geothermal heating/cooling) have been primary considerations in the design of this area structure plan. This theme of preservation and conservation are also two of the main principles of sustainable development. The use of geothermal energy will reduce the consumption of natural gas for this residential development, which in turn will produce less greenhouse gas than a typical country residential development.

The combination of municipal reserve, environmental reserve, and public utility lot in the plan area results in over 15 ha of land that will serve as wildlife habitat and an aesthetic amenity. These public lands, together with tree stands and wildlife movement corridors retained within conservation easements on residential lots, preserve the most significant natural features identified in the plan area. Approval of the Crimson Leaf Area Structure Plan will provide for the preservation of these features together with country residential development.

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**Area Structure Plan
Crimson Leaf**

**Figure 10
Staging**

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APPENDIX A

The following map illustrates the integration of the country residential development with the natural features identified by Spencer Environmental Management Services Ltd.

Laurina Estates



Range Road 225

Springhill Park

Springhill Crescent

-  Public Land
-  Private Conservation Lands

- 1 Pasture
- 2 Wet Meadows
- 3 Marshes
- 4 Willow Stands
- 5 Birch Stands
- 6 Balsam Poplar Woodland
- 7 Aspen Poplar Woodland

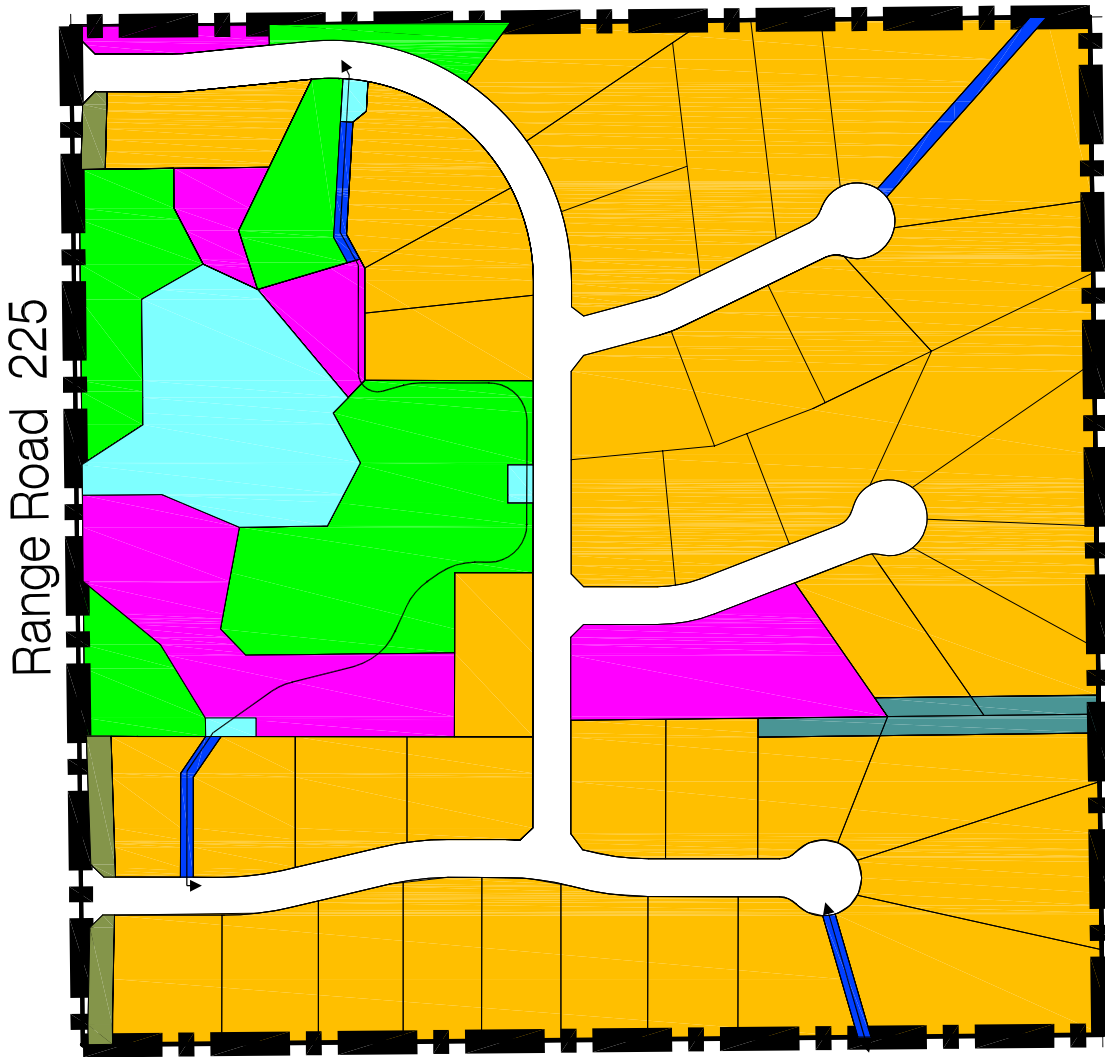
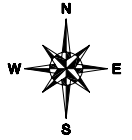
Area Structure Plan
Crimson Leaf
 Appendix A
 Integration With Natural Features

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Information provided by Spencer Environmental Management Services Ltd.



The Estates at Crimson Leaf Area Structure Plan Bylaw 79-2005

Date of Adoption September 20, 2005

EXISTING LAND USE

Residential		Access / Drainage PUL	
Municipal Reserve		Noise Attenuation Berm (Private Land)	
PUL		Road Plan	
Environmental Reserve		ASP Boundary	
Conservation Easement Area		Pedestrian Trail	