

BYLAW 1135/07

**ADOPTION OF SIERRA RIDGE
AREA STRUCTURE PLAN**

STURGEON COUNTY, MORINVILLE, ALBERTA

BYLAW 1135/07 BEING A BYLAW OF STURGEON COUNTY, MORINVILLE, ALBERTA FOR THE PURPOSE OF ADOPTING THE SIERRA RIDGE AREA STRUCTURE PLAN.

WHEREAS, the Municipal Government Act, R.S.A. 2000 C.M-26, and amendments thereto authorize Council to establish and amend Area Structure Plans.

AND WHEREAS, the proposed amendments were advertised in the April 8, 2009 and the April 15, 2009 editions of the St. Albert Gazette and Free Press newspapers and circulated to adjacent landowners in the area of the subject lands.

AND WHEREAS, a Public Hearing was held at 6:00 pm, Tuesday April 28, 2009 in the Community Hall, Gibbons, Alberta.

AND WHEREAS, the Council of Sturgeon has deemed it desirable to adopt the Sierra Ridge Area Structure Plan.

NOW THEREFORE BE IT RESOLVED, that the Council of Sturgeon County, hereby enacts the bylaws are amended as follows:

1. *That Council adopt the Sierra Ridge Area Structure Plan for the lands shown on Schedule "A" and attached as Schedule "B".*
2. *That the Municipal Development Plan Bylaw 818/96 Future Land Use Map be amended to reflect the boundaries of the Sierra Ridge Area Structure Plan as shown on Schedule "A".*

That this Bylaw shall come into force and take effect upon the date of third reading and signing in accordance with Section 213 of the Municipal Government Act, R.S.A. 2000 C.M-26, and amendments thereto.

Read a first time this 23rd day of March 2009.

Read a second time this 10th day of June 2009.

Read a third time this 13th day of October 2009.



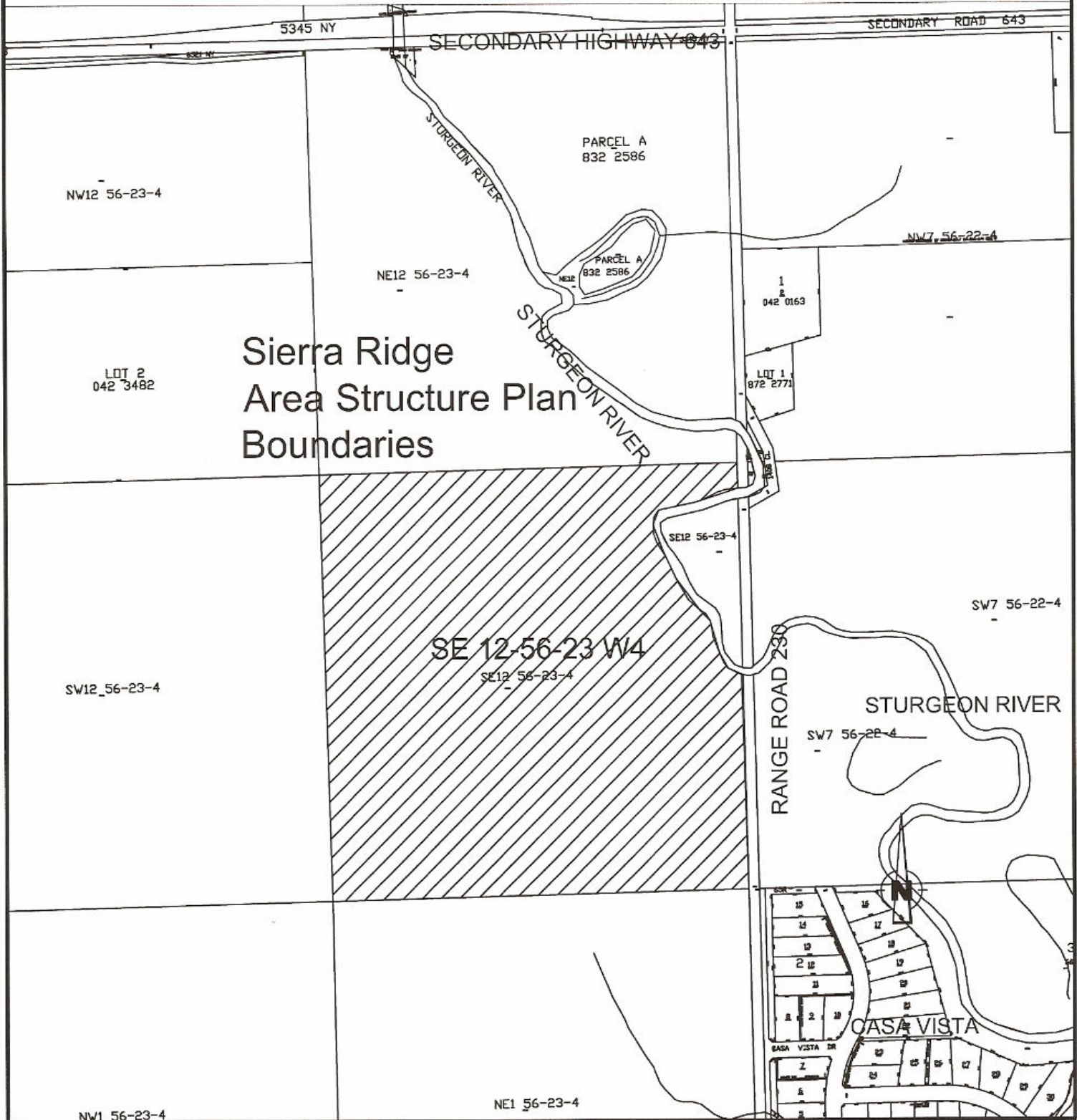
MAYOR



COUNTY COMMISSIONER

BYLAW 1135/07 was signed this 23rd day of October, 2009.

SIERRA RIDGE AREA STRUCTURE PLAN ADOPTING BYLAW 1135/07



Sierra Ridge
Area Structure Plan
Boundaries

Subject Lands 

Scale 1:7500

Schedule A
July 25, 2007

SIERRA RIDGE

Area Structure Plan

SE ¼ 12-56-23-W4

Sturgeon County

August 2008



Scheffer Andrew Ltd.
Planners & Engineers

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1.0 BACKGROUND INFORMATION

1.1 Foreword

Sturgeon County is a thriving rural municipality adjacent to the provincial capital of Edmonton and the City of St. Albert. The proximity to large urban centres and the stability of the Alberta economy have contributed to a steady pattern of growth in Sturgeon County that is expected to continue. In response to the current and anticipated demand for residential development, Scheffer Andrew Ltd., in consultation with area residents, Sturgeon County Administration and Council, has prepared an Area Structure Plan that describes a high quality country residential community that is sensitive to the natural environment and respects the lifestyle of existing area residents. The development concept, which consists entirely of county residential parcels, incorporates and enhances many of the natural features that exist on site.

Primary access to the community will be via Range Road 231 from Secondary Highway 643 to the north, with further emergency access from the south along Range Road 230.

1.2 Purpose

The purpose of this plan is to provide a sound land use planning framework for future subdivision and development of this land. The plan will implement the land use framework and development objectives by identifying the type, size and location of various land uses, density of development, location of the internal roadway network, conceptual servicing designs and the sequence of development.

1.3 Plan Area

The Sierra Ridge Area Structure Plan area is located on the SE¼12-56-23-W4 in the east central part of Sturgeon County, and is comprised of 62.68 hectares of land lying west of the Sturgeon River (Figure 1).

Sturgeon County is in the preliminary stages of a plan or policy preparation exercise for a large, roughly triangular shaped area that is bounded on the west by Highway 28a; bounded on the northeast by the Sturgeon River; and bounded on the southeast by the North Saskatchewan River. The area, which is referred to as the South East Planning Area, will be analyzed and will receive public input to determine a potential range of future land uses and servicing options.

Because the planning for the South East Planning Area is lagging well behind the Sierra Ridge application which was first made in February of 2007, County Administration requested that the Sierra Ridge plan incorporate a larger servicing area which could logically fit into the South East Plan whenever it might be completed. Therefore, the Sierra Ridge plan includes a defined larger logical servicing area with respect to identifiable boundaries, ownership and topographical considerations. This area provides a rational servicing infill of the northwest corner of the plan on the south side of the Sturgeon River.

The extended servicing concept that is described in this plan shows how servicing *could* be extended to a larger area within the proposed northern limits of the South East Planning Area, but only if it is determined that development is desirable once the South East Plan or Policy has been completed (Figures 10, 11 and 12).

1.4 Ownership

The plan area is owned by Sierra Ridge Developments Ltd., and the Area Structure Plan was prepared on behalf of the landowner.

1.5 Public Consultation

Public consultation is an important part of the County's planning process. Since the Casa Vista subdivision is adjacent to this subdivision, several methods of maintaining contact with area residents as well as to obtain their feed back have been implemented including the following:

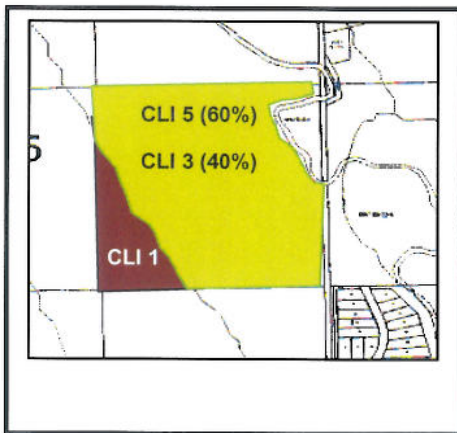
- June 1, 2006: Casa Vista Home Owner's Association was given a letter outlining the proposed development for discussion at the annual general meeting.
- June 26, 2006: Meeting at Bob Frey's (Casa Vista Home Owner's Association president) house with other the CVHOA board. The board indicated that they object to traffic, access and road quality issues.
- August 30, 2006: Draft Area Structure Plan is sent to all homeowners.
- September 15, 2006: Two phone calls are received in response to mail out from Janice Moore and Larry Pulupchuk. Both residents were not in support of the proposal citing traffic/road quality issues as their main concern.

- December 4, 2007: 29 people attended a public meeting including Councillors Karen Shaw and Don McGeachy. Concerns were expressed primarily with storm water management, traffic volume, speed and impact on existing access roads. These concerns will be alleviated with the development of alternative access into Sierra Ridge as shown in Figure 3, and Figure 13.

2.0 FACTORS INFLUENCING DEVELOPMENT

2.1 Policy Context

2.1.1 Municipal Development Plan



The Sturgeon County Municipal Development Plan identifies the plan area as Environmental Protection and therefore must be amended to redesignate the subject land to Country Residential to allow for the proposed development.

The Municipal Development Plan acknowledges that multi-lot residential development is an important sector of the local land use and that there is and will continue to be significant demand for this type of development. The Municipal

Development Plan allows new multi-lot residential subdivisions if they are located adjacent to the boundary of an existing multi-lot country residential subdivision (Casa Vista is located south east) and if they are not located on better agricultural lands as shown in the figure to the left. The majority of the site contains class 3 and class 5 soils which are described as having moderately severe and severe limitations respectively. The proposed subdivision is therefore consistent with the goals and objectives of the Municipal Development Plan.

2.1.2 Land Use Bylaw

The approval of a land use bylaw amendment will be necessary to redistrict the land from Urban Fringe to Country Residential Estate District with a portion dedicated for public utilities and park/open space.

3.0 NATURAL FEATURES

The plan area may be described as being open and undeveloped except for agricultural purposes with a large, treed strip traversing the length from the northwest limits to the south central limits. The Sturgeon River cuts across the northeast corner of the site with a river escarpment of approximately 20 to 23 metres high with slope inclinations of 11 to 15 percent (Sabatini Earth Technologies Inc.). Natural features are shown in Figure 2.

3.1 Environmental Site Assessments

Sabatini Earth Technologies Inc. prepared a Phase I Environmental Site Assessment in March 2006. The primary objectives of the assessment were to identify any potential environmental contamination issues associated with the property and to determine whether a detailed site investigation would be required.

Based on information obtained through records, site investigations and interviews, Sabatini deemed that the subject property was low in terms of environmental risk. However, they recommended that a Phase II be conducted in the vicinity of some old concrete and rock foundations that are visible within the east central limits of the site.

A Phase II was conducted in July 2006 that consisted of excavating 6 test pits in the old buildings. The results of the Phase II indicated that the area around the former building site contained no environmental risk. A copy of each report was submitted under separate cover.

3.2 Environmental Impact Assessment

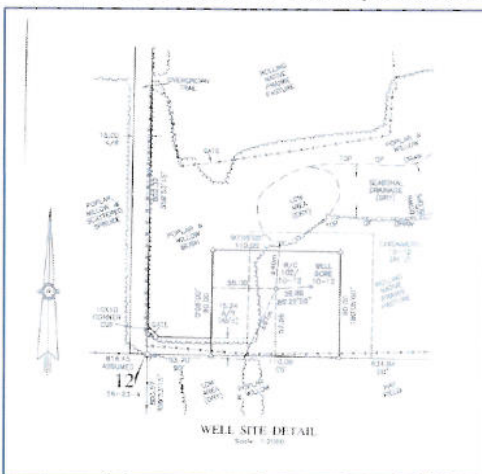
Westworth Associates Environmental Ltd. performed an environmental impact assessment in 2006 to determine the impact of the proposed development on the natural environment. An additional assessment of the wetland areas was conducted by Jacques Whitford / AXYS in July, 2008. These studies will be submitted under separate cover.

Both studies concluded that although there are historical records of species at risk in the area, the subject land has been in cultivation since the 1950's and is therefore not considered optimal wildlife habitat.

Both studies identified a wetland area near the west centre of the quarter section as an important landscape feature for wildlife in the area. The wetland will be designated as environmental reserve, and the design of the surrounding lands will dictate that overland runoff will continue to recharge the wetland in future. In addition to this, the majority of a stand of trees to the south of the wetland will be retained as municipal reserve to facilitate the movement of wildlife to the wetland area. The wetland is recharged by overland drainage and not from an underground spring (Sabatini). The wetland will be maintained at a higher functional level than it currently is, by directing the surface drainage from the surrounding developed lands and roadways to the upper reaches of the wetland area. Sedimentation basins will be constructed to improve water quality before it enters the wetland area. Because the post development runoff is expected to be greater than the predevelopment runoff, the wetland will be maintained on a more continuous fashion than it is at present. Currently, based on existing air photo records, the wetland dries out on a seasonal basis and therefore does not provide continuous suitable waterfowl habitat. Alberta Environment has been consulted (meeting, D. Adams, R. Folinsby, M. Scheffer, J. Andrew - November 28, 2007), (telephone conversation, D. Adams, J. Andrew – July 2008) and are in favour of the proposed approach.

As well, the Jacques Whitford / AXYS report identified two smaller wetlands in the plan area. Since these smaller wetland areas are not recommended for retention, the owner proposes a constructed or engineered wetland for storm water management purposes as compensation for the development of these areas. A comprehensive plan has been discussed with Alberta Environment, and will be provided at the detailed design stage.

According to Westworth's recommendations and County policy, the slopes below the established top of bank (Sabatini Earth Technologies Inc.) as well as an additional 30 metre setback above the top of bank line are designated as environmental reserve.



3.3 Resource Extraction

The Energy Resources Conservation Board indicated that a sweet gas well is located in the southwest corner of NE 12-56-23-W4, 57.56 metres from the northern boundary of Sierra Ridge and 108.7 metres from the western quarter section line as shown in the figure to the left. The minimum setback of 100 metres from the well site

relative to residential buildings must be observed. Accordingly, the design of this portion of the neighbourhood respects the well site setback and residential building limitations in the northwest corner of the plan area.

3.4 Geotechnical Assessment and Shallow Groundwater Table Evaluation

Sabatini Earth Technologies Inc. performed a geotechnical investigation and a shallow groundwater table evaluation on the site relating to the design and construction of roadways and building foundations typical of a residential subdivision. This work included the drilling of 24 boreholes, laboratory testing, soil data analysis and the preparation of two reports which will be submitted under separate cover.

The site investigation revealed that there are high groundwater conditions across the western portion of the site and that the soil profile generally consisted of a thin cover of topsoil over interbedded silt, clay, gravel and clay. Though these conditions will present some challenges to development, Sabatini has provided a list of design recommendations to ensure that road and building construction can be carried out to suit these particular site conditions.

3.5 Adjacent and Existing Land Use

The subject property is comprised of approximately 62.7 hectares of vacant, undeveloped land. The Sturgeon River traverses the northeast limits of the site and the lands east of the river are not included in the plan area. Evidence of an old farmyard in the form of concrete and rock foundations and back-filled basements are visible within the east limits of the site along the river. The neighbouring properties are primarily in agricultural use except for the community of Casa Vista that lies to the south east of the site. Existing land use is shown in Figure 3.

Obviously, any type of development has an impact on adjacent land. However, it is important to note that the Municipal Development Plan states that “multi-lot country residential development is an important sector of local land use and social patterns” and that “there is high demand for country residential subdivision in the County”. In order to maintain a balance between providing much-needed residential development and minimizing the disruption to adjacent land uses, the County and the developer will adhere to the policies contained within the Municipal Development Plan and other municipal and provincial development regulations.

A traffic impact assessment has been prepared by Scheffer Andrew Ltd. With the primary access to the development being proposed through construction of a new access roadway linking west to Range Road 231 and then north to the intersection with SH 643, the traffic impact on existing access roads will be minimized. Section 4.3 deals with traffic in greater detail. A complete copy of the traffic impact assessment has also been submitted under separate cover.

3.6 Historical/Cultural Resources

Alberta Community Development indicated that a Historical Resources Impact Assessment was required (see Appendix 3) and it was therefore conducted by Altamira Consulting Ltd.

All portions of the development area were assessed. Seven locations were selected for intensive survey and were visually inspected in detail with shovel testing. In-field investigations consisted of a foot traverse and visual survey of the entire development area with shovel testing in selected locations.

The Altamira report indicates that two historic sites were recorded within the project area, one a historic field barn and the other is the foundation remains of a farm yard. However, Altamira recommended that neither of these historic sites warranted further study because no palaeontological material was discovered during the survey. They also concluded that there are no further Historical Resources concerns for SE 12-56-23W4 and that that the proposed development proceed without further concern for historical resources. The complete Historical Resources Impact Assessment was submitted under separate cover.

4.0 DEVELOPMENT CONCEPT

4.1 Residential Development

The development concept (Figure 4) will yield approximately 165 Country Residential lots of various sizes with none smaller than 0.2 ha (0.5 acre) in area in keeping with the minimum lot size requirement of the CRE land use district. The following tables provide statistics on population, density and land use for the proposed development.

Gross Area	# Units	Units/ha	People/unit	Population	Density/ha
62.7ha	165	2.63	3.35	553	8.82

	Area	% Net Area	% Gross Area
Gross Area	62.7 ha	n/a	100%
Environmental Reserve	11.1 ha	n/a	17.70%
Net Area	51.6 ha	n/a	n/a
Municipal Reserve	5.16 ha	10.00%	8.23%
Residential	35.30 ha	68.41%	56.30%
Roads	7.44 ha	14.42%	11.87%
SWM and PUL	3.70 ha	7.17%	5.90%

Note - Titled Area of 62.68 ha (155 acres) rounded to 62.7 ha for calculation purposes

4.2 Community and Emergency Services

The following agencies have been contacted with regards to their evaluation of the impact the proposed development will have on them. Their responses follow.

- Bon Accord Gibbons Ambulance, Ernie Lulashnyk, Vice-president: *I can't see your development over taxing the service area with ambulance calls.*
- Fire - Bart Clark, Sturgeon County: *Service will be provided from Gibbons but an additional 600 residents will not be a problem.*
- Morinville RCMP, Sgt. Fraser: *I have no concerns because staff is increased as the population grows.*
- Capital Health: Fort Saskatchewan, Redwater, St. Albert: No response
- Monty Gannon, Superintendent, Public School Division : No response

- Greater St. Albert Catholic Regional Division No. 29, Jerry Zimmer, Superintendent: *I do not expect the development will significantly impact our schools; however, we will file this information with our annual monitoring reports of attendance areas and projections of student enrolment.*

At the time of the submission of this document, the public school board and Capital Health had been contacted three times. To date, no responses have been received.

4.3 Reserve Lands

The plan is consistent with County policy in that the lands below the top of the river bank to the river have been dedicated as environmental reserve. As also required by County policy, an additional 30 metre environmental reserve greenway has been located above the top of the bank (as identified by Sabatini Earth Technologies Inc.). Some additional municipal reserve has been located between the environment reserve and residential development to provide community access to the Sturgeon River.

In addition to the municipal reserve located along the top of the river bank, and the southern edge of the wetland, a large passive / active park area has been provided in the northwest corner of the plan area. Not only does this parkland preserve the existing tree stand, but the open space component provides an opportunity for active play areas and recreational activities that will be a benefit to the residents of the development. Pursuant to County policy, 10% of the net plan area has been dedicated as municipal reserve.

4.4 Roadways and Access

Scheffer Andrew Ltd. conducted a traffic impact study in support of this Area Structure Plan in August, 2006. In the first submission, access to the subdivision was proposed via the intersection of Highway 28A and Township Road 560 (Casa Vista Road). However, Alberta Infrastructure and Transportation indicated that the future status of the intersection is uncertain because of the planned upgrading of Highway 28 to a four lane divided roadway. At that time the intersection could be closed, it could be left in its current state as an at-grade intersection, or could become a right-in/right-out configuration. The County has indicated that a second entrance/egress to the subdivision is desirable. Consequently, the Developer has negotiated an alternative

access to Sierra Ridge via the intersection of Secondary Highway 643 and Range Road 231.

The adjacent landowner to the west has agreed to provide an easement or right-of-way through his land for a new roadway from Sierra Ridge to Range Road 231, which will necessitate upgrading a portion of Range Road 231 and its intersection with SH 643. Access and egress south on Range Road 230 adjacent to Casa Vista will be restricted to emergency access only, by means of installation of removable barricades.

An updated transportation impact assessment which supports these recommendations has been prepared in August, 2008 and is provided under separate cover.

The access and internal roadways will conform to County standards.

4.5 Site Servicing

The County has indicated that the water, sanitary sewer and storm water management systems must be sized to take into account potential future development in the area, in the event that the proposed SE Area Plan designates the surrounding lands as desirable for future residential development. Therefore, the surrounding area was analysed in order to define a larger logical servicing area with respect to identifiable boundaries, ownership and topographical considerations, as shown in Figures 10, 11 and 12. Water, sanitary sewer requirements for both Sierra Ridge and the surrounding defined lands are described below. The proposals are sufficiently flexible so that the final boundary of the service area does not have to be defined until the SE Area Plan has been completed.

4.5.1 Water

The proposed water supply and distribution systems for Sierra Ridge and the surrounding service area are shown on Figures 5 and 10. Water will be supplied from the existing 150mm line which services the Casa Vista subdivision. The Regional Water Commission has indicated that approximately 23 L/s are available from the Gibbons line for future development in Gibbons, Bon Accord, and the surrounding area. For Sierra Ridge, It is estimated that an average of about 2 L/s will be required for domestic use, based on an average per capita domestic demand of 320 litres per day, and a population of 553 at full build out. A reservoir and pump house will be constructed on site to accommodate peak hour domestic flows. The internal distribution system will be constructed with suitably sized mains with hydrants at key locations in order to accommodate line flushing requirements. Full fire protection will not be provided.

The reservoir and pump house will be oversized and/or constructed in stages to provide for future development in the surrounding area. Based on the available capacity in the Gibbons supply line, it appears that there would be sufficient capacity in the Gibbons line to service the overall servicing area shown in Figure 10.

Alternatively, the new reservoir and pump house can be located on the existing Casa Vista public utility lot site, if that is the preference of the Municipality.

4.5.2 Sanitary Sewer

The sanitary sewer system for Sierra Ridge and the surrounding service area is shown on Figures 6 and 11. The subdivision will be serviced on site by gravity mains which will flow to a lift station on the south east corner of the site. The lift station will pump sewage to the ACRWC trunk, located approximately 3.5 km south from the proposed access location on range road 230. The lift station and forcemain will be oversized and/or staged so that they can service the area shown on Figure 11. Appropriate cost recovery mechanisms will be put in place so that any oversizing costs can be recovered from adjacent future developers at the time they tie in.

4.5.3 Storm Water Management

The storm water drainage concept for Sierra Ridge and the expanded servicing area is shown on Figures 7 and 12. The Storm Water Management system will be designed so that post development flows are no greater than pre-development flows, and so that the drainage sub-basins form logical boundaries, and are of sufficient size to meet prevailing design standards and operate efficiently. The land can be described as having gently rolling topography that generally drains from the west to the east towards the Sturgeon Valley. Within this area, seven sub-basins have been identified that could be serviced by their own storm water management ponds, as shown in Figure 12.

For Sierra Ridge, storm water runoff will be collected via catch basins and directed to an underground storm sewer system. The storm mains will drain by gravity into a constructed or engineered wetland for storm water management purposes as shown Figure 7. The constructed wetland will be designed to accommodate storm water run-off for the 1:100 year storm event, and will release water into the Sturgeon River at a rate of

2.5 litres per second per hectare. The constructed wetland will improve the water quality to an acceptable standard before discharge into the Sturgeon River.

In addition, some of the storm water runoff will be directed to the existing wetland, so that the wetland will be maintained throughout the season rather than having it dry up during the summer, as is now often the case. A sedimentation basin may need to be constructed at the upper end of the wetland in order to improve water quality. Thereby, the function of the existing seasonal wetland will be maintained or improved.

4.5.4 Franchise Utilities

Franchise utilities such as natural gas, telephone, cable and electricity are readily available and will be extended as development occurs.

5.0 IMPLEMENTATION AND AMENDMENT

The preceding sections set out the general objectives and the "blue print" upon which further planning, design and subsequently development will be based. Implementation of the plan to realize actual development and construction depends on several major factors, the most significant being the approvals at different stages of the planning process and the development aspirations of the property owners in effecting the staging of development. While the owners of the lands would initiate development of the parcel immediately following Municipal approval, it is expected that the build out of the plan area could take between 3 to 5 years.

5.1 Staging

The rate of development in the plan will be influenced by many factors, particularly the real estate market and the status of the economy. Given that servicing will come into the plan area from Range Road 230, but that the primary access will be provided from the west, staging will likely depend on market and cost constraints which must be further investigated. The staging plan that is included in this document as Figure 9 will likely be adjusted once more information is known.

5.2 Plan Approval Process

The plan has been prepared to permit much flexibility with respect to future planning for the adjacent lands, which will become clearer as and when planning commences for the larger planning area. The developer is enthusiastic about proceeding with development. The County needs residential development for the significant numbers of employees

which will be attracted to the upgraders which are being planned, designed and constructed in the Industrial Heartland. Therefore, the Sierra Ridge Plan is timely and can be approved with complete flexibility for currently undefined surrounding development.

The implementation of the plan will begin with the approval of the area structure plan by Council as a Bylaw thus ensuring the implementation of the Municipal Development Plan policies regarding orderly, efficient development of land. There is also a requirement to convert the present Urban Fringe zoning to Country Residential Estate zoning. Subdivision will occur once the amendments to the aforementioned documents have been completed.

Subsequent to the approval of this area structure plan, amendments to the plan may be initiated by the County or affected landowners as deemed necessary. As part of the amendment process, the County shall provide all affected parties an opportunity to provide input to any proposed change through the public hearing process as required under the Act.

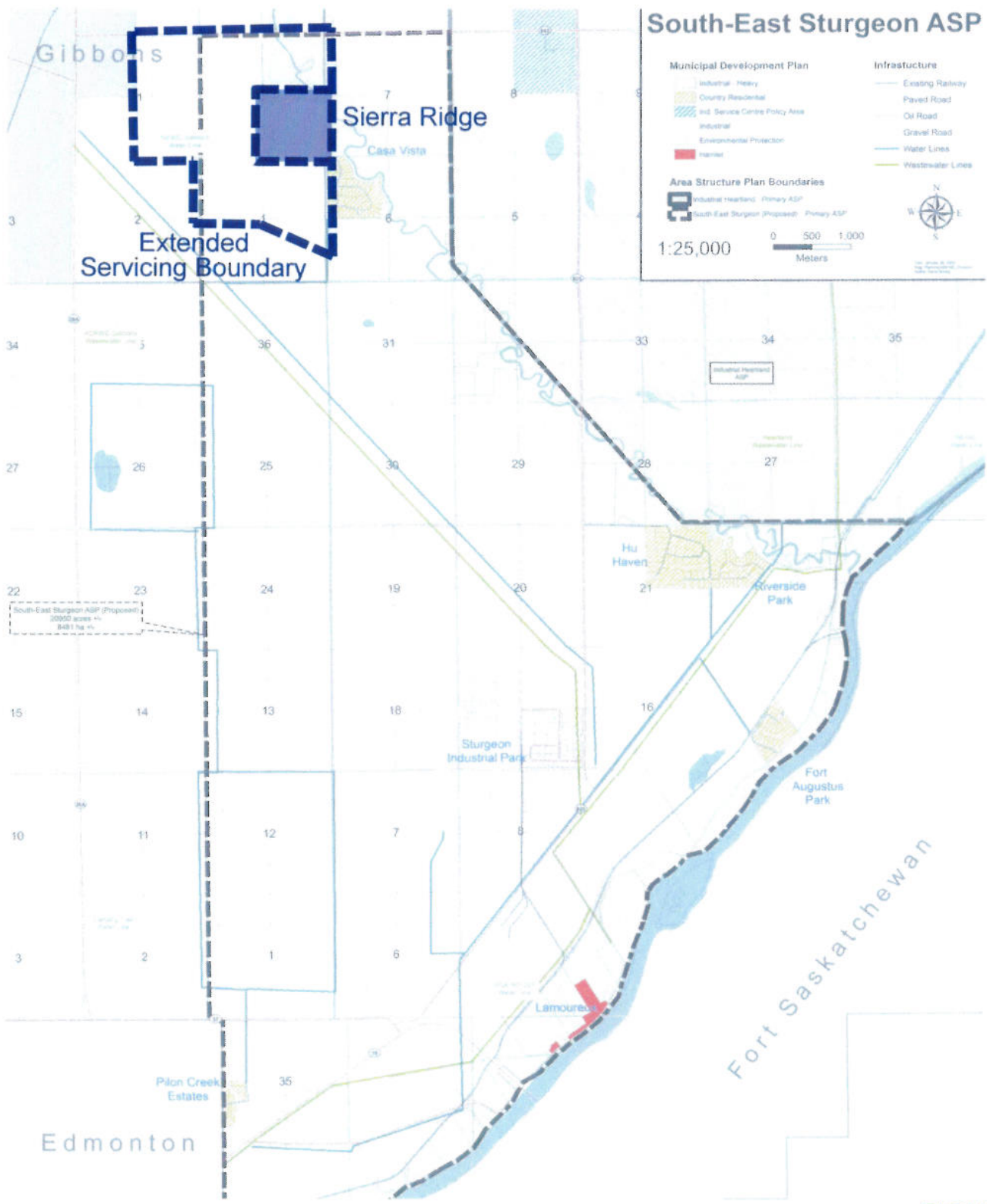


FIGURE 1
LOCATION PLAN
 SIERRA RIDGE
 AREA STRUCTURE PLAN

SE 12-56-23-4
 STURGEON COUNTY

Scale 1:75000
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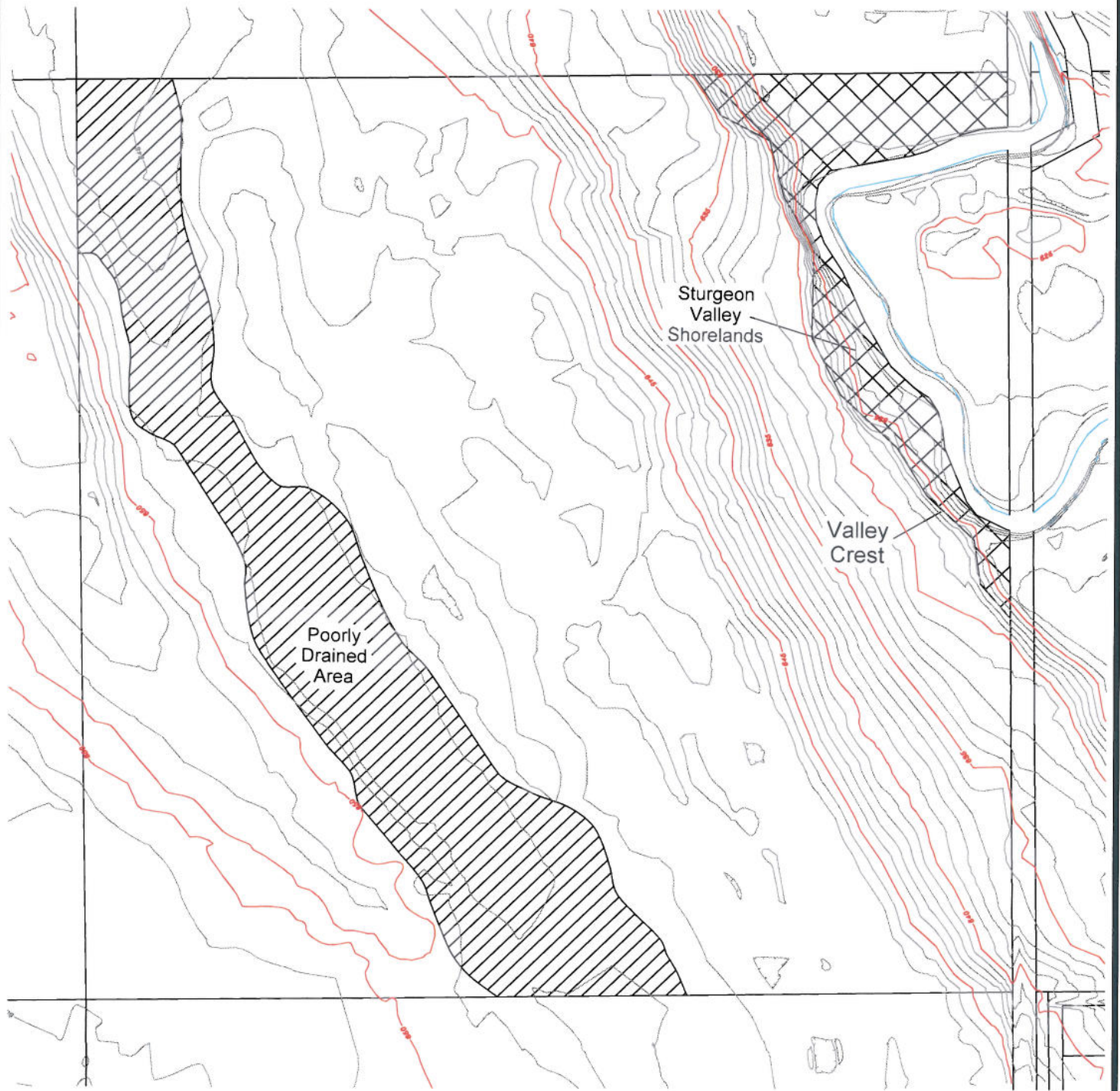


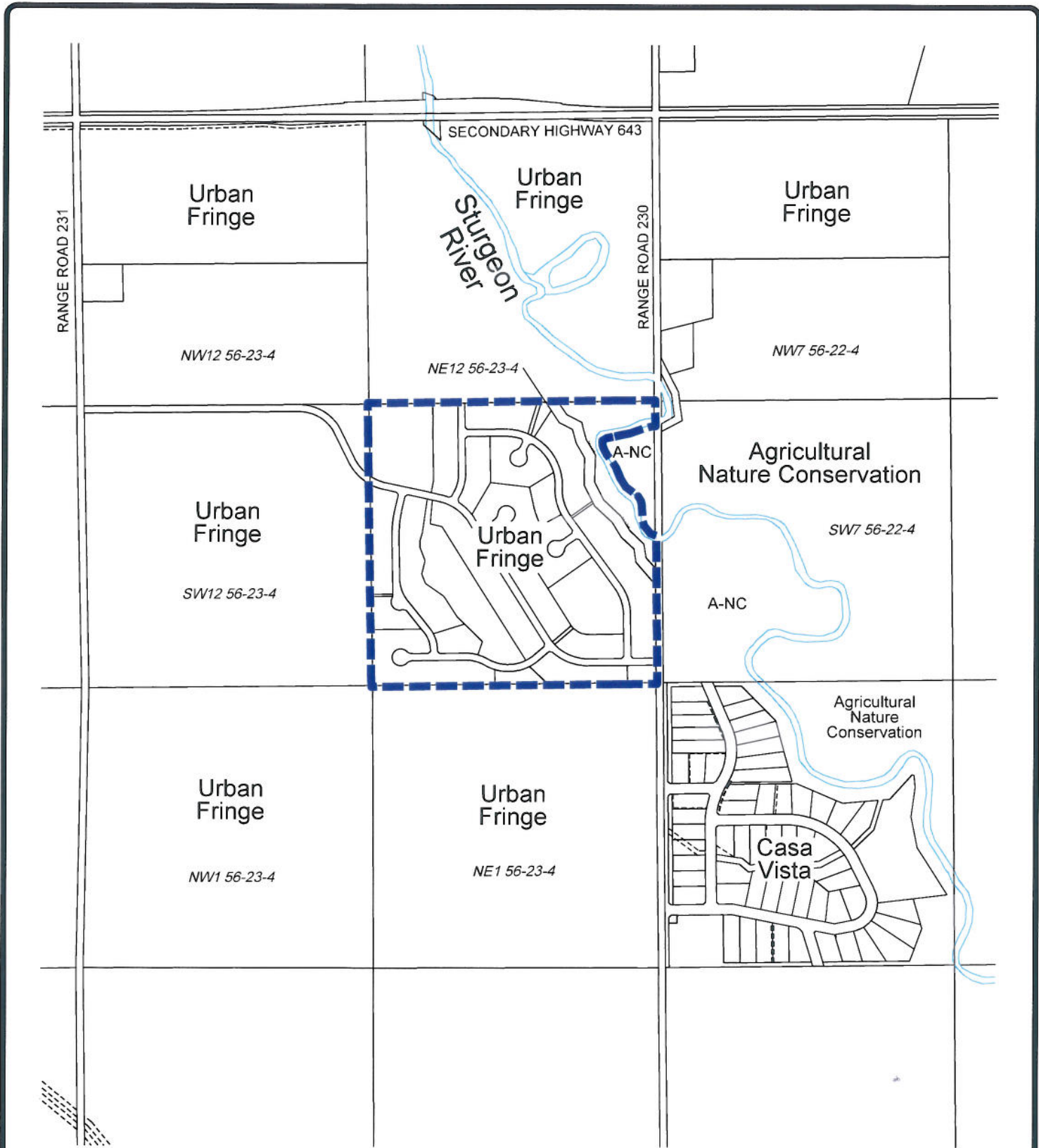
FIGURE 2
NATURAL AND MANMADE FEATURES

SIERRA RIDGE
AREA STRUCTURE PLAN

SE 12-56-23-4
STURGEON COUNTY

Scale 1:5000
August 6, 2008
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**FIGURE 3
EXISTING LAND USE**

**SIERRA RIDGE
AREA STRUCTURE PLAN**

SE 12-56-23-4
STURGEON COUNTY

Scale 1:5000
August 6, 2008
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- Environmental Reserve
- Municipal Reserve
- Storm Water Management Facility
- Residential

FIGURE 4 DEVELOPMENT CONCEPT

SIERRA RIDGE
AREA STRUCTURE PLAN

SE 12-56-23-4
STURGEON COUNTY

Scale 1:5000
August 6, 2008
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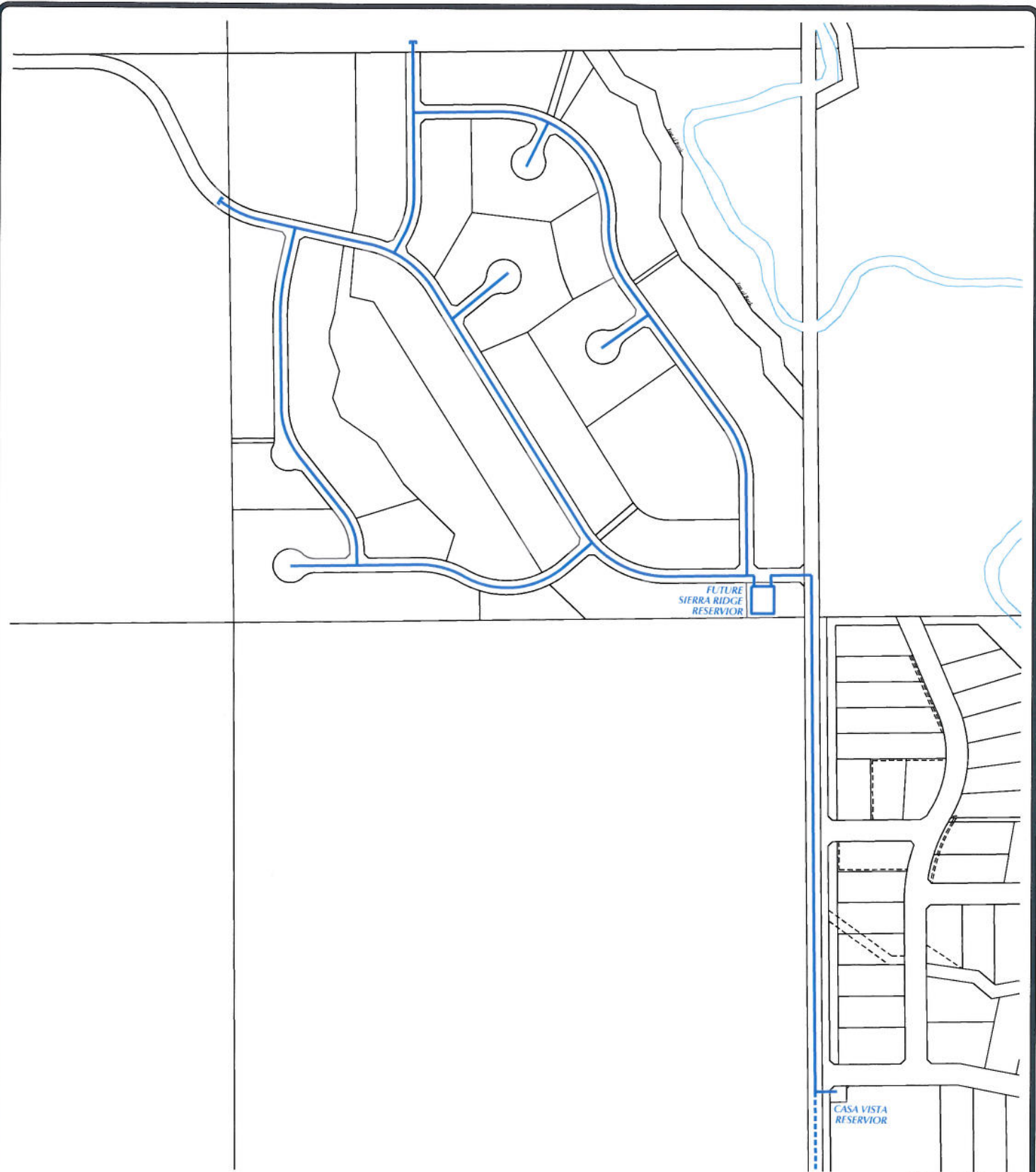


FIGURE 5
WATER DISTRIBUTION

SIERRA RIDGE
AREA STRUCTURE PLAN

SE 12-56-23-4
STURGEON COUNTY

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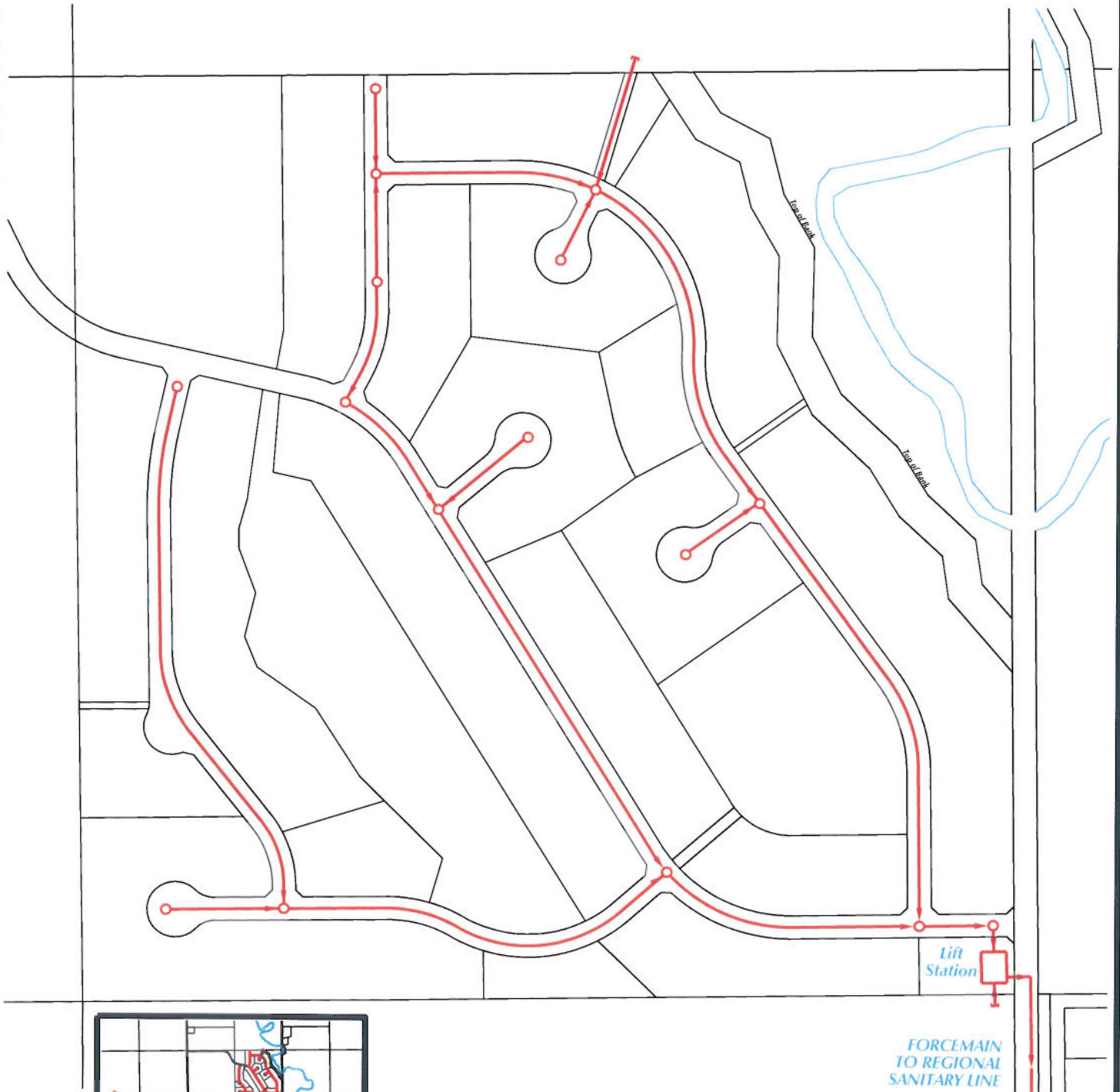


FIGURE 6
SANITARY SERVICING
 SIERRA RIDGE
 AREA STRUCTURE PLAN

SE 12-56-23-4
 STURGEON COUNTY

Scale 1:5000
 August 6, 2008
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-  Major Overland Flow Route
-  Minor System
-  Outfall / Inlet

FIGURE 7 STORM WATER MANAGEMENT

SIERRA RIDGE
AREA STRUCTURE PLAN

SE 12-56-23-4
STURGEON COUNTY

Scale 1:5000
August 6, 2008
7220100b0.dgn





FIGURE 8
AIRPHOTO
SIERRA RIDGE
AREA STRUCTURE PLAN

SE 12-56-23-4
STURGEON COUNTY

Scale 1:5000
August 6, 2008
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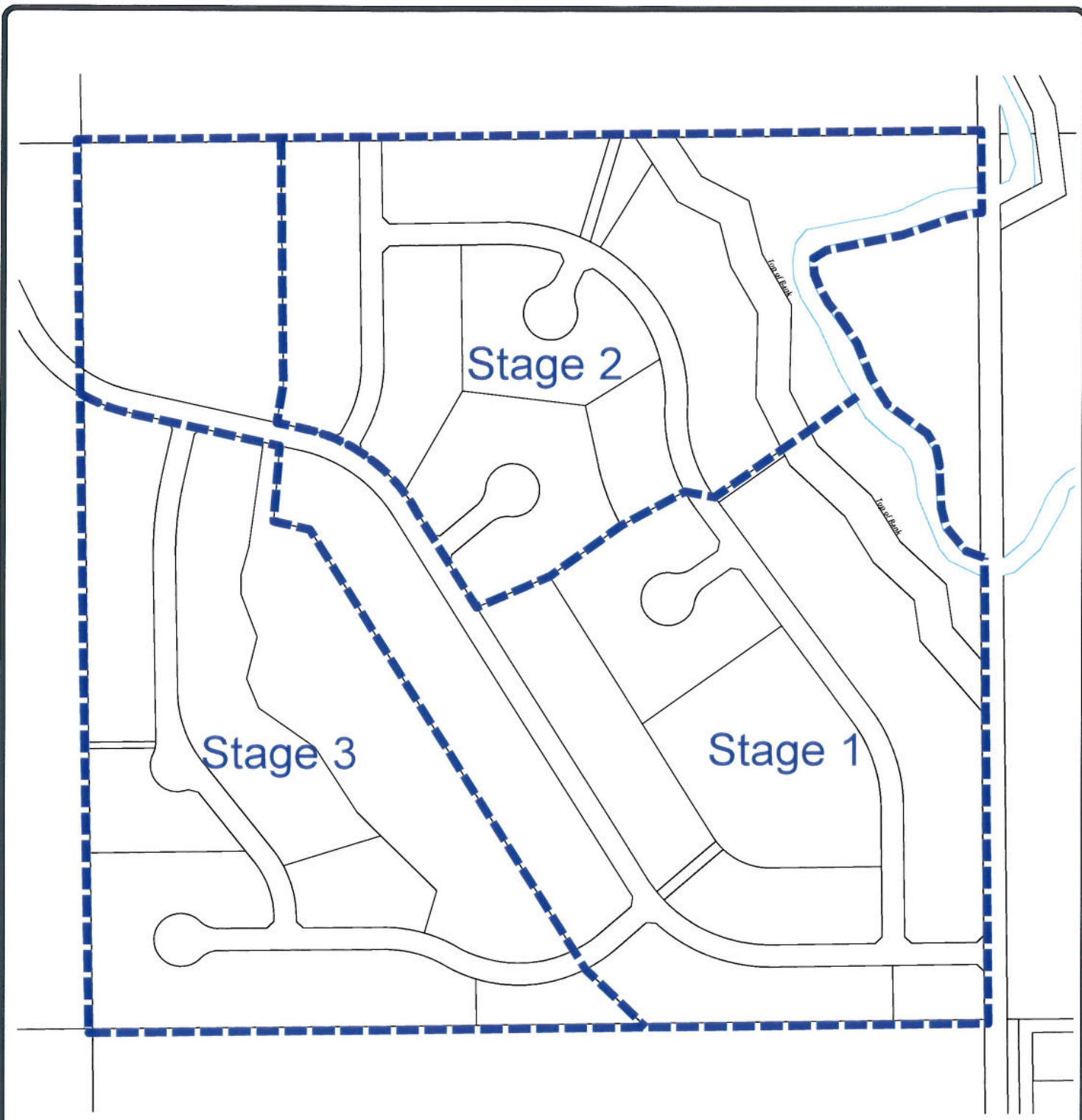
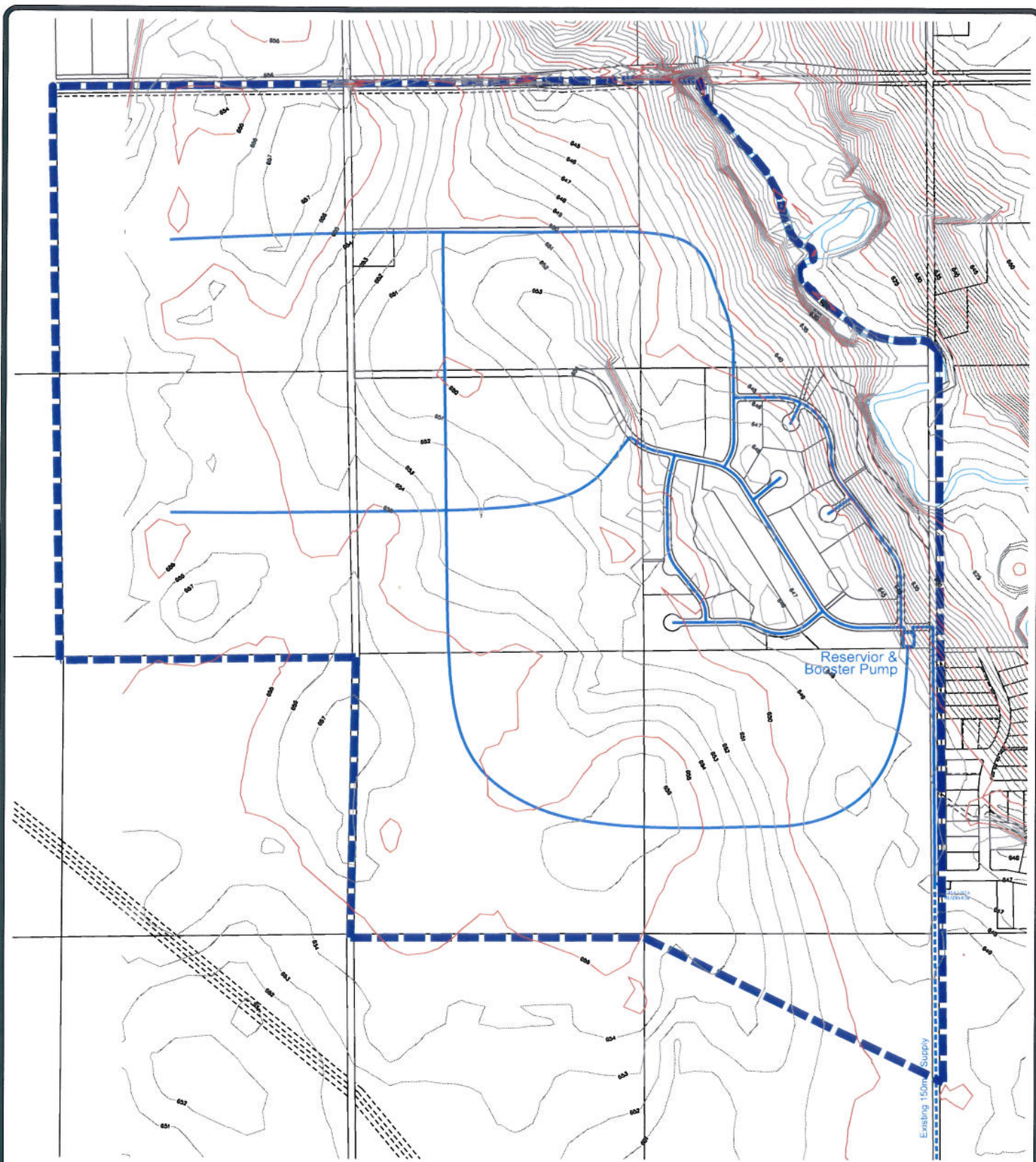


FIGURE 9
STAGING
SIERRA RIDGE
AREA STRUCTURE PLAN

SE 12-56-23-4
STURGEON COUNTY

Scale 1:5000
August 6, 2008
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— — — — — Servicing boundary

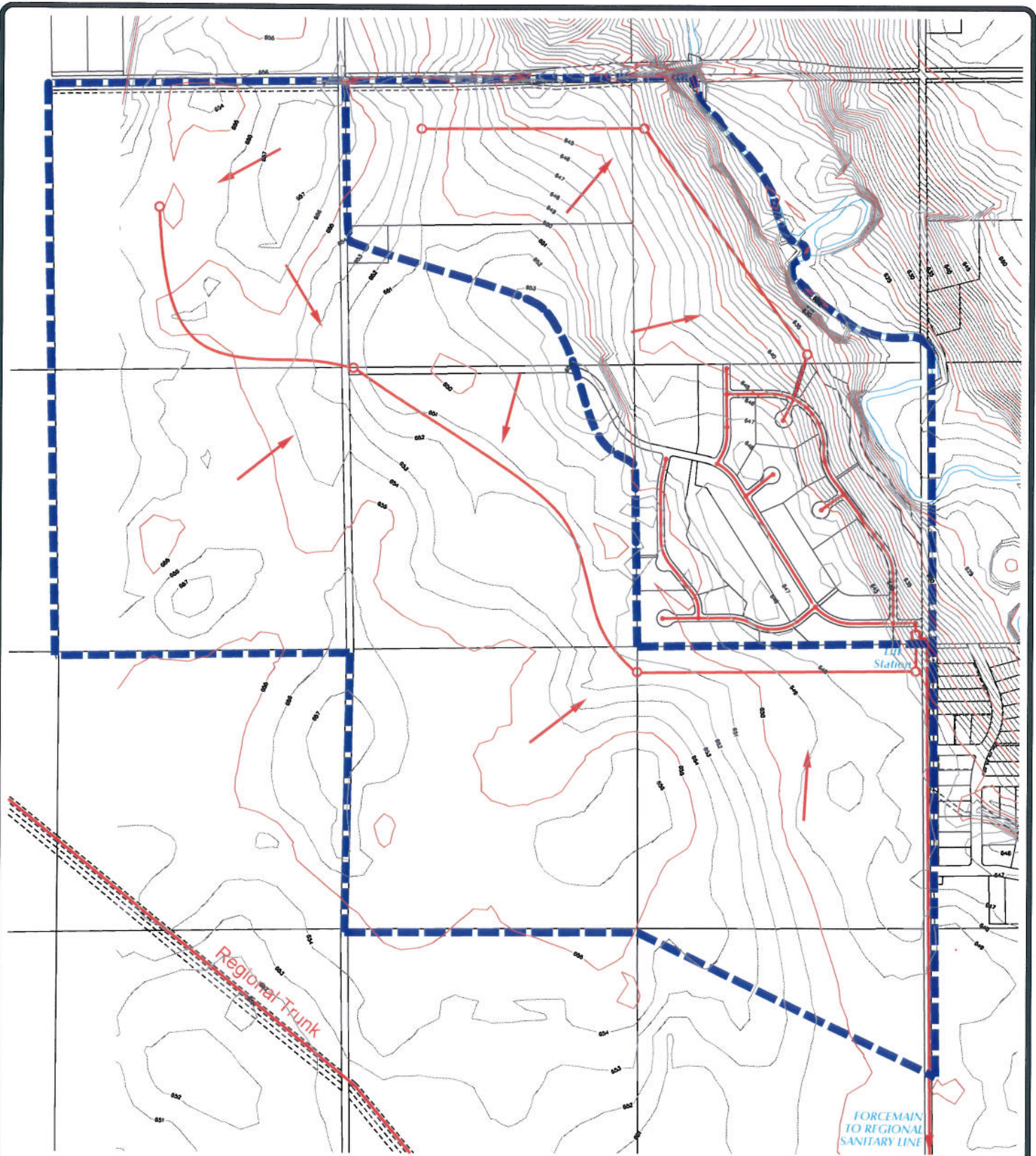
FIGURE 10 WATER DISTRIBUTION CONCEPT

SIERRA RIDGE AREA STRUCTURE PLAN

SE 12-56-23-4
STURGEON COUNTY

Scale 1:15000
August 6, 2008
7220100b0.dgn





- Basin Boundary
- Drainage Direction

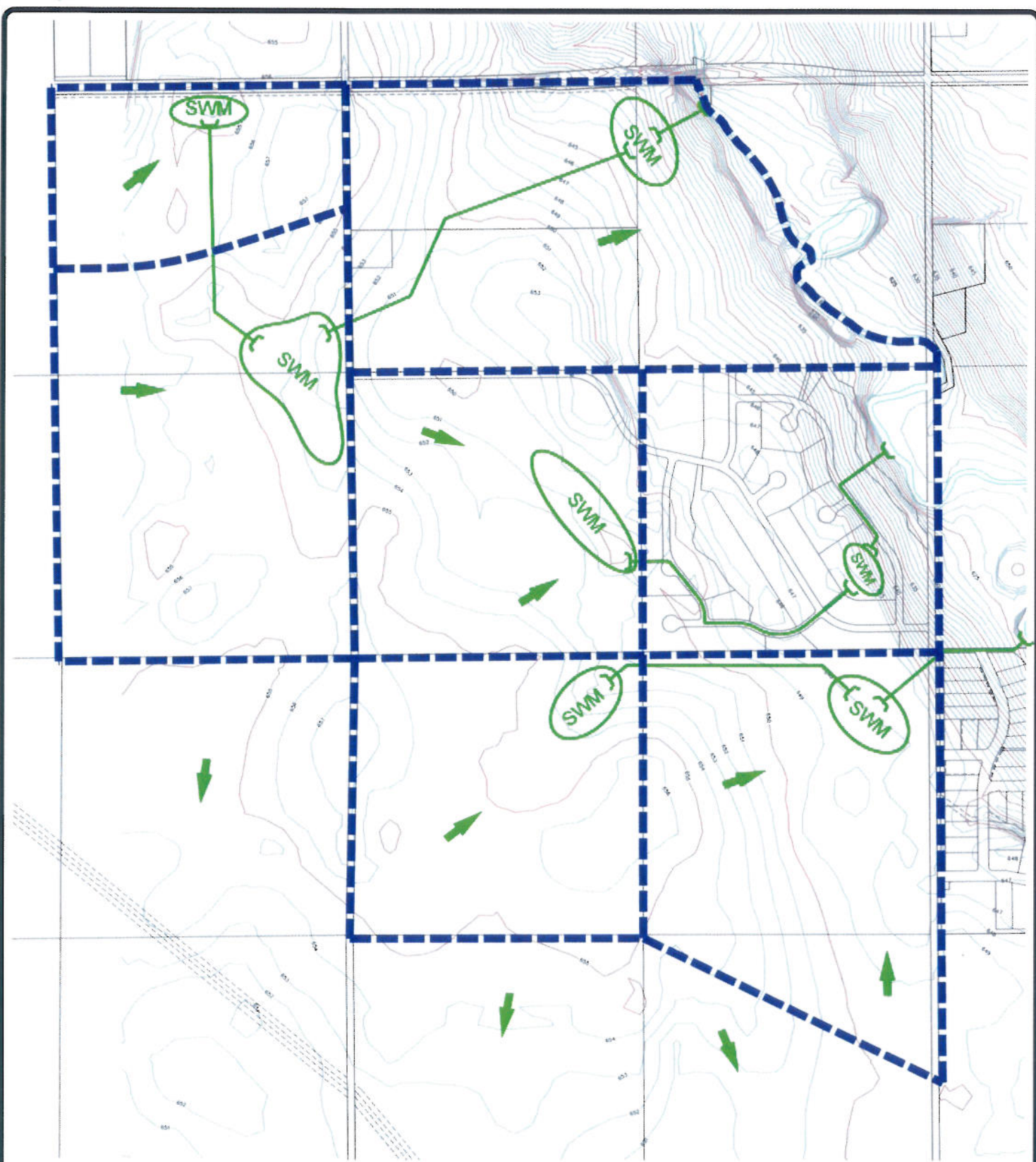
FIGURE 11 SANITARY SERVICING CONCEPT





SIERRA RIDGE AREA STRUCTURE PLAN

SE 12-56-23-4
STURGEON COUNTY

Scale 1:15000
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-  Drainage Basin Boundary
-  Drainage Direction
-  Storm Ponds
-  Storm Sewer System

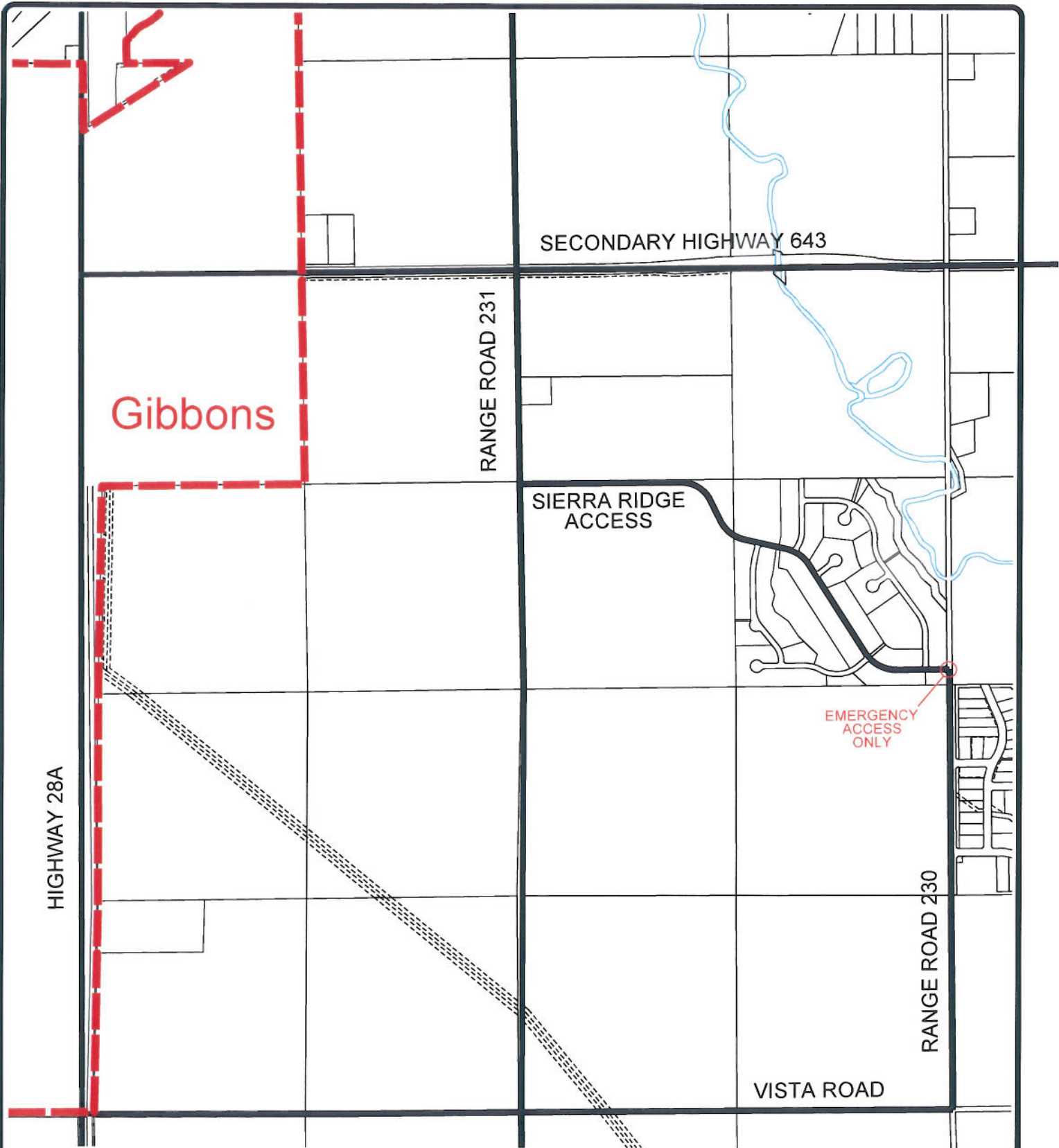
STORMWATER MANAGEMENT CONCEPT

FIGURE 12
SIERRA RIDGE
AREA STRUCTURE PLAN

SE 12-56-23-4
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**FIGURE 13
TRANSPORTATION**

SIERRA RIDGE
AREA STRUCTURE PLAN

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