

AREA STRUCTURE PLAN

SENTINEL EAST
INDUSTRIAL PARK
LAC LA BICHE COUNTY

668040 ALBERTA LTD
MARCH 2011



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1.0 INTRODUCTION

The preparation of the Sentinel East Industrial Park Area Structure Plan has been initiated by the current owner, 668040 Alberta Ltd. The purpose of the Area Structure Plan (ASP) is to delineate a planning framework to create a serviced rural industrial subdivision within the legal jurisdiction of Lac La Biche County. The preparation and submission of the ASP is in accordance with Section 633 of the Municipal Government Act (MGA, the "Act") and conforms to the general policies stated in the Lakeland County Municipal Development Plan and the Lac La Biche County Land Use Bylaw No. 09-037, specifically section 127 outlining serviced industrial districting.

As required by the Act the ASP describes at minimum:

- The sequence of development proposed for the area;
- The land uses proposed for the area;
- The density of population proposed for the area; and
- The general location of major transportation routes and public utilities.

As well as provides a context for other factors affecting the proper development of the described lands including:

- Compliance to the municipal planning framework;
- Land suitability for the proposed development including environmental, historical and cultural aspects;
- Development scope;
- Circulation patterns and access and egress to site;
- Infrastructure and site services;
- Municipal and Environmental Reserve dedication; and
- Community Services.

1.1 Plan Purpose

The purpose of this ASP is to define a framework for a serviced rural industrial development and subdivision in accordance to Section 633 of the Act. The planning and development framework will assist to facilitate the orderly development of the identified lands that are generally consistent with the County's policy framework and engineering requirements.

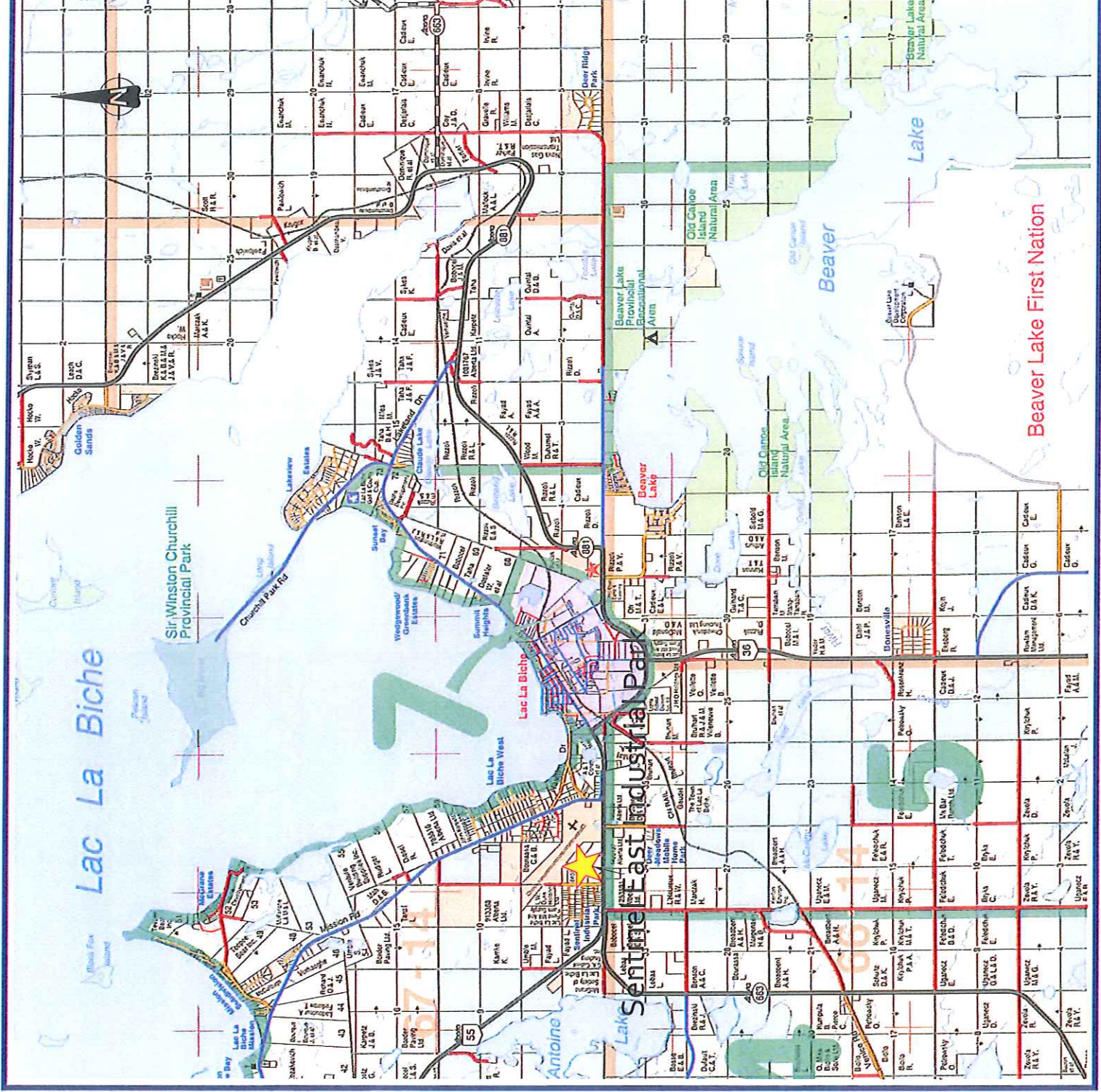
Sentinel East Industrial Park

SW 2-67-14-4
 Area Structure Plan
 Lac La Biche County

Legend

 - Sentinel East Industrial Park

Figure 1 -
 Regional Context



2.0 LOCATION

The subject lands are located in Lac La Biche County. The plan area is contained within a part of the quarter legally described as SW ¼ Section 2-67-14-4. Included in the plan area are approximately 44.22 hectares of land. The area is generally located southwest of the Lac La Biche community and is defined by the following boundaries: north and east boundaries are the Lac La Biche Airport; south boundary is Hwy 55 and west boundary Range Road 142. The specific location for the proposed development is illustrated in *Figure 2-Site Location*.

3.0 BACKGROUND

The current owner believes that the market for a rural industrial park is in demand. The exploration of oil and gas in the region as well as the strategic location along major transportation routes provide development opportunities. It is logical that the proposed development would be an appropriate extension of the existing industrial park and its associated servicing. The owner believes that a rural industrial land use developed in a subdivision setting would be complimentary to the adjacent uses and industry. The centralization of light industrial uses in an industrial park setting rather than scattered throughout the rural community is a more efficient and effective use of land and servicing resources. Concentrating industrial uses is more aesthetically preferable because of the opportunity to create screening through appropriate siting and buffering.

4.0 FACTORS INFLUENCING DEVELOPMENT

4.1 Policy Context

The County has numerous documents that direct the planning and development of this site. The following documents have been reviewed in preparation for the plan:

- Lakeland County Municipal Development Plan
- County of Lac La Biche Land Use Bylaw
- Lac La Biche County General Municipal Servicing Standards
- Watershed Management Plan; and
- Stormwater Management Plan.

Sentinel East Industrial Park

SW 2-67-14-4
Area Structure Plan
Lac La Biche County

Legend

----- ASP Boundary

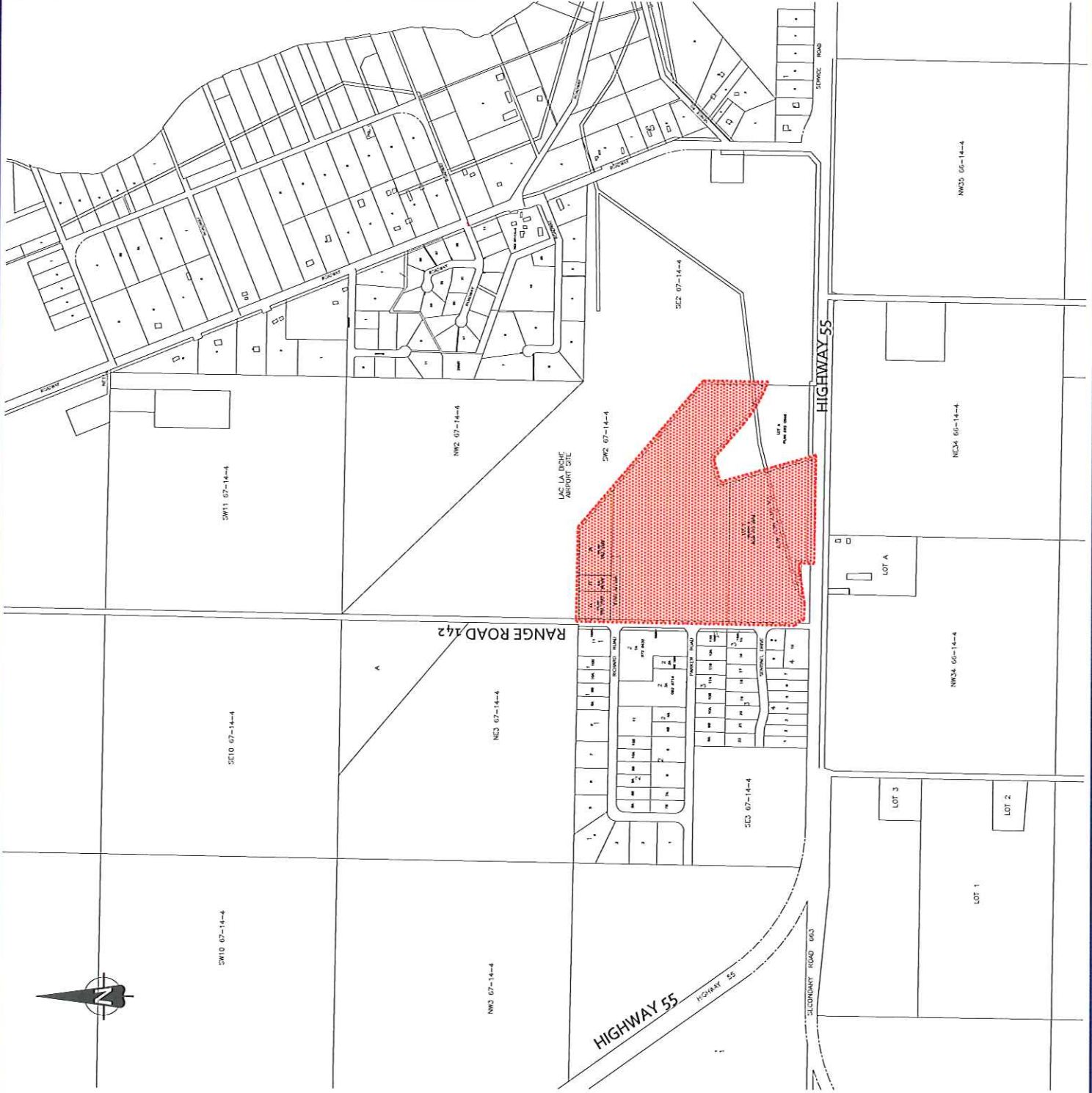


Figure 2 -
Site Location

4.1 Statutory Plans

4.1.1 Municipal Development Plan (MDP)

In 2007, Lakeland County and the Town of Lac La Biche amalgamated to form the local authority of Lac La Biche County. At the time of plan preparation the MDP for the previous jurisdiction, Lakeland County, applies as the governing policy until such time a revision is adopted. The preparation of this plan is in direct response to the MDP stated policy under section 10.2 that an Area Structure Plan be prepared for the Sentinel East Industrial Park. The County's objective is to "encourage industrial development in a way that diversifies the economy and mitigates potential negative impacts on the environment and residents' quality of life." As stated in the section 10.2 Industrial Policies (a) the County's objective is to encourage: "industrial development to locate in industrial parks provided that adequate infrastructure servicing is available"; and (d) "clustering of industrial uses or business park development adjacent to or near major transportation routes and removed from sensitive environmental, cultural and historic features." The prepared ASP delineates a rural industrial use that supports the MDPs industrial policies and provides a clear framework for the evaluation of future subdivisions and development applications for the area.

4.1.2 Land Use Bylaw

The Land Use Bylaw already designates the subject lands as Serviced Industrial (SI) district, therefore all subsequent development shall be subject to the Land Use Bylaw and as required by the Municipal Development Authority. Further discussion about the land use specifics is outlined below under section 4.8.

4.2 Ownership

The current owner of the subject property is 668040 Alberta Ltd. The Sentinel East Industrial Park Area Structure Plan has been prepared on the behalf of the beneficial owner.

4.3 Resource Extraction

Preliminary investigations in preparation of this plan indicate that no sour gas facilities are present in the vicinity of the proposed development as illustrated in *Figure 3- Natural Features*. There are no resource related constraints within the plan area to restrict development.

4.4 Existing Land Use

The entire quarter section containing the plan area is already districted for serviced industrial uses. The plan already encompasses three subdivided lots and a registered road plan from 2009. The site also has one registered right-of-way, Plan 5205, for a subsurface gas pipeline owned by Lac La Biche Gas Co-Op in the southeast portion of the development. The pipeline will be relocated by the registered owner at the time of development. Therefore, no road or utility right-of-ways will exist that may interfere with the future development of this site.

4.5 Adjacent Land Use

The Sentinel East Industrial Park is situated north east of the Hwy 55 and Range Road 142 intersection as illustrated in *Figure 2- Site Location*. The following discusses the adjacent land uses abutting the plan area:

- North and East - The lands are districted at Agricultural (AG), although the Lac La Biche municipal airport is currently operating on the land. Any development in the developing area will be subject to the provisions outlined in the Airport Vicinity Overlay District.
- South - The land are districted at Highway Commercial (HWC);
- West - The lands to the west are districted as Rural Industrial (RI).

4.6 Natural and Man-made Features

The plan area has no significant natural features with only one cluster of trees in the centre, as shown in a recent air photo of the site *Figure 3 - Natural Features* and further demonstrated in *Figure 4* which includes several recent photos. The sites topography is generally characterized as sloping downward from the northwest to the south east boundary of the plan area. The elevation ranges from 573 metres (above sea level) to 557 metres (above sea level) for a total relief of 16 metres as illustrated in *Figure 5-Existing Topography*.

As part of determining the development suitability of the site a preliminary geotechnical investigation was carried out by ENC Testing Inc. February 2011. The soil investigation included eighteen testholes located throughout the plan area. Overall, as stated in the geotechnical report, the site is generally suitable for development of an industrial park. The detailed findings and recommendations for all laboratory and field testing are provided in the appending documents.

The plan area has one registered subsurface right-of-way owned by Lac La Biche Gas Co-Op in the southeast portion of the development. The pipeline will be relocated by the registered owner at the time of development. Therefore, no road or utility right-of-ways will exist that may interfere with the future development of this site.

In conclusion, the site's features present no concerns related to natural features, topography and/or other soil instabilities. As such there are no indications that natural or man-made features may constrain development.

4.7 Historical/Cultural Resources.

An historical resources impact assessment is not required based on information obtained from Alberta Culture and Community Spirit, Historical Resources Management Branch in preparation for this ASP. This fact is verified through the submission of appending documents.

Sentinel East Industrial Park

SW 2-67-14-4
Area Structure Plan
Lac La Biche County

Legend

----- ASP Boundary



Figure 3 -
Natural Features



Figure 4 – Site Photos

Sentinel East Industrial Park

SW 2-67-14-4
Area Structure Plan
Lac La Biche County

Legend

----- ASP Boundary

560 - Contours



Figure 5 -
Existing Topography

5.0 DEVELOPMENT OBJECTIVES

The proposed development concept is based on the following objectives:

- Develop a plan consistent with the general intent and purpose of the adopted statutory plans;
- Outline a framework to develop a high quality, comprehensively planned serviced industrial subdivision, with: appropriate linkages; a safe and efficient transportation system that is based on demand; servicing designs and orderly staging;
- Encourage the development of a variety of desirable businesses in response to market demands;
- Integrate and protect existing natural features where possible into the development;
- Design visually attractive landscaping features for public utilities in order to encourage building in the same manner; and
- Provide a clear plan for the public and neighboring residents to review and allow for input.

6.0 DEVELOPMENT CONCEPT

The proposed development concept is shown in *Figure 6*. Table 1 outlines the breakdown of the proposed land uses.

**TABLE 1
LAND USE DISTRIBUTION**

	Area (ha)	% of GDA
Net Development Area		
Roadways	4.10	9.27
Public/Institutional	4.82	10.92
Serviced Industrial	31.25	70.67
Existing Industrial	4.05	9.16
Total Area	44.22	100.00 %

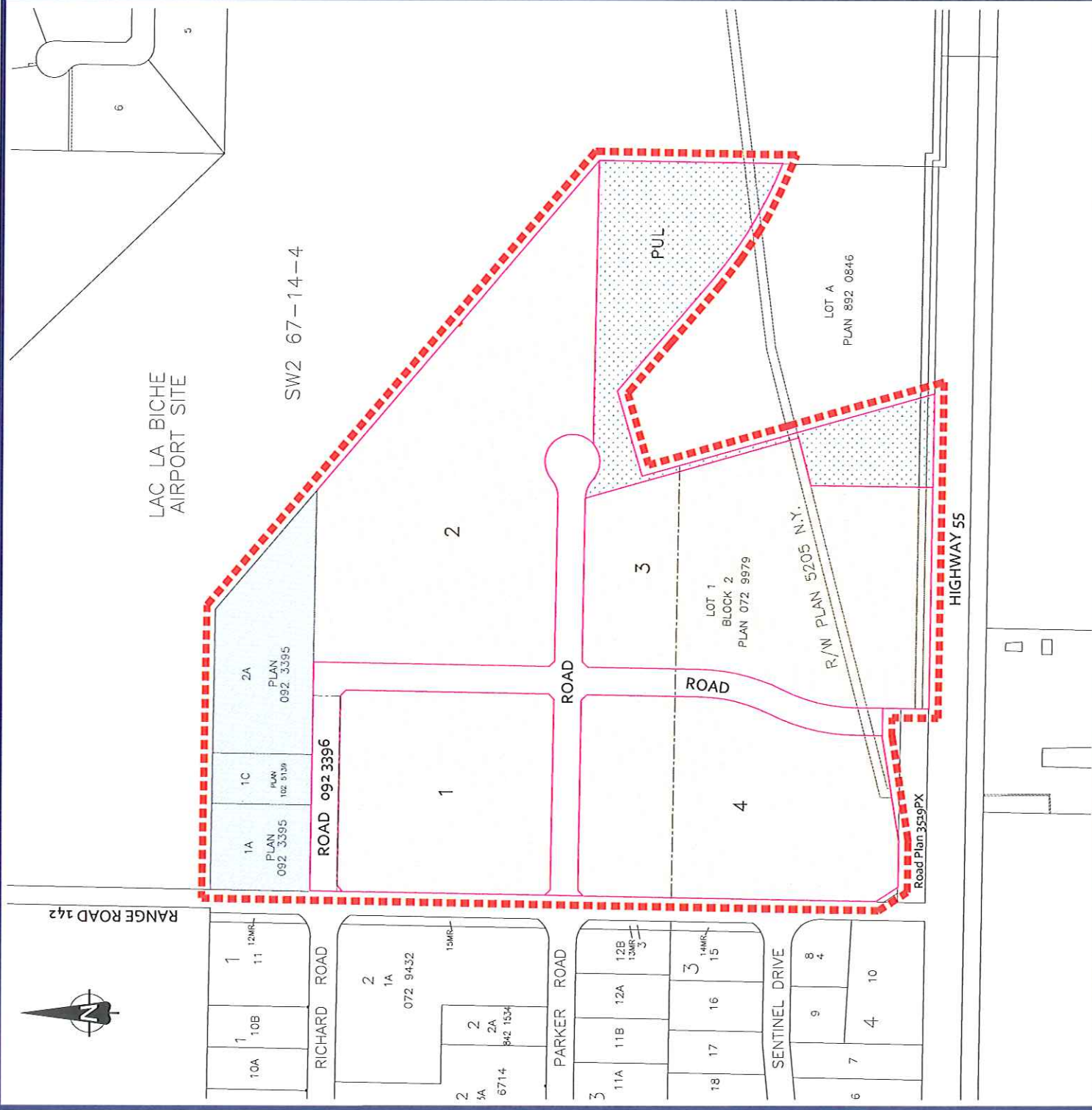
Sentinel East Industrial Park

SW 2-67-14-4
 Area Structure Plan
 Lac La Biche County

Legend

- ASP Boundary
- Serviced Industrial
- Public Open Space
- Existing Industrial Lots

Figure 6 -
 Development Concept



6.1 Land Uses

6.1.1 Serviced Industrial (SI)

The proposed development concept will consist of serviced industrial lots comprising approximately 35.30 hectares of development land. *Figure 6* illustrates the proposed industrial development concept in accordance to policies stated in the Lakeland County Municipal Development Plan and Land Use Bylaw (LUB). The proposed plan only conceptually delineates large lots, specific lot configurations and sizes will be further specified at the time of subdivision. As stated in the LUB minimum site area for each lot will be 0.1 ha (0.25 ac). The specific type of development will conform to the Serviced Industrial (SI) districting, General Municipal Servicing Standards and as approved by the Development Authority.

6.1.2 Municipal and Environmental Reserve

The proposed development concept designates 4.82 hectares for Public/Institutional uses, more specifically a Public Utility Lot for storm water management purposes. As stated in the MDP policy 7.2 (h)(j) Recreational and Municipal Reserve, the County shall require money in place of municipal reserve to be provided in the case of Commercial and Industrial subdivisions unless the land being provided will facilitate the development of Lakeland County's multi-use trail system. Since the development does not include a residential component the PI lands that are designated for functional purposes to provide storm water management facilities (SWMF) should contribute to the aesthetic quality of the rural industrial subdivision. The developer will provide cash in lieu for the required MR to Lac La Biche County for any deficiency in MR dedication. There are no lands identified for Environmental Reserve purposes.

6.1.3 Storm Water Management

A preliminary assessment in preparation for the ASP proposes the development of two (2) storm water management facilities (SMWF) that will be located within the areas identified as PI along the south and east boundaries of the development area. The locations for the proposed storm water ponds are illustrated in *Figure 7-Storm Water Collection System*. Further description of the system is discussed under the drainage section of this plan; however, a comprehensive analysis will be required to detail storm water management analysis to be provided during the development and engineering approval stage. The storm

water retention ponds shall be designed in such a way to contribute to the overall aesthetic value of the open space.

6.1.4 Transportation and Access

The development proposes three vehicular access points to the property and a series of local roads. As the development progresses access to the property will be directed from Hwy 55 through the existing service road connecting to Range Road 142. The existing service road will be built into a t-intersection as illustrated in the *Figure 6- Development Concept*. Two other access points will extend from the existing roads on adjacent lands to the west from Parker Road and Richard Road. Although the plan delineates a general road pattern for the plan area it also allows for further road pattern development to accommodate the subdivision of the lots into appropriate sizes according to market demands.

Since this is a rural industrial subdivision there are no plans to provide additional pedestrian circulation routes other than the paved surfaces for vehicular traffic.

According to information obtained through the Traffic Impact Assessment the intersection improvements, including the existing Hwy 55 road widening and a type-3 intersection required from previous development approvals provide for appropriate design standards for the expanding area. There are no significant traffic related concerns for this development. The conceptual layout of the plan area roadway system is illustrated in *Figure 6- Development Concept*.

6.2 Services

6.2.1 Storm Drainage

The Storm Management Plan for the development shall meet Alberta Environment's stormwater management guidelines for both water quantity and quality. Alberta Environment requires stormwater discharges from new development to be restricted to pre development flow rates for the 1:100 yr storm. This is usually achieved by designing stormwater management ponds and other similar retention facilities that deal with development lands conceptualized through area structure plans and plans of subdivision. The proposed stormwater management system should be designed based on the combined drainage basins within the plan area and additional offsite areas that drain through the subdivision, all of which ultimately drains into Lac La Biche lake. The overall development will require the design and construction of two storm water retention ponds along the south and east boundary of the site. In general, the north portion of the site which is divided by the road

extending from Parker Road will drain into pond A (27.9 Ha of development area) and the south portion will drain into pond B (18.2 Ha of development area), as illustrated *Figure 7-Storm Water Collection*. It is proposed that Pond A be designed with a pre-development flow rate of 0.098 cms and a proposed storage capacity of 14,812 cu.m., while pond B shall be designed with a pre-development flow rate of 0.064 cms and a storage capacity of 9,662 cu.m. The proposed storm management flow rates are based on the development area only. Offsite storm flows from the existing Sentinel Industrial Park should be considered within the overall drainage plan to ensure that offsite flows are properly dealt with. As such, a complete storm water management plan for the area identifying storm water management objectives for the existing Industrial Park and the proposed development area. The overall Storm Management Plan should be completed with County consultation, prior to development of either storm management facility and should be subject to any approval conditions by Alberta Environment. The layout of the proposed storm water management system is shown in *Figure 7*.

6.2.2 Sanitary

As per the Water and Sewer Connection Policy as outlined in section 5.6 of the MDP, "all new subdivisions and developments within this area are required to connect to the municipal sewer and water infrastructure and existing development is encouraged to connect to the lines." The development will tie into the County's existing sanitary sewer force main which exists in the utility right-of-way along Hwy 55 into the plan area through the existing service road access at Range Road 142. The internal sanitary collection system will consist of a 200 mm conventional gravity system constructed to lines and grades as per current municipal standards. The sanitary lines will follow the proposed road layout and be stubbed at the west boundaries to provide for future connections to the Sentinel Industrial Park. To deal with the current sewer connection, the plan proposes to construct a temporary lift station to pump the effluent into the existing pressure system. In the future, when the proposed trunk gravity system is constructed, the temporary sewage lift station should be abandoned and the subdivision be connected to the future gravity line along Hwy 55. Refer to *Figure 8-Sanitary Sewer System* for illustration.

6.2.3 Water Distribution

As per the Water and Sewer Connection Policy stated previously, the subdivision will be fed from the County's existing 300 mm pressurized water main available in the Hwy 55 road right-of-way. The connection will need to route through a Pressure Reducing Valve (PRV) to reduce the water pressure to an acceptable regulated rate of 80 to 85 psi, before continuing into the development area. The lines will follow the road layout by extending a 300 mm pipe north to the existing road right of way located in the northeast of the plan area and 200 mm laterals providing future connections to the lands the west. All water services will be designed according to municipal standards and will be subject to approval by the County. See *Figure 9- Water Distribution* for illustration.

6.2.4 Shallow Utilities

Natural gas, telephone and power servicing for the proposed development will be installed within the proposed utility rights of way located within the front 6.0m of the lots. The shallow utility services and utility rights of ways shall be provided during the subdivision approval process via subdivision registration and upon entrance into a development agreement with Lac La Biche County. The proposed shallow utilities will be extended from existing utilities on adjacent properties and accommodated in the development through Utility Right of Way agreement. The design and construction will be done by others.

6.3 Community and Emergency Services

The County Protective Services department is responsible for Municipal Bylaw and Provincial Statute Enforcement, Animal Control Services, Fire Department and Disaster Services Management and Administration. Other policing services are provided from the RCMP detachment located in Lac La Biche.

Ambulance service will be provided from the Lac La Biche and District Ambulance, located in Lac La Biche.

6.3.1 Schools

Since this is not a residential development no school requirements are explored.

7.0 DEVELOPMENT SEQUENCE

It is anticipated that the development will commence in three phases beginning with lands in the northern portion of the plan area, continuing to the east and finally concluding with lands to the south. Phase two will include the construction of storm water management pond A and Phase three include the construction of storm management pond B. The timing of the development will be determined by market demands. The described phasing of the development is illustrated in *Figure 6*.

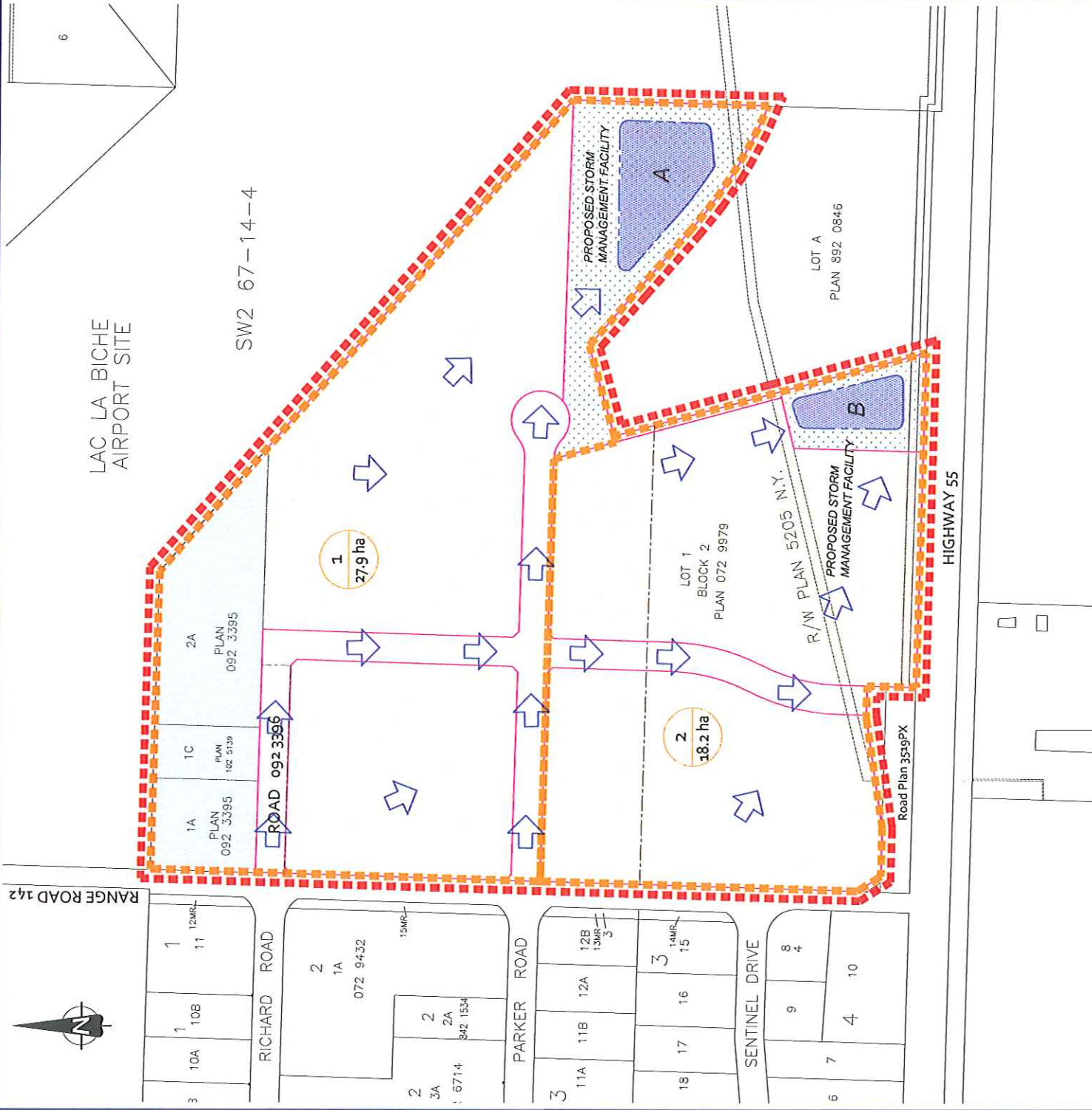
Sentinel East Industrial Park

SW 2-67-14-4
Area Structure Plan
Lac La Biche County

Legend

- - - - - - ASP Boundary
- ⇨ - Storm Water Flow
- - - - - - Storm Water Catchments Area

Figure 7 - Storm Water Collection

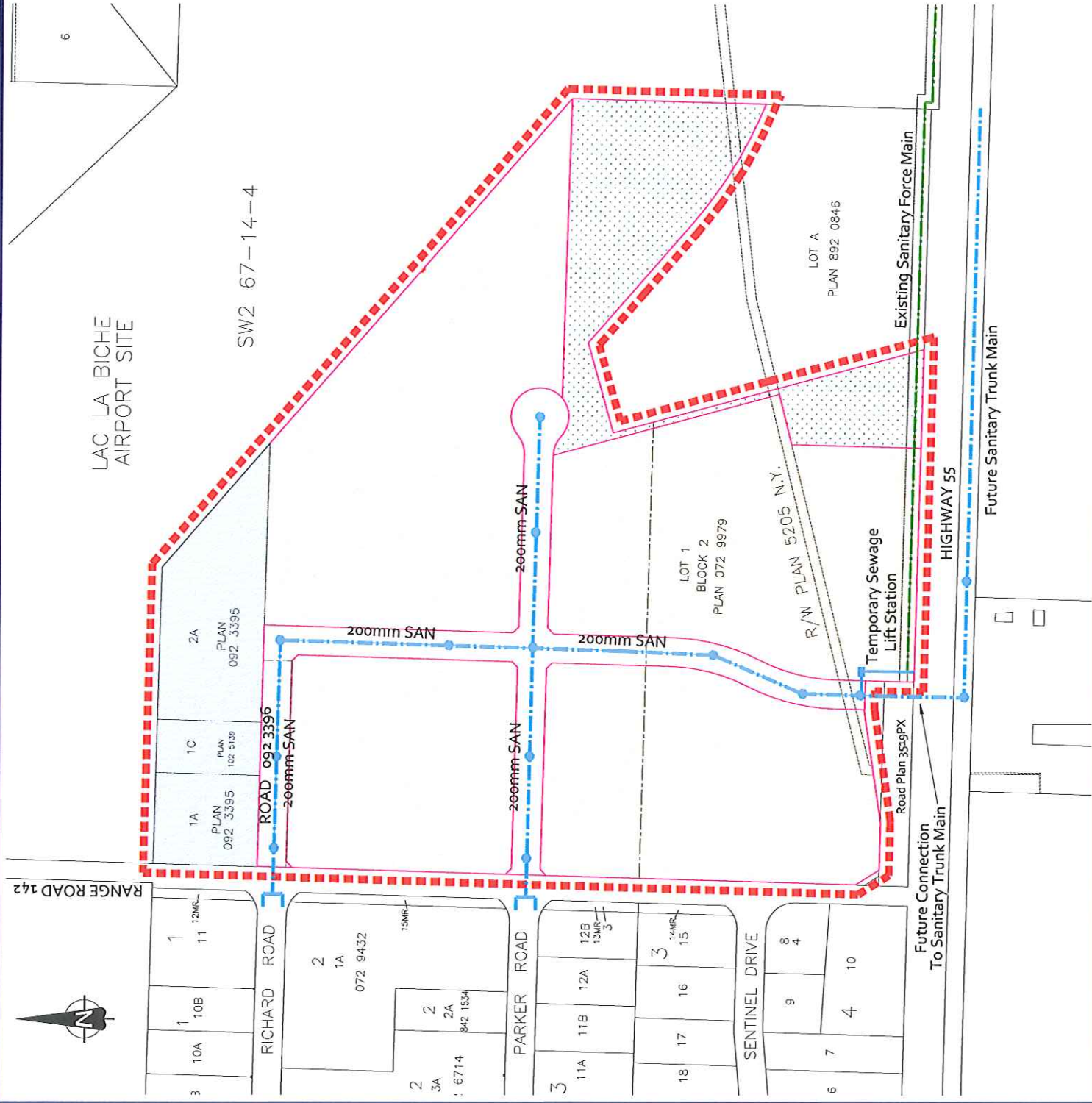


Sentinel East Industrial Park

SW 2-67-14-4
Area Structure Plan
Lac La Biche County

- Legend**
- ASP Boundary
 - Proposed Sanitary Sewer Mains
 - Sanitary Manhole

Figure 8 -
Sanitary Sewer System



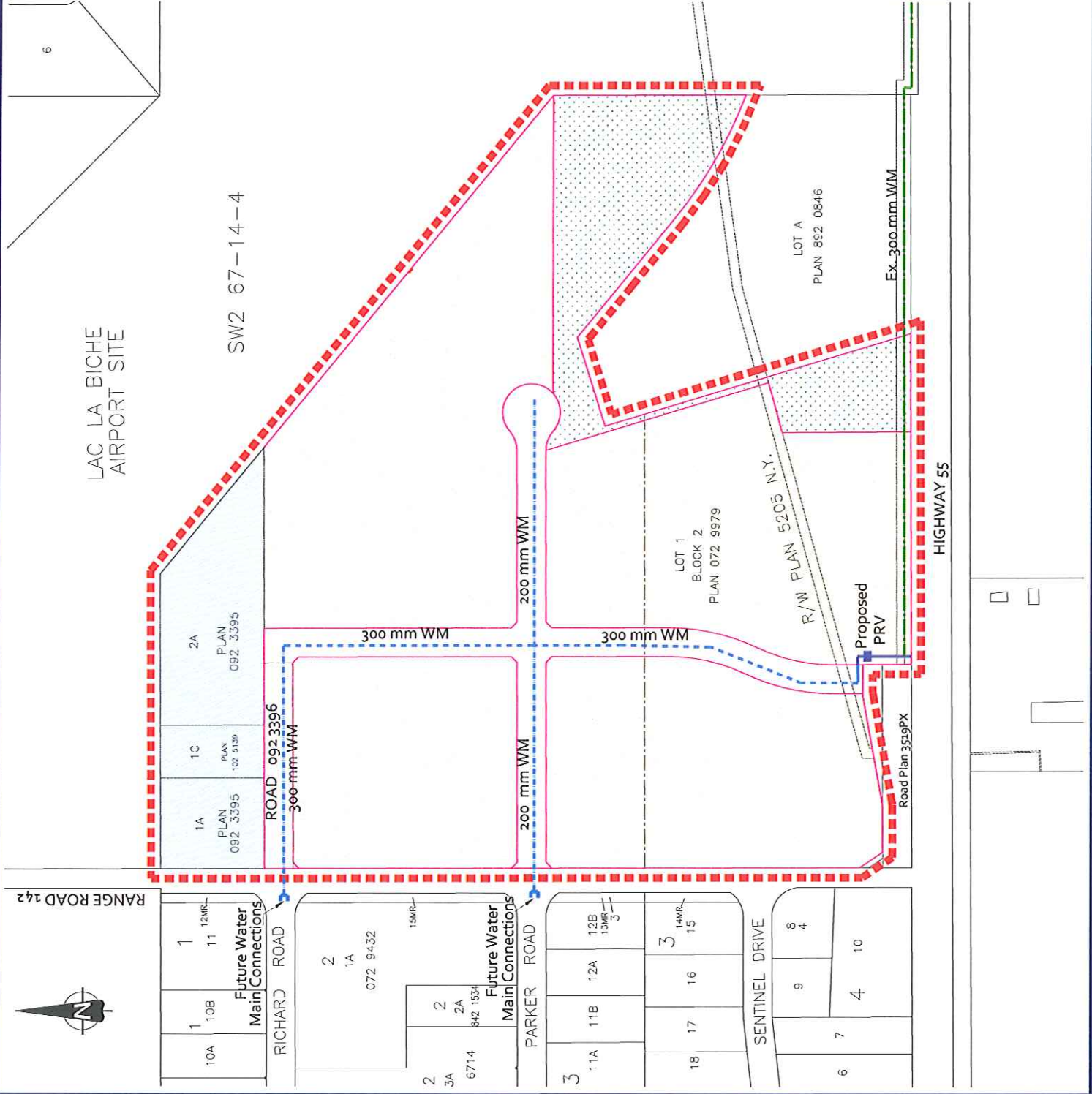
Sentinel East Industrial Park

SW 2-67-14-4
Area Structure Plan
Lac La Biche County

Legend

- - - - - - ASP Boundary
- - - - - - Proposed Water Main
- - - - - - Existing 300 mm Water Main

Figure 9 -
Water Distribution



APPENDIX

March 15, 2011

Project File: 4835-11-015

Ms. Karolina Drabik
SE Design and Consulting Inc.
Suite 1005, 5101 - 46th Avenue
Cold Lake, Alberta
T9M 0C8

Dear Ms. Drabik:

SUBJECT: PROPOSED RURAL INDUSTRIAL SUBDIVISION
SW 2-67-14-W4M, LAC LA BICHE
HISTORICAL RESOURCES ACT REQUIREMENTS

Thank you for providing staff of the Historic Resources Management Branch (HRMB) of Alberta Culture and Community Spirit with information for the captioned project. Staff of the HRMB have reviewed the potential for the proposed development to impact historic resources and have concluded that an Historic Resources Impact Assessment (HRIA) is not required and *Historical Resources Act* clearance is granted for this project.

HISTORICAL RESOURCES ACT REQUIREMENTS

Reporting the discovery of historic resources: Pursuant to Section 31 of the *Historical Resources Act*, should any archaeological resources, palaeontological resources, Aboriginal traditional use sites and/or historic period sites be encountered during any activities associated with land surface disturbance operations, the Historic Resources Management Branch must be contacted immediately. It may then be necessary to issue further instructions regarding the management of these resources.

Should you require additional information or have any questions concerning the above, please contact me at (780) 431-2330, (8820 - 112 Street, Edmonton, Alberta, T6G 2P8), fax (780) 422-3106 or by e-mail at barry.newton@gov.ab.ca.

I would like to thank you for your cooperation in our endeavour to conserve Alberta's past.

Sincerely,



Barry Newton
Land Use Planner

Alberta ■

Freedom To Create. Spirit To Achieve.