October 4, 2014

General Instructions For Surveys and Plans Outside the Provincial Survey System

NOTE:

This document is a Controller of Surveys Policy manual to be used as a general guideline for the Legal Survey and preparation of plans for lands existing outside the Provincial Land Survey System. Reference should still be made to the various Acts and Regulations pertaining to specific situations, which may or may not be included in this document.

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Overview

The general procedures for performing routine type subdivision, parcel and right of way surveys outside the Provincial Land Surveys System are similar to those affecting titled lands in the southern portion of the province. The surveys and preparation of plans are conducted under the provisions of *The Land Surveys Act, 2000* and *The Land Surveys Regulations.*

There are however situations where the normal procedures are not entirely applicable and some alternative methods are required. The following instructions are intended to provide guidance to Land Surveyors involved in surveys lying outside the Provincial Land Survey System. Hunting and trapping sites and remote commercial and residential sites are examples of these types of surveys.

In situations where these general instructions do not adequately define required procedure it is essential that the Surveyor apply for specific instructions before the survey is started. The application to the Controller of Surveys should contain the following information:

- Location of the lands to be surveyed
- Name of Surveyor engaged to perform the survey
- Nature of the transaction and the purpose for which the survey is intended – if for a lease or other terminable transaction, give also the term for which it will run
- A description of the parcel or parcels which it is intended to create, preferably in the form of a location sketch

In case of doubt as to the intention or application of any clause in the general instructions or in the specific instructions, the matter should be referred to the Controller of Surveys for clarification.

NOTE *Before starting a survey, the Surveyor shall obtain all available information about any previous surveys in the area. It is the Surveyor's responsibility to ensure that all information affecting the survey is obtained.*

For information on the survey of Mineral Dispositions, please contact the Controller of Surveys.

Methods and Accuracy

For more information see the "*Saskatchewan CAD File & Georeferencing Specifications*" along with the "*Drafting Requirements for the Preparation of Plans*" on the ISC website.

- Legal Survey plans will be required to be georeferenced to the NAD83, CSRS datum UTM Extended Zone 13 in accordance with policy or Controllers' instructions issued under *The Land Surveys Act 2000 and corresponding regulation.*
- Each boundary line created shall be surveyed, even if it is common with the monumented boundary of a prior official survey. In certain cases a surveyor may adopt the boundary of a prior official survey without actual retracement, if the surveyor reports that the monuments are in their original position and in good condition. However, before a surveyor adopts a boundary from a prior survey, contact shall be made with the Controller of Surveys for approval.

- Consideration will be given to such factors as: whether the Surveyor or the firm associated with the Surveyor performed the prior survey, age of previous survey, number and length of lines to be surveyed and whether the client is in agreement to adoption of the boundary.

- Sufficient measurements shall be taken, either directly or indirectly, to verify that the minimum allowable mathematical closures for the survey are achieved.

- Standard legal survey practice shall apply for the survey. The error in misclosure shall not exceed one part in five thousand.

- The height used to project distances to the ellipsoidal surface for UTM coordinate calculations may be derived from connections to nearby benchmarks or from GPS observations. If neither of these methods is practical, then heights may be scaled from an official provincial or national topographic map.

Connections

Legal Survey plans will be required to be georeferenced to the NAD83, CSRS datum UTM Extended Zone 13 in accordance with policy or Controllers' instructions issued under *The Land Surveys Act 2000 and corresponding regulation.* For more information see the "*Saskatchewan CAD File & Georeferencing Specifications*"

All connections are subject to the following conditions:

- Connections shall be made to legal surveys that are existing within 500 metres of the new survey, and shall include a minimum of two (2) existing monuments. The acceptability of a connection is dependent on the local terrain, methodology used and the amount of additional fieldwork required. For example utilizing appropriate Global Positioning System (GPS) measurements would enable connections to monuments more distant than if conventional survey methods were used. The primary principal is that surveys may not overlap, and care should be taken to ensure that small gaps between nearby surveys do not occur.

- If the nearby land survey had already connected to the CSRS, no additional connections to the CSRS are required.

- If connecting existing legal or control monuments to a new survey involves significant amounts of additional work, the Controller of Surveys should be contacted to assess the necessity of the connection.

- If appropriate, make occasional ties from strategic monuments to nearby permanent structures such as buildings, concrete bridge abutments, etc. This information should be shown on the plan as secondary information and as dashed lines so that it may be used as reference for identifying or replacing the original monuments.

Boundaries and Monumentation

- Cut lines may be established at the discretion of the surveyor, after consultation and approval by the client, adjacent owners and any government agency affected by the survey.

- Monuments shall be established at all deflection points and at the intersection of all previously surveyed lines. Where special and peculiar circumstances exist the Controller of Surveys may waive these requirements.

- Where a surveyed boundary terminates at a natural boundary, a monument on the surveyed boundary shall be placed far enough from the natural feature to be reasonably safe from destruction. The distance along the surveyed boundary between the natural boundary and the monument shall be recorded.

- Where a surveyed boundary crosses a natural boundary (water bodies) ties from the bank to the nearest monument of the surveyed boundary shall be obtained.

- A monument shall consist of:

    - A standard iron post.

    - Short iron posts cemented into superficial bed rock.

- A sufficient number of marker posts shall be established on each survey to facilitate identification of the boundaries and monuments.

- Where conditions are not suitable for establishing a conventional marker post or the marker post may interfere with the aesthetic qualities of the environment the following alternatives for marking monuments may be used: wooden reference posts, rock mounds, earth mounds or pits. The surveyor should make every effort to have at least one significant marker on each site. Discussion with the client may be required to determine the most appropriate corner of the site to establish the marker.

- The main consideration in establishing markers to reference legal monuments and selecting sites thereof is to enhance the permanence of physical evidence of the survey and to make the evidence easier to find.

- The maximum distance between survey monuments delineating the boundary shall be one kilometre.

- On large surveys with multiple courses, every monument planted shall be marked consecutively as follows: B1, B2, etc.

- All monuments required for a survey that are lost or in a state of disrepair shall be re-established or restored.

Natural Boundaries

- All natural boundaries or features within 30 metres of a parcel or other subdivision shall be located and tied into.

- Natural boundaries can be located by either:

    - Conventional survey traverse and offset methods under Section 33 of *The Land Surveys Regulations*. This would include provision for radial measurements and use of position determining systems such as GPS to determine sufficient points on the bank to define all its irregularities.

- By plotting the feature directly from controlled aerial photographs, provided that:

    - The scale of the photographs is as large as or larger than the scale of the final plan of survey. Enlargements may be used to fulfill this requirement only if the resolution is such that the boundary feature is sharply defined on the enlargements.

    - The boundary is inspected by the surveyor.

    - The position of the boundary is clearly marked on the photographs and where it is inspected on the ground, is marked on the photograph in the course of the inspection.

    - Photo identifiable points are positively identified and are marked on the photographs and surveyed on the ground in relation to the monumentation of the survey.

- The accuracy of survey of the photo identifiable points shall be at least equal to one part in 5 thousand.

- For surveys adjacent to reservoirs or controlled water bodies, a surveyed line may be required to define the limits of the survey

Plan Submissions

For more information see the "*Saskatchewan CAD File & Georeferencing Specifications*" along with the "*Drafting Requirements for the Preparation of Plans*" on the ISC website.

- The submission to the Controller of Surveys shall consist of a plan of survey and where applicable field notes, surveyor's report, vertical photographs and other information used in plotting boundaries or features shown on the plan. For surveys where observations are recorded electronically, a digital file of the recorded data will substitute for original field notes.

- The survey report shall consist of:

  - The date of the survey
  - The equipment and procedures used to collect and calculate the data
  - An accuracy statement if GPS is used

- If new geodetic points are established, copies of all observations, calculations and computer listings showing all adjustment parameters, input, residuals and accuracy analysis shall be made available on request. GPS observation files shall be converted to the Receiver Independent Exchange (RINEX) format.

- Any other items requested in specific instructions shall also be submitted.

Plans

- Both mineral and surface subdivision plans are drawn in the same format except the land layer in the Title Block shall specify which layer will be affected (Surface or Mineral).

- In certain cases a Special Plan of Survey may be required. The Controller of Surveys shall be contacted for instructions for the preparation of special plans. In some cases the Controller of Surveys' office may prepare the Special Plan of Survey. In these cases the surveyor shall submit a certified copy of the field notes.

For examples of Northern Plans see Appendix A,and B

Combined Purpose Plans

In some cases it is acceptable to use a plan for more than one purpose. A combination of any or all of the plan types (Plan of Survey, Descriptive Plan Type I or Descriptive Plan Type II) may be used. However, plans shall be specific to each land layer. A combination plan will not be allowed if it affects surface and mineral layers, mineral and feature layers or surface and feature layers.

 *NOTE* *Condominium plans are the exception. They cannot be combined with any other plan type or land layer.*

Some examples of situations where combined purpose plans can be used are:

- To create new subdivisions by plan of survey and consolidate the remainder of a parcel by Descriptive Plan Type II.

- To create new subdivisions by plan of survey and re-arrange a lot boundary by Descriptive Plan Type I.

- To rearrange a lot boundary by Descriptive Plan Type I and create a consolidation by Descriptive Plan Type II.

- To create a new subdivision by plan of survey and re-arrange a lot boundary by Descriptive Plan Type I and consolidate the remainder of a parcel by Descriptive Plan II.

The title block shall state the plan type with the highest hierarchy (Plan of Survey being the highest level, Descriptive Plan Type I being next and Descriptive Plan Type II being the lowest). The land layer (surface, mineral or feature) shall be shown next. Then each plan purpose shall be listed in order of its hierarchy.

The line of approval shall include all new parcels.

For example of a plan showing multiple purposes see Appendix A

Plan Requirements

For more information see the "*Saskatchewan CAD File & Georeferencing Specifications*" along with the "*Drafting Requirements for the Preparation of Plans*" on the ISC website.

List of Coordinates

- A chart showing the NAD83 Latitude and Longitude coordinates, UTM coordinates and zone and heights for all geodetic points of the survey and for survey monuments directly connected to the geodetic points.
- A chart showing the adjusted NAD83 Latitude and Longitude coordinates and UTM coordinates and zone heights for all photo identifiable points used for control.
- A statement indicating that the coordinates are current as of a specific date.
- A list of equipment used for the survey including makes and model numbers.
- A list of post processing software used for the survey, if used.
- A statement of methods used and length of observations.
- A statement of how the survey was tied to the Canadian Spatial Reference System.

NOTE *A list of Coordinates may not be required if the plan is tied to an existing coordinated legal survey.*

NOTE *There should be no reference made to Projected Twp., Range and Meridian*

Support Documents

Mineral Subdivision

- Certification of Surveyor. Note: that the plan title block shall be displayed on the Certification of Surveyor. This links the certification with the plan.

- Letter of submission/Surveyors report detailing any unusual circumstances or problems related to the survey.

Surface Subdivision

- Certification of Surveyor. Note: that the plan title block shall be displayed on the Certification of Surveyor. This links the certification with the plan.

- Letter of submission/Surveyors report detailing any unusual circumstances or problems related to the survey.

- Community Planning Approval/Affidavit as stated under *The Planning and Development Act, 2007*. The approval shall be valid on the day the plan is approved for the creation of the Transform Approval Certificate.

  - For further information please see Community Planning Approval pursuant to The Planning & Development Act, 2007 document on the ISC Website (www.isc.ca).

Dedicated Lands

- See Dedicated Land document on the ISC Website (www.isc.ca)

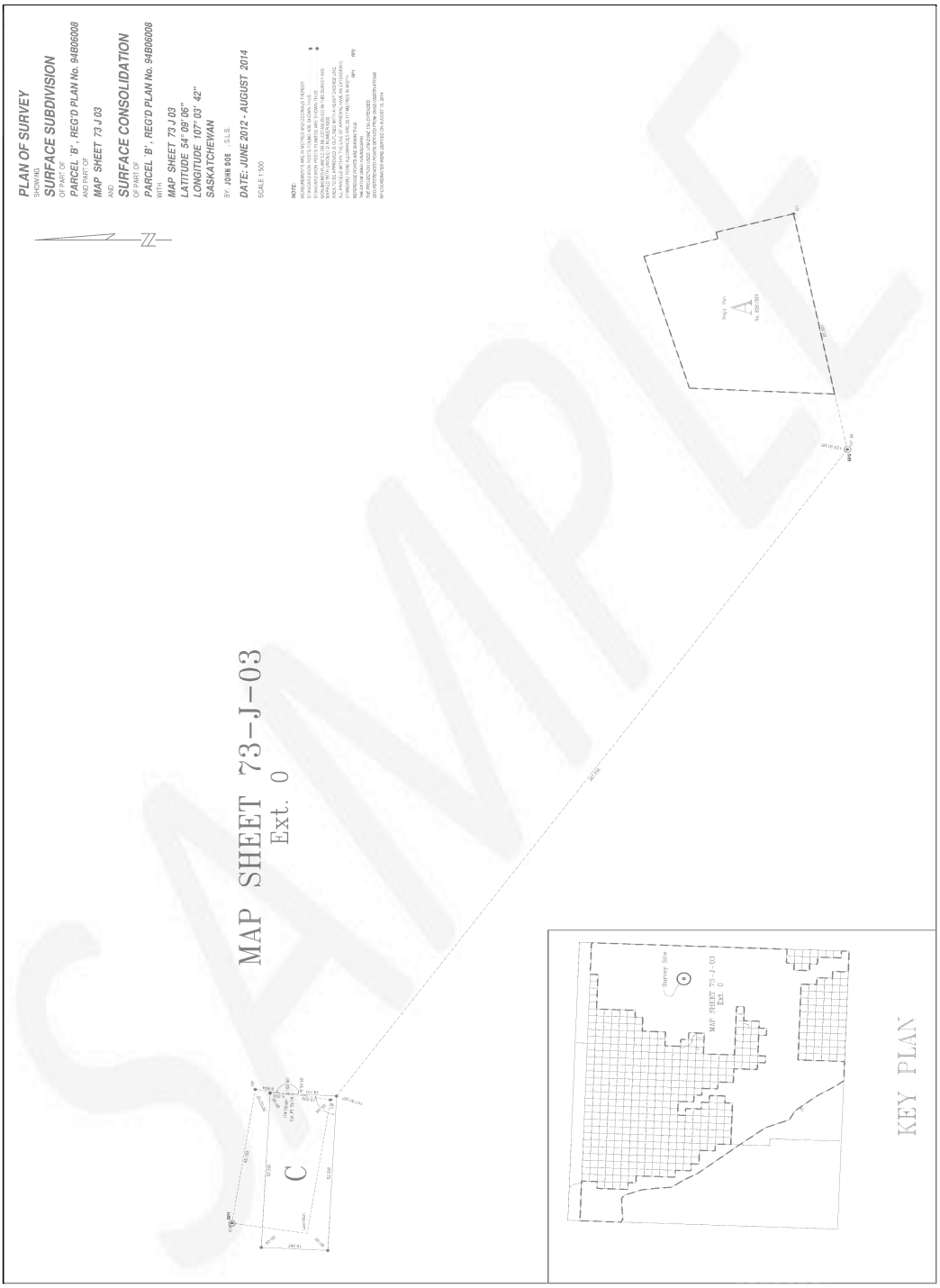
Closure of Roads, Streets, Lanes, etc.

- See Permanent Road Closure document on the ISC Website (www.isc.ca).

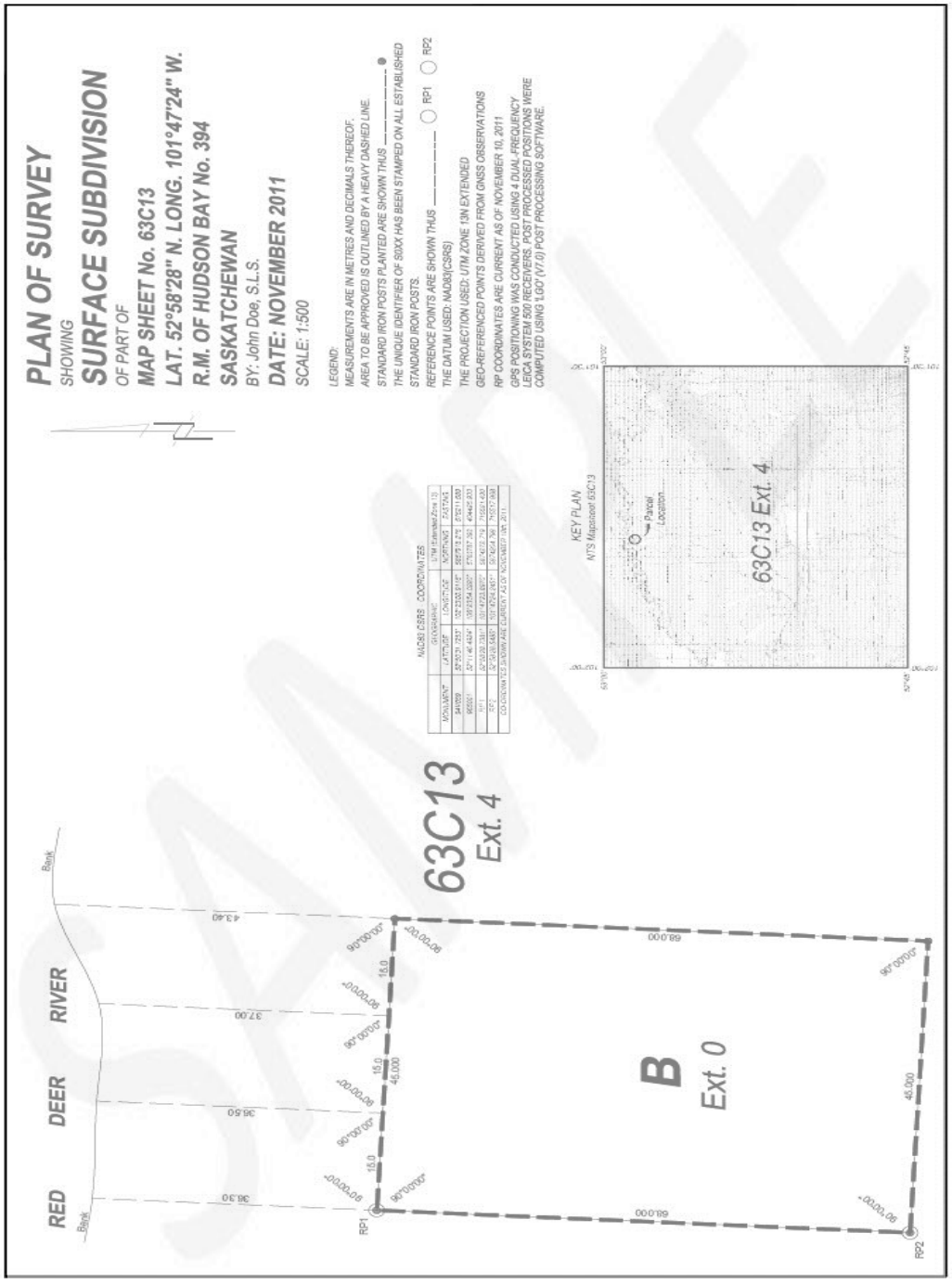
NOTE

The Controller of Surveys may waive any of these instructions, where in the Controller of Surveys opinion special and peculiar circumstances exist justifying a departure from the same

Appendix A


PLAN OF SURVEY
SHOWING
SURFACE SUBDIVISION
OF PART OF
PARCEL 'B', REG'D PLAN No. 94B06008
AND EXISTING
MAP SHEET 73 J 03
AND
SURFACE CONSOLIDATION
OF PART OF
PARCEL 'B', REG'D PLAN No. 94B06008
WITH
MAP SHEET 73 J 03
LATITUDE 54° 09' 06"
LONGITUDE 107° 03' 42"
SASKATCHEWAN
BY: John DOE S.L.S.
DATE: JUNE 2012 - AUGUST 2014
SCALE 1:500
NOTE:
MAP SHEET 73-J-03
Ext. 0
KEY PLAN
SAMPLE

Appendix B


PLAN OF SURVEY
SHOWING
SURFACE SUBDIVISION
OF PART OF
MAP SHEET No. 63C13
LAT. 52°58'28" N. LONG. 101°47'24" W.
R.M. OF HUDSON BAY No. 394
SASKATCHEWAN
BY: John Doe, S.L.S.
DATE: NOVEMBER 2011
SCALE: 1:500
LEGEND:
MEASUREMENTS ARE IN METRES AND DECIMALS THEREOF.
AREA TO BE APPROVED IS OUTLINED BY A HEAVY DASHED LINE.
STANDARD IRON POSTS PLANTED ARE SHOWN THUS
THE UNIQUE IDENTIFIER OF 50XX HAS BEEN STAMPED ON ALL ESTABLISHED STANDARD IRON POSTS.
REFERENCE POINTS ARE SHOWN THUS RP1 RP2
THE DATUM USED: NAD83(CSRS)
THE PROJECTION USED: UTM ZONE 13N EXTENDED
GEO-REFERENCED POINTS DERIVED FROM GNSS OBSERVATIONS
RP COORDINATES ARE CURRENT AS OF NOVEMBER 10, 2011
GPS POSITIONING WAS CONDUCTED USING 4 DUAL-FREQUENCY LEICA SYSTEM 500 RECEIVERS. POST PROCESSED POSITIONS WERE COMPUTED USING 1 GO* (V7.0) POST PROCESSING SOFTWARE.
NAD83 CSRS COORDINATES
MONUMENT
GEOGRAPHIC
LATITUDE
LONGITUDE
UTM Extended Zone 13
NORTHING
EASTING
RP1
RP2
CO-ORDINATES ARE CURRENT AS OF NOVEMBER 10th, 2011
KEY PLAN
NTS Mapsheet 63C13
Parcel Location
63C13 Ext. 4
63C13
Ext. 4
B
Ext. 0
RED RIVER
DEER
Bank
Bank
43.40
37.00
36.50
36.30
68.000
45.000
15.0
90°00'00"
+00.00.06