

## Practice Review Checklist and Reference Guide

The focus of the reviews:

- Compliance with the National Standards, ACLS Code of Ethics, Canada Lands Surveys Act, and the ACLS Practice Manual
- Protection of the Public
- Education of our members

*\*The specific ACLS Checklist for each file is reviewed – the descriptions of ACLS Checklist items contained herein are only one type of ACLS Checklist.*

Description of Item	Reference	Purpose
<b><u>Intake Questionnaire</u></b>		
Years of experience		<ul style="list-style-type: none"> <li>• Perspective for PR manager</li> <li>• metrics</li> </ul>
Experience of staff who work on CLS projects	Canada Lands Surveyors Regulations (SOR/99-142) Section 1(f)	<ul style="list-style-type: none"> <li>• Perspective for PR manager</li> <li>• metrics</li> </ul>
Office style/location		<ul style="list-style-type: none"> <li>• Perspective for PR manager</li> <li>• metrics</li> </ul>
% of work performed on Canada Lands		<ul style="list-style-type: none"> <li>• Perspective for PR manager</li> <li>• metrics</li> </ul>
Confirms scope of work and terms with client prior to commencing project	Practice Manual Sec. 9.4.4	Protection of the Public
Ensures that contracts do not contravene their insurance coverage		Educational
How do you retain your files and data so it can be retrieved for re-examination in the future	Canada Lands Surveyors Regulations (SOR/99-142) Sec. 2(7g)	
Back-up of digital data	Practice Manual Sec. 1.34, 1.35	
Off-site storage of digital data	Practice Manual Sec. 1.34, 1.35	
System for workplace safety	Practice Manual Sec. 1.44	
Sources of research for CLS projects	Practice Manual Sec. 9.4.4	Educational
Do they check National Standards for updates		Educational
Type of equipment used (GPS? Total Station? Other?)		Perspective for PR manager to interpret field records
Equipment maintenance protocols	National Standards Sec. 1.12 Practice Manual Sec. 4.15 – 4.17	
Written protocols for field staff	Canada Lands Surveyors	

	Regulations (SOR/99-142) Section 7(a)	
How do field crews identify themselves to abutting property owners	Practice Manual Sec. 1.39	Protection of the Public
Description of field records		Perspective for PR manager to interpret field records
Describe method of verifying placed monuments	Practice Manual Sec. 4.1, 9.4.5  Section 4.3.3 Quality Control in the Guidelines for RTK/RTN GNSS Surveying in Canada, July 2015 Version 1.2, Natural Resources Canada, Surveyor General Branch	
How are check measurements identified in field records		Perspective for PR manager to interpret field records
Field staff supervision	Canada Lands Surveyors Regulations (SOR/99-142) Section 7(a) Practice Manual Sec. 9.3	
Describe quality control procedures when checking your plan		Perspective for PR manager
Written record of any changes to the scope of work	Practice Manual Sec. 9.4.3	<ul style="list-style-type: none"> <li>• Protection of the Public</li> <li>• Educational</li> </ul>
Do you report to your client	Practice Manual Sec. 9.4.4	
<b><u>Field Work and Field Records</u></b>		
Best Evidence	Practice Manual Sec. 2.4	The best evidence of the boundaries must be thoroughly searched for. Notations are required on field records of evidence found and also of the evidence looked for but not found.
Field Records	Practice Manual Sec. 4.22, 4.23, 9.4.5	All surveys must have corresponding field records of all observational data.
Field Procedure	Practice Manual Sec. 4.1, 9.4.5	Field records should indicate everything found, observed, and done in the field in the course of the survey. The method and progression of the survey should be clearly demonstrated.
Measurement Verification	Practice Manual Sec. 4.1, 9.4.5	Are measurements verified? (mathematical closure or independent measurement).

Fences (hedges, retaining walls, etc.)	National Standards Sec. 1.11 (60), 2.2.4 (36)	Fences and features close to the boundary must be shown on plans.
Description and the location of the project	Practice Manual Sec. 4.18a, 9.4.5	
The names and duties of persons in the field party identified	Practice Manual Sec. 4.18b, 9.4.5	
The type and identification of survey equipment used identified	Practice Manual Sec. 4.18c, 9.4.5	
The date of observations	Practice Manual Sec. 4.18d, 9.4.5	
Each quantitative observation or measurement	Practice Manual Sec. 4.18e, 9.4.5	
A complete description of every monument found, restored or placed, including markings and ancillary monumentation	Practice Manual Sec. 4.18f, 9.4.5	
Searches made for monuments and other physical evidence	Practice Manual Sec. 4.18g, 9.4.5	
If applicable, reasons why monuments cannot be placed where specified in the instructions	Practice Manual Sec. 4.18h, 9.4.5	
The methods used to re-establish lost monuments identified	Practice Manual Sec. 4.18i, 9.4.5	
Searches made for documentary or verbal evidence	Practice Manual Sec. 4.18j, 9.4.5	
Data added to field notes on a date other than that recorded on the page should be so identified	Practice Manual Sec. 4.18k	
north arrow	Practice Manual Sec. 4.19 (1a), 9.4.5	
weather conditions	Practice Manual Sec. 4.19 (1a), 9.4.5	
offset lines and traverse lines identified	Practice Manual Sec. 4.19 (1a)	
names and widths of streets	Practice Manual Sec. 4.19 (1a)	
annotation of instrument stations, interline points, points of intersection, site stations etc	Practice Manual Sec. 4.19 (1a), 9.4.5	
whether angles and distances or coordinates have been set or measured	Practice Manual Sec. 4.19 (1a)	
reference to records of field calculations	Practice Manual Sec. 4.19 (1a)	

the point numbers which relate to the measurements in the schedule of measurements or stored in the data collector	Practice Manual Sec. 4.19 (1a)	
direct check measurements	Practice Manual Sec. 4.19 (1a), 9.4.5	
a record of corrective instructions, if any, to be applied to the data stored in the data collector	Practice Manual Sec. 4.19 (1b)	
a schedule of measurements	Practice Manual Sec. 4.19 (1c)	
a reference to the computer file where the data captured in the field is stored	Practice Manual Sec. 4.19 (1d), 9.4.5	
A record of the mode of operation when using GPS	Practice Manual Sec. 4.19 (2)	
Antenna height measurements and their verification should be recorded	Practice Manual Sec. 4.19 (2), 9.4.5	
A record of the relationship of the "control points" to the actual job	Practice Manual Sec. 4.19 (3)	
The control station name and inscription, the position of the control stations (coordinates, elevations etc), datum and map projection should be provided.	Practice Manual Sec. 4.19 (4)	
For "project control" the geodetic control to which it was tied into should be indicated.	Practice Manual Sec. 4.19 (4)	
In addition, any transformations applied to the GPS derived positions should be provided	Practice Manual Sec. 4.19 (4)	
GPS/GNSS setup pages	Practice Manual Sec. 4.23	
Page numbers	Practice Manual Sec. 9.4.5	
All evidence placed shown and noted	Practice Manual Sec. 4.18f	
Placed evidence has redundant measurements	Practice Manual Sec. 4.1	
<b><u>Survey Report (if applicable)</u></b>		
Description of survey problems encountered, and how they were dealt with	National Standards 5.1.3 (4, 6)	A survey report is required if more information or documentation is required than what is shown on the surveyor's submitted plans and or field notes. A survey report is not required if there is nothing more

		to report.
Any affidavits regarding evidence of boundaries taken during the course of the survey		per ACLS Checklist*
Copies of any plans or other documents relevant to the survey that are not of public record and that have not been previously submitted		per ACLS Checklist*
Reports on verbal or other evidence obtained		per ACLS Checklist*
Legal principles used to restore or re-establish monuments		per ACLS Checklist*
How access will be provided to parcels on First Nation Lands when those parcels will be used to define interests to be registered in the Indian Lands Registry		per ACLS Checklist*
Discrepancies with previous surveys and how they were dealt with		per ACLS Checklist*
Geo-referencing information		per ACLS Checklist*
Any imagery and terrestrial photographs of water boundaries		per ACLS Checklist*
<b>Plan Title</b>		
CLSR and LTO/LRO plan number blocks present on the plan	See specimen plans	per ACLS Checklist*
Specify Sheet x of n for multi sheet plans	National Standards 8.3 (25)	per ACLS Checklist*
Plan of Survey of (boundary, parcel designator, easement, row, licence, etc.)	National Standards 2.2.3 (12a) 2.4.3 (4,5), 2.3.3 (4), 2.5.5 (11)	per ACLS Checklist*
Name and number of Reserve (spell out), National Park of Canada, etc.	National Standards 2.2.3 (12c)	per ACLS Checklist*
New Parcel designators shown, (Lot #, Block #, Quad, Road, Subdivision names...)	National Standards 2.2.3 (12a)	per ACLS Checklist*
The name of the subdivision, Town site, community, and/or municipality in which the survey is located	National Standards 2.2.3 (12b)	per ACLS Checklist*
Section, Township & Range, or Lot and Concession (note if theoretical)	National Standards 2.2.3 (12d)	per ACLS Checklist*

The District or County (if appropriate)	National Standards 2.2.3 (12e)	per ACLS Checklist*
The Province or Territory	National Standards 2.2.3 (12f)	per ACLS Checklist*
Plan Scale Ratio and Bar Scale shown to standard	National Standards 2.2.3 (13)	per ACLS Checklist*
Plot Size Stated	National Standards 2.2.3 (13 2.2.2 (11))	per ACLS Checklist*
Period of Field Survey Statement	National Standards 2.2.3 (14)	per ACLS Checklist*
Comprising Statement shown (when appropriate): includes legal descriptions of underlying parcels that are replaced by new parcels	National Standards 2.2.3 (15)	per ACLS Checklist*
<b>Legend</b>		
Explanation of other line types	National Standards App C Table 2 & 3	per ACLS Checklist*
Source of any derived data, included methods used to plot features		per ACLS Checklist*
Explanation of all symbols shown	National Standards Sec. 2.2.3 (16b) App C Table 1 Recommended Symbols	per ACLS Checklist*
Bearing Statement	National Standards 2.2.3 (16a) 1.8 (41, 42)	per ACLS Checklist*
Explanation of all abbreviations used	National Standards 2.2.3 (16c) App D	per ACLS Checklist*
Lands or boundaries dealt with shown thus	National Standards 2.2.4 (26) App C Table 2	per ACLS Checklist*
Distance Units (horizontal at general ground level) specified	National Standards 2.2.3 (17a)	per ACLS Checklist*
Scale Factor specified	National Standards 2.2.3 (17a)	per ACLS Checklist*
Monument Markings described	National Standards 1.3 (9) 2.2.3 (17b)	per ACLS Checklist*
Ancillary Monumentation described	National Standards 2.2.3 (17c)	per ACLS Checklist*
Boundaries Cut and Blazed	National Standards 2.2.3 (17d)	per ACLS Checklist*
Supplementary Field Notes/Survey Report Cross Reference if applicable	National Standards 2.2.3 (17e)	per ACLS Checklist*
<b>Georeferencing</b>		
The plan diagram shows all GCPs and other control points used in the survey	National Standards 1.9 (44, 48)	per ACLS Checklist*
The survey is referenced to a minimum of 2 GCPs	National Standards 1.9 (45 – 47, 54)	per ACLS Checklist*
The plan diagram shows ties to	National Standards 2.2.4 (46)	per ACLS Checklist*

GCPs		
Table of coordinates of all GCPs and any other control survey monuments shown	National Standards 2.2.4 (47)	per ACLS Checklist*
The coordinate projection shown	National Standards 2.2.4 (47a)	per ACLS Checklist*
The zone of the coordinate system shown	National Standards 2.2.4 (47b)	per ACLS Checklist*
The combined scale factor for each GCP shown	National Standards 2.2.4 (47c)	per ACLS Checklist*
The estimated absolute accuracy of all GCPs are stated in the coordinate table	National Standards 2.2.4 (47d)	per ACLS Checklist*
The survey is geo-referenced with respect to the NAD83 (CSRS)	National Standards 1.9 (43)	per ACLS Checklist*
The version (epoch) of the NAD 83 (CSRS) datum used is shown	National Standards 2.2.4 (47e) 1.9 (51)	per ACLS Checklist*
A statement regarding how coordinates were obtained and how any adjustment was performed is shown on the plan	National Standards 2.2.4 (47f)	per ACLS Checklist*
Location of GCPs included on the Key Plan (if required for clarity)	National Standards 2.2.4 (48)	per ACLS Checklist*
The ellipsoid height of each GCP is shown	National Standards 1.9 (52)	per ACLS Checklist*
The estimated absolute accuracy of GCPs are 0.10 metres or better	National Standards 1.9 (49)	per ACLS Checklist*
All GCPs are physically marked on the ground	National Standards 1.9 (44, 48)	per ACLS Checklist*
Absolute Accuracy of Survey is 0.20 metres or better	National Standards 1.10 (55, 57, 58) 1.9 (53, 54)	per ACLS Checklist*
GCPs are geo-referenced by an approved method	National Standards 1.9 (50)	per ACLS Checklist*
GCP points are labeled with "GCP" on diagram	National Standards App 3 Table 1	per ACLS Checklist*
Georeferenced to absolute accuracy in accordance with 11.3 (9) and (13)	National Standards 11.3 (9, 13)	per ACLS Checklist*
<b>Signatures</b>		
Digital Seal on Electronic Documents	National Standards 2.2.7 (53)	per ACLS Checklist*
SGB Endorsement block shown	Available on the Project Details page in MyCLSS	per ACLS Checklist*
All Necessary land administrator and planning endorsement block	See specimen plans	per ACLS Checklist*

shown		
Ownership of all lands dealt with have been researched and determined	Practice Manual Sec. 2.1	per ACLS Checklist*
SGB File No. And Reference No.	See specimen plans	per ACLS Checklist*
Appropriate Endorsements and Affidavits	National Standards 2.2.6 (51) 14.7 (70)	per ACLS Checklist*
Surveyor's Certification and Seal; Certified Correct	National Standards 2.2.3 (18) Practice Manual Sec. 1.29 (37{1}) Sec. 1.31 (a)	per ACLS Checklist*
Date of Certification matches the date the plan is issued	National Standards 1.31 (b)	per ACLS Checklist*
<b>Plan Diagram</b>		
North arrow shown and diagram oriented so that north points toward top of plan	National Standards 2.2.4 (19)	per ACLS Checklist*
Connect to legal survey fabric within 300 m.	National Standards 1.11 (59)	per ACLS Checklist*
Evidence used to support placed monumentation is shown	National Standards 1.6 (26)	per ACLS Checklist*
All lost or disturbed monuments used in this survey have been re-established (Re-est)	National Standards 1.5 (14)	per ACLS Checklist*
All bent or obliterated monuments used in the survey have been restored (Res)	National Standards 1.5 (16)	per ACLS Checklist*
Authorized monumentation was used and is described in the legend	National Standards 1.2 (3, 5, 6)	per ACLS Checklist*
Table of coordinates of main monuments	National Standards 2.2.4 (26)	per ACLS Checklist*
Monuments of a previous survey that have been deemed of no value have been removed	National Standards 1.6 (28)	per ACLS Checklist*
The areas of each parcel, road, R/W's etc. are shown to the required precision	National Standards 2.2.4 (31) App B Table 2	per ACLS Checklist*
Unsurveyed road forming boundary of lands dealt with correctly	National Standards 2.2.4 (25) 1.6 (27)	per ACLS Checklist*
All monuments are marked in accordance with current standards	National Standards 1.3 (7-9)	per ACLS Checklist*
Descriptions of the types, condition and markings of monuments used in the survey	National Standards 2.2.4 (42)	per ACLS Checklist*



Detail, tables, insets required for clarity	National Standards 2.2.4 (22)	per ACLS Checklist*
Ancillary monumentation is used and the type and position is depicted on the plan	National Standards 1.4 (10-12)	per ACLS Checklist*
Grid bearings and ground distances shown between monuments unless otherwise specified	National Standards 2.2.4 (21, 27, 28)	per ACLS Checklist*
Curve Data shown	National Standards 2.2.4 (29)	per ACLS Checklist*
No traverse lines, offsets or radial ties. Unless fundamental to the survey e.g. OHWM	National Standards 2.2.4 (30)	per ACLS Checklist*
Width of road, R/W or easement dealt with and the name of the street if known	National Standards 2.2.4 (32)	per ACLS Checklist*
Parcel Designation shown (Lot, Block, Road, RW, Quad, etc)	National Standards 2.2.4 (33)	per ACLS Checklist*
Adjacent parcels and plan numbers shown, boundaries shown with dashed lines except solid where measured	National Standards 2.2.4 (34) App C Table 3	per ACLS Checklist*
Underlying parcels and plan numbers are in phantom or broken	National Standards 2.2.4 (35)	per ACLS Checklist*
Limited rights which have registered land interests affecting the lands dealt with are shown	National Standards 2.2.4 (37)	per ACLS Checklist*
All evidence searched for or placed reported on plan. Denote FNE when no evidence found of previously existing monuments	National Standards 2.2.4 (41)	per ACLS Checklist*
Description of the types of control monuments	National Standards 2.2.4 (44)	per ACLS Checklist*
Monument every km or as otherwise specified	National Standards 1.6 (19b)	per ACLS Checklist*
Nature and position of features close to boundaries are shown	National Standards 2.2.4 (36) 1.11 (60)	per ACLS Checklist*
Reason for witness monuments and witness markings shown	National Standards 1.6 (23, 24) 1.3 (8)	per ACLS Checklist*
Dimensions of existing boundaries agree within accuracy requirements with previous survey with discrepancies being shown and reported		per ACLS Checklist*

New Parcels, boundary retracements and intersections are marked by required monumentation	National Standards 1.6 (19, 20)	per ACLS Checklist*
All Water Bodies within lands dealt with shown in dashed lines	National Standards 2.2.4 (36)	per ACLS Checklist*
Names of water bodies shown	National Standards 2.2.4 (38)	per ACLS Checklist*
Plan shows which lines have been cut and blazed according to current standards	National Standards 1.7 (29-36) 14.2 (29)	per ACLS Checklist*
Access is shown to each lot dealt with by the plan (if not apparent) (First Nation Lands)	National Standards 2.2.4 (39)	per ACLS Checklist*
The full extent of the lot containing ROW is depicted on the plan (or key plan)	National Standards 2.5.4 (6)	per ACLS Checklist*
Plan shows line markers placed on boundaries	National Standards 1.7 (37-40)	per ACLS Checklist*
Right of way is monumented in accordance with current standards	National Standards 1.6 (22)	per ACLS Checklist*
The area of the ROW/road specified on plan	National Standards 2.5.4 (10)	per ACLS Checklist*
<b><u>Background Information</u></b>		
Key Plan and Large Scale Detail insets oriented with diagram	National Standards 2.2.4 (24)	per ACLS Checklist*
Dashed lines used when depicting surrounding lot fabric	National Standards App C Table 3	per ACLS Checklist*
Key Plan shown	National Standards 2.2.4 (23)	per ACLS Checklist*
Names of places, features and roads shown	National Standards 2.2.4 (38)	per ACLS Checklist*
Parcel Remainders shown	National Standards 2.2.5 (49, 50)	per ACLS Checklist*
Reserve / park boundaries labeled on plan (if applicable)		per ACLS Checklist*
Name and Number of Reserve on body of plan (if applicable)		per ACLS Checklist*
<b><u>Plan Legibility, Format</u></b>		
Plan clearly documents the nature and position of the boundaries dealt with by the survey	National Standards 2.2.1 (5)	per ACLS Checklist*
Plan is well organized, uncluttered with good choice of layout and space utilization	National Standards 2.2.2 (6)	per ACLS Checklist*
Spelling correct (Band Names and Places)		per ACLS Checklist*
Plotting to scale	National Standards 2.2.2 (7, 11)	per ACLS Checklist*

	2.2.4 (22)	
<b>Business Communication</b>		
Contract or letter explaining scope of work and fees		
consent to survey from the First Nation		
title research		
Communication with SGB		
Communication with the client		
Communication with the Lands Manager		
plan approval from the First Nation		
<b>Survey Report</b>		
Survey Report (if required) is included in returns	National Standards 4.1 (1, 2)	per ACLS Checklist*
Survey Report complies with Standards	National Standards 4.2 (3-7, 9)	per ACLS Checklist*
Survey Report is Certified Correct, c/w digital seal	National Standards 4.3 (10) CLS Regulations (38)	per ACLS Checklist*
<b>Field Sortie</b>		
Does plan accurately reflect situation on site?		
Are monuments in place?		
Are monuments well marked?		
Are boundaries blazed? (if blazing was indicated on the plan)		
Look at FNE locations		
Are features close to boundaries shown?		
Get feedback from client and First Nations contact about their experience with the surveyor		