

The date of survey is the date on which measurements were completed on the ground and is to be obtained from field books.

Plans must show:—

The location of new centre line of road and new limits of highway, with respect to original or old established limits of road.

All markings, with descriptions, markings made or planted, land ties, etc. All measurements and bearings necessary to show clearly the land required for widening purposes, the direction and length of all lines or courses and necessary to re-establish the limits of the highway at any point where they may become obliterated or lost.

The names, frontages, and amount of widening and acreage (in each case) of owners affected by the widening or abutting on the highway.

Position and ownership of poles, railways, houses, sheds, structures or improvements of any kind, wells, fences, trees, etc.

A complete profile of the centre line of road with all information re levels of culverts, bridges, buildings, structures, bench marks, etc.

TRAVERSE BOOK			
Sta.	Angle Measured to Right	Astro. Bearing	Corrected Astro. Bearing
0 00		107° 19' 50"	No check obtained as yet
13 00	177° 51'	105° 10' 50"	No check obtained as yet
26 53.7	183° 35' 10"	108° 46'	No check obtained as yet
40 89.5	184° 04'	112° 50'	112° 50'
53 64	137° 45'	70° 35'	70° 35'
54 81.5	215° 57' 30"	106° 32' 30"	106° 32' 30"
63 36	174° 48' 50"	101° 21' 20"	101° 21' 10"
70 76.4	186° 52' 10"	108° 13' 30"	108° 13' 20"
77 14.5	269° 11' 30"	197° 25' 00"	197° 24' 50"
84 28.2	92° 20' 30"	109° 45' 30"	109° 45' 20"
98 34.0	176° 59'	106° 44' 30"	106° 44' 20"
111 54.5	178° 16' 40"	105° 01' 10"	105° 01'
124 30.0	184° 34' 50"	109° 36'	109° 35' 40"
137 83.5	175° 26' 20"	105° 02' 20"	105° 02'
151 11.6	179° 51' 30"	104° 53' 50"	104° 53' 30"
164 57.0	182° 43' 50"	107° 37' 40"	107° 37' 20"
178 52.0	180° 04'	107° 41' 40"	107° 41' 10"
220 87.4	175° 28' 40"	103° 10' 20"	103° 09' 50"
234 97.4	188° 17' 40"	111° 28'	111° 27' 30"
249 45.8	178° 44' 10"	110° 12' 10"	110° 11' 40"
263 56.1	177° 55' 30"	108° 07' 40"	108° 07'
279 26.5	180° 46' 10"	108° 53' 50"	108° 53' 10"
		109° 00' 40"	109° 00' 00"
308 13.9	179° 31' 20"	108° 32'	108° 31' 20"

Plans or profiles are to be made to horizontal scale of one-inch to 100 ft., and one inch to 10 ft. for vertical scale of profiles.

The origin of the bearings must be stated on the plan.

When the bearings on a plan are referred to more than one meridian, the point of change of reference meridians must be clearly shown on plan. This change must not be made at an angle. One course must be shown with two bearings, one referred to the easterly and one referred to the westerly reference meridian.

The following rules are to be followed in preparation of plans:—

(a) Centre line run on ground is in vermilion; (b) new boundaries or limits of provincial highway are in full black lines; (c) boundaries where ascertained on ground of original township surveys or registered plans are shown in full black lines; (d) fences and lines which are not surveyed boundaries are shown in broken black lines; (e) centre line, frontage measurements and profile measurements are in feet and decimals; (f) other plan measurements are in feet and inches; (g) bearings are in degrees, minutes and seconds; (h) wooden stakes planted are indicated by square black marks, thus \blacksquare ; (i) standard survey monuments are indicated by black marks, thus \square .

EXAMPLE SHOWING APPLICATION OF SURVEYORS' TABLES

Taken Thursday, Dec. 12th, 1918, approx. 10 p.m., stand. time

Instrument at Sta. 53+64

Sighted station, 40+89.5

Latitude, 43° 14'

Longitude, 79° 48' = 5h. 19m. 12s.

Convergence 1.65 miles \times .815 (con. for 1 mi.) = 1.34, referred to Mer. of Long. 79° 50'

Pt. sighted.	Cir.	Hor. Cir. Rdg.	Watch.
Ref. Point	L.	292° 51'	
Ref. Point	R.	112° 50' 30"	
Polaris	L.	359° 12'	3h. 33m. 07s. }
Polaris	R.	179° 11'	3h. 35m. 35s. }
Polaris	R.	179° 09' 30"	3h. 40m. 25s. }
Polaris	L.	359° 08' 30"	3h. 43m. 10s. }
Ref. Point	L.	259° 51'	
Ref. Point	R.	112° 50' 30"	

*First set.

†Second set.

α Ceti, R., 0° 00'	2h. 57m. 20s.
α Ceti, R.A.	2h. 58m. 05s.
Watch correction, Dec. 12th, 1918	+45s.

Computation, First Set

Mean watch times	= 3h. 34m. 21s.
Watch correction	= +45s.
θ	= 3h. 35m. 06s.

Tab. Az. for 3h. 30m., Lat. 42°	= 359° 14.7'
Variation for 5m. 06s.	= — 1.8'
Variation for 1° 14' Lat.	= — 1.0'
Convergence ref. to Mer. of Long. 79° 50' ...	= — 1.3'
Bearing of Polaris	= 359° 10.6'
H.C.R. on Polaris	= 359° 11.5'
Correction to H.C.R.	= — 0.9'
H.C.R. on Ref. Line	= 112° 50.8'
Bearing of Ref. Line	= 112° 49.9'

Computation, Second Set

Mean watch times	= 3h. 41m. 47s.
Watch correction	= +45s.
θ	= 3h. 42m. 30s.
Tab. Az. for 3h. 40m., Lat. 42°	= 359° 11.3'
Variation for 2m. 30s.	= — 0.9'
Variation for 1° 14' Lat.	= — 1.0'
Convergence	= — 1.3'
Bearing of Polaris	= 359° 08.1'
H.C.R. on Polaris	= 359° 09.0'
Correction to H.C.R.	= — 0.9'
H.C.R. on Ref. Line	= 112° 50.8'
Bearing of Ref. Line	= 112° 49.9'
This bearing taken to be	112° 50'

EXAMPLE OF METHOD OF VERTICAL CIRCLE OF POLARIS

Astronomical Observation, Weds., Sept. 26th, 1917

*Inst. at Sta., 3847+90.

Sighted Sta., 3843+01.2

Bearing of line as given by traverse, 27° 23' 40"

Lat. at point of observation, 44° 34'

Convergence—1.1', referred to Mer. Long. 75° 45'

Watch correction not known.

Point Sighted.	Cir.	Hor. Cir. Rdg.	Watch.
Polaris	R.	0° 00'	21h. 25m. 45s.
Polaris	L.	180° 00'	21h. 27m. 05s.
B. Aquarii	R.	0° 00'	21h. 30m. 40s.
Polaris	R.	179° 58'	21h. 33m. 40s.
E. Aquarii	L.	179° 58'	21h. 36m. 50s.
Ref. Point	L.	26° 15'	
Ref. Point	R.	206° 15'	