
LAND SURVEYING

TECHNICAL MANUAL FOR REGISTERED LICENSED SURVEYORS

01 June 2015

FOREWORD

The Survey Act has been certified and published in the gazette of the Democratic Socialist Republic of Sri Lanka on the 4th of October 2002. One of the stated objectives of the Act is, "TO REGULATE THE CARRYING OUT OF LAND SURVEYS"

More than a decade has gone by and now a set of REGULATIONS under the Act is ready for publishing. At this stage the Regulations are being published as a "Trial Run" so as to be able to monitor the progress in all parts of the country. In short these Regulations will encourage the members of the Survey Profession to attend to their professional work in a more uniform manner and at the same time maintain standards and accuracy.

The efforts and sacrifices made by many with regard to the drafting of these Regulations, which has been time consuming but meticulous, go down in record, with a deep sense of gratitude.

My appreciation in this regard is extended to:

- The Surveyor Generals of the past decade
- All Senior Officers of the Survey Department
- Office Bearers and members of the Surveyors' Institute of Sri Lanka
- Office Bearers and members of the District Associations of Registered Licensed Surveyors.
- Past and present Members of the Land Survey Council

The Regulations are seeing the light of day after prolonged discussion and deliberation with all the stake-holders, and I fervently believe that this would benefit all members of the Survey Profession in particular and the country at large.

With further sophistication in instrumentation and methodology in the future, improvements to standards and accuracies could be achieved.

All of us in the profession, I believe, owe a responsibility to the society at large, in providing high quality land information products and services, through our professional training, qualifications, experience and further strengthened by professional ethics. The regulations would be an added asset to all of us in the profession towards giving the society a better tomorrow.

P.M.P. Udayakantha

Surveyor General / Chairman of the Land Survey Council

Surveyor General's Office

Colombo 5

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1.0 General

- 1.1** Following are the Technical specifications issued to all Registered Licensed Surveyors.
- 1.2** Surveyor General shall issued technical specifications in instances where problems arise on any matter that is not covered by these technical specifications with regard to methods, accuracy and standards of any type of land surveys.
- 1.3** Registered Licensed Surveyors shall follow these technical specifications when carrying out all land surveys.

2.0 Principles

- 2.1** Land Surveying shall be carried out with such equipment and by such methods as will attain the standards and accuracy prescribed herein under the Survey Act No.17 of 2002, and shall be the duty of every Registered Licensed Surveyor (hereafter referred to as RLS) at all times to apply such checks and tests to his work as may be necessary to achieve those standards.
- 2.2** A RLS shall make comprehensive field notes at the same time of the surveying and shall maintain them according to the standards laid down in section15.
- 2.3** A RLS engaging in Land Surveying shall make him-self conversant with the provisions of the Survey Act and all other relevant Legislative Enactments/Acts, Regulations, Technical Manuals knowledge of which is necessary to enable him to efficiently discharge his duties as a RLS.
- 2.4** A RLS must measure boundaries by the most direct method that is reasonable and practicable.

3.0 Methods of Surveys

Any appropriate method from the following methods of surveying may be used without violating the basic principles of surveying.

- i) Chain Surveying
- ii) Theodolite with chain or EDM / Total station Surveying
- iii) Plane Table Surveying
- iv) Photogrammetry
- v) Spirit Leveling / Theodolite heighting /
- vi) Surveys done with Global Navigation Satellite System (GNSS)
- vii) Data extraction from Satellite / UAV Imagery
- ix) Any other air borne sensor method
- x) Any combination of above methods or
- xi) Any other appropriate method to meet the requirements.

4.0 Linear measurements / Distances

Linear measurements shall be in metric units. (See **Appendix 1** for conversion factors).

Corrections, where necessary, shall be applied to the linear measurements as applicable.

5.0 Angles / Bearings

Angles/Bearings shall be measured in degrees, minutes and seconds of an arc. Corrections, where necessary, shall be applied to the measured Angles/Bearings

6.0 Meridians

All surveys done for transfer of ownership or change of boundaries of land parcels including Acquisition Surveys and large scale development surveys shall be connected to the **National Grid Co-ordinate System**. However, where control points with respect to **National Co-ordinate System** are not accessible, surveys may be done on magnetic meridian (See **Appendix 2** for the parameters related to the National Geodetic Control).

7.0 Standards and Accuracy:

Necessity for the highest practical accuracy has to be strongly impressed upon the RLS. In certain instances no means exist by which errors can be immediately detected. Therefore, RLSs who are engaged in land surveying should apply sufficient checks and re-checks on their work to ensure that the required standards and accuracies are maintained.

8.0 Horizontal Control

8.1 Conventional Traverses

8.1.1 Limits of error of Angular Closure

(I) The maximum angular error allowed for each class of traverse is as follows:

- | | | |
|-----|-------------------------|------|
| (a) | For primary traverses | - 1' |
| (b) | For secondary traverses | - 2' |
| (c) | For tertiary traverses | - 3' |
| (d) | For all other traverses | - 3' |

Note: Bearings of primary and secondary traverses will be determined by the included angle method with measurements of 8 zeros and 4 zeros respectively.

8.1.2 Distribution of Angular Misclosures :

8.1.2.1 Angular misclosures, which are within the allowable limits, shall be distributed proportionately based on the number of lines in the traverse unless there is a good reason to the contrary.

8.1.3 Other specifications:

Traverses					
	Primary	Secondary	Tertiary	All other	Detail
Angular Bookings	Nearest one Second	Nearest 30 seconds	Nearest Minute	Nearest Minute	Nearest Minute
Control in direction	Every 20 stations interval	Every 20 stations interval	Every 20 stations interval	Every 20 stations interval	Every 20 stations interval
Starting point accuracy	Trig/1 st order GNSS Control Points	Primary or higher order/2 nd or higher order GNSS Control Points	Secondary or higher order/3 rd or higher order GNSS Control points	Tertiary or higher order/3 rd or higher order GNSS Control Points	Detail or higher order/3 rd or higher order GNSS Control Points
Closing Point	Primary or higher order/1 st order GNSS Control Points	Secondary or higher order/3 rd or higher order GNSS Control Points	Tertiary or higher order/3 rd or higher order GNSS Control Points	Tertiary or higher order/3 rd or higher order GNSS Control Points	Tertiary or higher order/3 rd or higher order GNSS Control Points
Angle observation	(see note under Para 7.2.1.1)	(see note under Para 7.2.1.1)	Both directions	One direction	One direction

8.1.4 Linear Measurements

8.1.4.1 Linear measurements for conventional traversing should be as follows:-

	Traverse				
	Primary	Secondary	Tertiary	All other	Detail
Chaining	Both Directions	Both directions	Both directions	One direction	One direction
The permissible discrepancy in cm between 1 st and 2 nd chaining	$0.673\sqrt{m}$ where m is the distance of a line in meters	$0.673\sqrt{m}$ where m is the distance of a line in meters	$0.673\sqrt{m}$ where m is the distance of a line in meters	-	-
Standard Correction	To be applied	Not necessary	Not necessary	Not necessary	Not necessary
Slope correction	Degrees & minutes	Degrees & minutes	Degrees & minutes	Degrees & minutes	Degrees & minutes
Other corrections	To be applied	To be applied	To be applied	To be applied	To be applied
Chain length bookings in metre up to	Third decimal	Second decimal	Second decimal	Second decimal	Second decimal

8.1.5 Limits of error of Closure in Co-ordinates

8.1.5.1 The maximum error allowed for traverses will be calculated from the formula $C\sqrt{K}$ meters, where K will be the length of the traverse in kilometers error is given in meters. The value of C will be as follows:-

- | | | | |
|----|--|---|------|
| a) | For Town Survey Primary Traverses | - | 0.32 |
| b) | For other Primary Traverses | - | 0.48 |
| c) | For Town Survey Secondary Traverses | - | 0.48 |
| d) | For other Secondary Traverses | - | 0.79 |
| e) | For Town Survey Tertiary Traverses | - | 0.79 |
| f) | For other tertiary traverses and close circuit traverses | - | 1.27 |
| g) | For all other detail traverses | - | 1.58 |

8.2 National Standards for Control Traversing

In any selected survey area where control traversing is necessary, action should be taken to establish horizontal geodetic control points using GNSS with a density of 2km or less. Therefore the maximum distance of a traverse shall be limited to 3km. Appropriate type of traverses should be used and established using the technology and instruments as per the para 3.0. However the class of control may be selected to suit the requirements of the clients for surveys carried out. Accuracy of the control survey carried out for clients other than the government can be selected according to the need of the client.

Control Traversing	Accuracy
First order traverse point	1:50,000
Second order traverse point	1:30,000
Third order traverse point	1:20,000

Schedule 1

8.2.1 Usage of Monuments for Traverse Control Points:

There are three levels of traverses namely, First Order, Second Order and Third Order. For each level of traverse point a specific type of monument should be used to maintain required accuracy as given in Schedule 1.

Order of the Control Point	Types of Monuments to be used
First Order traverse point	A6, B1, B2, B3
Second Order traverse point	A6, B1, B2, B3
Third Order traverse point	A6, B1, B2, B3 and B4

Schedule 2

8.2.2 Angular measurements and linear measurements of Total Station traverses:

Angular and linear measurements of total station traverses should be booked as per **Appendix 4**. Specification for angular and linear measurements, permissible discrepancy should be as per **Schedule 3**.

8.2.3 Specifications for Control Survey Traverses

In general maximum precautions should be taken in making linear and angular measurements in order to maintain high standards of accuracy. Requirement of the Survey decides the Order of the traverse to be run. Following specifications should be followed to achieve accuracies of traverses in each category.

8.2.4 Traverses in each order to be run as follows

Traverse	Start	End
1 st Order	Tertiary GNSS	Tertiary GNSS
2 nd Order	Tertiary GNSS or 1 st order Traverse Station	Tertiary GNSS or 1 st order Traverse Station
3 rd Order	Tertiary GNSS or 1 st order Traverse Station or 2 nd order Traverse Station	Tertiary GNSS or 1 st order Traverse Station or 2 nd order Traverse Station

In general maximum precautions should be taken in making linear and angular measurements in order to maintain high standards of accuracy. Requirement of the Survey decides the Order of the traverse to be run. Following specifications should be followed to achieve accuracies of traverses in each category.

8.2.5 Distribution of Coordinate Misclosure:

Distribution of coordinate misclosure is allowed only if it is within the allowed limits. The error allowed will be in metres on applying the $C\sqrt{K}$ (K– length of traverse in km) formula. Error obtained shall be determined by the following formula “The square root of the sum of the squares of the differences in latitude and in departure”. Linear misclosure shall be distributed according to the **Bowditch Rule**. For the value of C as per **Schedule 3**

8.3 Connecting Surveys to National Grid (When required by the nature of the work)

Whole expectation of this activity is to ensure proper identification of land at a subsequent time. If the land surveyed is more than two hectares, the survey has to be connected direct to National Grid by connecting to existing traverse or a survey. In other cases following methods are allowed in order to reduce the complexity of activities.

1. If the survey is carried out in an area which has been already surveyed, connecting the new survey to old survey by a direct connection or by a fixation is required.
2. In an unsurveyed area or in a main area of a Topo Survey, one of the following methods can be used to connect the survey to national grid in a less precise manner.
 - i. Connect to an old traverse, survey
 - ii. Get coordinates of one or two defined points on boundary or inside the land in order to fix to national grid by a simple GPS equipment or a smart-phone with GPS positioning capability
 - iii. Mark the land in a satellite image (like google or bing map)
 - iv. Mark the relative location of land on a 1:10,000 sheet

	Description	Type of Control Traverses			
		1 st Order	2 nd Order	3 rd Order	Total Station detail
Angular measurements	Angular Observation accuracy nearest	1"	3"	5"	5"
	Angular closing error limit	30"	1'	2'	3'
	Method of Angular measurements	Included angle	Included angle	Included angle	Azimuth
	Number of zeros (Hz)	6 (0°, 30°, 60°, 90°, 20°, 150°)	4 (0°, 45°, 90°, 135°)	2 (0°, 90°)	
	Number of zeros (V)	4	2	1	
	Faces	2	2	2	
	Max. Std dev of mean of Hz	± 4"	± 8"	± 12"	
	Max. Std dev of mean of V	± 8"	± 20"	± 30"	
Linear measurements	Station Spacing (m)	200-800	100-300	50-100	
	Length measurements	Dual direction	Dual direction	Dual direction	One direction
	Permissible Discrepancy. in mm between mean of D/R measurements	5mm	5mm	5mm	Not applicable
	Max. Std dev of mean of dist measurement	5mm	5mm	5mm	
	Standard Correction (Temperature & Pressure to be fed at the time of observation)	Yes	Yes	Yes	
	Instrument & Target Height	Yes	Yes	Yes	
	Accuracy of Instrument & Target Height	± 10 mm	± 10 mm	± 10 mm	
	Accuracy of Temperature	± 1° C	± 1° C	± 1° C	
	Accuracy of Pressure	± 5 mbar	± 5 mbar	± 5 mbar	
Accuracy	Az Control	20 Stations	25 Stations	30 Stations	
		3 Intermediate Tertiary GNSS to be established in case of exceeding above limit			
	Az Closure	5"√N ; N is no of Stns	10"√N ; N is no of Stns	20"√N ; N is no of Stns	
	MSL Correction	Yes	Yes	Yes	
	Coordinate closing limits Value of C (CVK , K – length of traverse in km)	0.2	0.3	0.4	

Schedule 3

9.0 Vertical Control:

9.1 Datum

Mean Sea Level is the datum of the Geodetic levelling of Sri Lanka and all levelling should be connected to it. An arbitrary datum may be used only for isolated work depending on the requirement and should be specific on the plan.

9.2 Classification of Level lines:

The monument types and specifications for Geodetic leveling to be used are described in **Appendix 3** pages 1 to 4

9.2.1 Primary leveling – PL

Geodetic Primary Levelling network of Sri Lanka was established by precise levelling. Information is fully described in volume I of the Report on the Geodetic Levelling of Ceylon. The descriptions and values of Fundamental and Primary benchmarks are published in volume II of the Report.

9.2.2 Secondary Leveling - SL

Secondary Leveling is leveling of precision level lines run along important roads to break down the Primary Net, starting on primary benchmark and closing on benchmark in primary level line or benchmark in other secondary level line.

9.2.3 Tertiary Levelling - TL

Tertiary Levelling is levelling by either precise or ordinary methods level line run along slightly less important than secondary lines starting and closing on benchmark of primary, secondary, or other tertiary lines.

9.2.4 Minor Levelling – ML

Minor levelling is levelling of short lines by ordinary methods to break down the net formed by primary, secondary, or tertiary lines or to connect any small scheme of levelling to the level Net.

Minor lines will not exceed 12 km in length in flat country. Minor lines should be in every case start and close on benchmarks of Type E or higher order.

9.2.5 Detail Levelling - DL

Detail level lines will break down the level net further in order to enable the RLS to decide in which direction the spot height lines should be established. Detail levelling is levelling for spot heights and of all detail. These level lines should not exceed 5 km in length.

9.3 Precise Levelling

Required difference of stadia hair readings and back and fore levelling differences in primary levelling and Secondary levelling with standard Precise Level equipment are given in **Schedule 4**.

Condition of Agreement	Must not exceed	
	Primary	Secondary
The difference of stadia hair readings	0.006096 m	0.012192 m
The difference of level hair readings on one staff (back and fore)	0.000457 m	0.000610 m
difference of the sum of the stadia hair and the sum of the level hair readings	0.001067 m	0.001524 m
The stadia distance	40 m	40 m
The discrepancy between back and fore levelling for each section and for each line	$0.00276\sqrt{k}$ m	$0.00386\sqrt{k}$ m

Schedule 4

The limits of errors remain unchanged in conventional methods too.

$$\text{Primary} = 0.003\sqrt{k}$$

$$\text{Secondary} = 0.004\sqrt{k}$$

Where, k is the total length of level line in Kilometres.

- 9.4 When Digital precise levels are used for Primary and Secondary levelling with bar coded staves, the fore and back levelling differences must not be exceeded as given in **Schedule 5**.

Condition of Agreement	Primary	Secondary
Difference between First observation level difference and Second observation level difference	0.00005m	0.0001m
The stadia distance	40m	60m
The discrepancy between Fore and back levelling for each section and for each line	$0.00276\sqrt{K}$ m	$0.00386\sqrt{K}$ m

Schedule 5

Where K is the total length of the level line in km.

- 9.5 For the **Tertiary, Minor and Detail levelling** following standards of accuracy must be maintained.

Limit of error of line closure: -

Tertiary = $0.006\sqrt{k}$

Minor = $0.010\sqrt{k}$

Detail = $0.024\sqrt{k}$

Where k the distance between starting point and closing point of the level line in kilometres.

Detail levelling for observations of spot heights: Error allowed is 0.02 metres for every kilometre or part thereof.

In tertiary leveling the sights should not exceed 60m and the back and fore sights should not differ by more than 2m (20m). The difference of the two stadia hair readings on each staff should not differ by more than 0.021m. In other classes of leveling, sights may be of any length which can be provided the readings of accuracy to 0.003m, and back and fore sights should be approximately equal to eliminate instrumental error.

- 9.6 Primary, Secondary and Tertiary GNSS survey control points may be used as Bench marks, as well, where MSL heights are established.
- 9.7 The position and value of the starting and closing benchmarks in a line should be verified by check levelling to the adjoining benchmarks of old level lines on either side. If any discrepancy is disclosed the check should be extended till two consecutive benchmarks. The accuracy to which observations are taken for the check should be of the same order as for the levelling of the proposed level lines.

10.0 Computation of Areas:

Determination of permissible error in area calculation:

You are instructed to adapt the following equation defined in calculating the permissible error in area of a land parcel based on the nature of boundaries defined on the specified accuracy levels below. It should be noted that the method of ground survey technique and the number of points on the boundaries of the land parcel are irrelevant in adapting this equation.

10.1. Definition of boundaries

a) Fixed boundary: It is a boundary that is made of man-made features and consists of permanent features such as landmarks, boundary walls, walls, wire fences with concrete posts or natural rock walls. Missing features on a fixed boundary should be able to be re-established accurately.

b) General boundary: It is a boundary that consists of natural features of which position is vague (cannot be determined precisely). Some of the examples are: live fences, hedges, banks, ridges, ditches, grass lines etc.

10.2. Accuracy levels

Class I - Plannimetric positional uncertainty (σ_d) in this class is $\pm 7.5\text{cm}$.

Table 1: Equation to determine Class I accuracy and the specification to be adhered to achieve this accuracy level

Permissible error in area calculation based on equation: $\sqrt{\text{Area}} \times \sigma_d \times \sqrt{2}$ where area in square meters (m^2) and σ_d – Plannimetric uncertainty of each detail point on the boundary of land parcel in meters (m)	
Plannimetric uncertainty (σ_d) of a detail point on fixed and identical boundaries	Permissible error (m^2)
0.075m (7.5cm)	$0.1061 \times \sqrt{\text{Area}}$
Specifications	
Instrument and target centring errors	$\leq 2\text{mm}$
Minimum length of a detail traverse line	30m
Maximum length of a detail traverse line	750m
Minimum length of a side shot to a detail point	3m
Maximum length of a side shot to a detail point	100m
Maximum length of an offset to a detail point	3m (no oblique offsets allowed)
Detail traverse closeness factor in metres, k – total traverse length in kilometres	$0.4\sqrt{k}$
Angle measurement	Whole circle bearing
Azimuth control	20 lines
Azimuth closure	3 minutes

Class 2 - Planimetric positional uncertainty (σ_d) in this class is $\pm 15\text{cm}$.

Table 2: Equation to determine **Class II** accuracy and the specification to be adhered to achieve this accuracy level

Permissible error in area calculation based on equation: $\sqrt{\text{Area}} \times \sigma_d \times \sqrt{2}$ where area in square meters (m^2) and σ_d – Planimetric uncertainty of each detail point on the boundary of land parcel in meters (m)	
Planimetric uncertainty (σ_d) of a detail point on general boundaries or a mix of fixed and general boundaries or non-identical fixed boundaries	Permissible error in area (m^2)
0.15m (15cm)	$0.2121 \times \sqrt{\text{Area}}$
Specifications	
Instrument and target centring errors	$\leq 2\text{mm}$
Minimum length of a detail traverse line	20m
Maximum length of a detail traverse line	750m
Minimum length of a side shot to a detail point	2m
Maximum length of a side shot to a detail point	100m
Maximum length of an offset to a detail point	5m (no oblique offsets allowed)
Detail traverse closeness factor in metres, k – total traverse length in kilometres	$0.4\sqrt{k}$
Angle measurement	Whole circle bearing
Azimuth control	20 lines
Azimuth closure	3 minutes

Class III - Planimetric positional uncertainty in this class depends on the positional accuracy of the hand-held GPS device and nature of the boundaries is irrelevant in adapting this equation.

Table 3: Equation to determine **Class III** accuracy and the specification to be adhered to achieve this accuracy level

Permissible error in area calculation in surveys carried out for reconnaissance purposes and topographic map updating with hand-held GPS	
Planimetric accuracy(σ_d):	Planimetric accuracy of hand-held GPS (generally between 0.5m – 5m)
Permissible error in area (m^2)	$\sqrt{\text{Area}} \times \sigma_d \times \sqrt{2}$ where area in square meters (m^2) and σ_d – Planimetric accuracy of detail point on the boundary of land parcel in meters (m)

10.3 Establishment of boundary points

Boundary points should be established to a positional accuracy of at least $\pm 7.5\text{ cm}$ in a cadastral map area on a subsequent survey. The same positional accuracy should also be maintained in establishing new points or re-establishing missing boundary points in surveys falling under other categories.

10.4 Area calculation

10.4.1 Use of decimal places in area of a land parcel

Extent	Class accuracy	No. of decimal places in extent (Hectares)
Up to 8093.7120 m ² (2A - 0R - 0P)	I	Four (04) decimals
Greater than 8093.7120 m ² (2A - 0R - 0P)		Three (03) decimals
Up to 2023.4280 m ² (0A-2R-0P)	II	Four (04) decimals
Greater than 2023.4280 m ² (0A-2R-0P)		Three (03) decimals
No limit	III	Three (03) decimals or lesser depending on the requirement of the accuracy level of the work.

10.4.2 Adaptation of the area in a land parcel

Following criteria should be adapted in comparison of the area of the same identical land parcel based on a new survey with the existing area of a previous survey(s).

- i. If the difference in area between the new survey and the previous survey is within the permissible error given by the equation (some pre-calculated values are depicted in Section 4 in this circular), previous area must be adapted as the area of the new survey.
- ii. If the difference obtained is outside the permissible error allowed for the area of the new survey of the land parcel, relevant area of the previous survey must be re-ascertained to do the following:
 - a) If the area of Lot X of the previous survey is found to have a significant difference after digital re-computation and the re-computed extent of Lot X in the previous survey is within the permissible error compared to the new survey, re-computed extent must be accepted and the statement "Extent amended from X.XXXX to Y.YYYY after digital re-computation of Lot X" should be made on the remarks column of the tenement list only if there is no significant boundary deviations on a further verification by way of a graphical comparison of the boundaries of the newly surveyed land parcel with that of previously surveyed same land parcel.
 - (b) If the area of Lot X of the previous survey is found to have no significant difference after digital re-computation, area of the new survey must be accepted and the statement "Extent amended from X.XXXX to Y.YYYY after resurvey and digital computation" should be made on the remarks column of the tenement list.

Some pre-calculated values for permissible error for Class I and Class II accuracy levels
(for easy reference)

Area in Perches	Area in square meters	Permissible error (σ_{area}) in square meters (m^2) = $\sqrt{Area} \times \sigma_D \times \sqrt{2}$	
		For Class I accuracy: $0.1061 \times \sqrt{Area}$	For Class II accuracy: $0.2121 \times \sqrt{Area}$
1	25.2928	0.53	1.06
2	50.5857	0.75	1.51
5	126.4642	1.19	2.39
8	202.3428	1.51	3.02
10	252.9285	1.69	3.37
15	379.3927	2.06	4.13
20	505.8570	2.39	4.77
25	632.3212	2.67	5.33
30	758.7855	2.92	5.84
35	885.2497	3.16	6.31
40	1011.7140	3.37	6.75
80	2023.4280	4.77	9.54
120	3035.1420	5.84	11.69
160 (1A-OR-OP)	4046.8560	6.74	13.49
240 (1A-2R-OP)	6070.2840	8.27	16.53
320 (2A-OR-OP)	8093.7120	9.54	20.24
400 (2A-2R-OP)	10117.1400	10.67	21.33
480 (3A-OR-OP)	12140.5680	11.69	23.37
560 (3A-2R-OP)	14163.9960	12.63	25.24
640 (4A-OR-OP)	16187.4240	13.50	26.99
720 (4A-2R-OP)	18210.8520	14.32	28.62
800 (5A-OR-OP)	20234.2800	15.09	30.18
1600 (10A-OR-OP)	40468.5600	21.33	42.67
3200 (20A-OR-OP)	80937.1200	30.18	60.34
4800 (30A-OR-OP)	121405.6800	36.97	73.90
6400 (40A-OR-OP)	161874.2400	42.69	85.34
8000 (50A-OR-OP)	202342.8000	47.73	95.41

11.0 Measuring and Recording:

11.1 Measuring of Boundary Points with conventional equipment

The maximum length of an offset must be 10 metres. Offsets may be taken at such intervals, as may be necessary to accurately determine the boundary. A bearing and distance shall be measured for offsets over 10 metres from the traverse line. In addition a rectangular offset shall be taken as a check on the bearing and the distance. Any bearing and distance observation made to a point on the boundary or boundary-mark shall not exceed 15 metres when theodolite and the tape are used. However in exceptional circumstances the RLS may adopt any suitable method provided that sufficient checks are taken to ensure elimination of errors.

11.2 Offset Bookings

In all definite boundaries both lengths along the survey line and offsets shall be booked to 0.01 metres.

11.3 Measurement of Boundary Points with electronic equipment

11.3.1 When a Total Station or any other EDM equipment is used to define boundaries; the length of the observation should be less than the traverse leg and shall not exceed 100m. However, longer shots may be observed up to 200m for natural boundaries or features like stream edges etc.

11.3.2 Features that involve with area calculations should not be shown as single offset features. The features like Foot Paths, Small Streams and Drains etc. should be surveyed as double offset features. When the widths of those features are less than 1m, only centre line of the feature can be surveyed. However, widths of such features should be recorded in the field book. All such features have to be shown in the plan with real dimensions creating a buffer (two lines) along the centre line.

12.0 Definition of Boundaries:

- 12.1 Any boundary that is not formed by a permanent feature shall be defined with boundary stones or any other suitable permanent marks at prominent bends and where necessary at points on the boundary line. Straight boundary lines shall be defined at intervals not exceeding 100m at suitable positions on the line, so that the boundary marks are inter-visible.

13.0 Re-Survey of Property Boundaries:

- 13.1 Landmarks/Boundary marks in a previous survey done by or for the Survey Department or in a survey done for the issue of title certificates under the Registration of Title Act, No. 21 of 1998 (here after referred as RTA) shall not be moved, replaced or disturbed under any circumstances without the authority of the Surveyor General.
- 13.2 When a resurvey of a land parcel, for which a Certificate of Title is issued under the RTA is necessary, the RLS should obtain the boundary co-ordinates of the relevant parcels of land from SG and base the new survey on those coordinates. In such instances a certificate should be given on the new plan to read as "This is a value added resurvey of Parcel Nos.....in Cadastral map No: prepare d by SG under RTA".

14.0 Equipment used for Surveys:

- 14.1 A RLS must make every survey with appropriate equipment and must ascertain the accuracy obtainable before using it.
- 14.2 RLS shall ensure that the measuring tapes and other equipment that he uses for the purpose of measurements have been tested and their residual errors are within the required accuracies of surveys done by him. RLS whenever requested by the Surveyor General shall produce his equipment for checking the accuracy.
- 14.3 Whenever necessary to ascertain their performing accuracy, all electronic distance-measuring equipment should be checked using a suitable check base and the report prepared in such check measurements shall be filed in an appropriate manner for any subsequent use. The RLS who certifies the plans prepared by using such instruments must carefully scrutinize such reports to ascertain the accuracy of the measured distances before certifying the plan.

15.0 Maintenance of Field Notes:

- 15.1 Standard format as given in **Appendix 5 & 6** shall be used in keeping the field notes in connection with detail surveys.
- 15.2 Standard format as given in **Appendix 5** shall be used for electronically measured observations and certified copy of the field notes of electronic measurements shall be filed for subsequent preparation of a complete and accurate plan.
- 15.3 Original field entries shall be made in ink legibly and clearly. See specimen given in **Appendix 5 & 6**.
- 15.4 Overcrowding field book pages and unnecessary repetition of tenement information should be avoided.
- 15.5 Where a lot appears in several pages of a field book, the full tenement information should be given on one page and the other pages should contain the name and description of the lot, with a reference to the page containing the full information.
- 15.6 Where two lots on the same page of a field book have a reasonable portion of the tenement information in common, a suitable reference to the common information (such as: "see 'A' ") can be entered against one lot.
- 15.7 In every page of the Field book, the Map/Plan number and all lot numbers should be given in red.
- 15.8 Names of abutting lands and claimants should also be given.
- 15.9 The boundaries of all roads and tracks, except footpaths, should be shown by firm lines in the field book. Footpaths will be shown by broken double lines.
- 15.10 All differences should be shown, and misclosures should be indicated and correctly adjusted. This must be done immediately after the observations have been made.
- 15.11 All corrections in field books should be clearly deleted and initialled.
- 15.12 Original field book entries should not be erased, added to or altered. If found to be wrong, they should be corrected by neatly crossing out the incorrect entries, re-writing them so that both the incorrect and the correct entries can be clearly followed, and initialing, dating and certifying the correction as per para 15.12. This rule is applicable for any kind of field book entries.

16.0 Survey Operations:

- 16.1 Whenever a request for a survey is made, it is desirable that all RLS obtain the request in writing from the parties concerned with their names, national identity card number, addresses and ownership/relationship to the land. When the request is for the survey of State land, a written request from the authority concerned should be obtained before the survey. See **Appendix 10** for the specimen.
- 16.2 If the survey is in respect of a co-owned land, the consent of all parties concerned should be obtained in writing.
- 16.3 When boundaries of land parcels to be surveyed are not clearly defined on ground by means of a wire fence, wall etc. such boundaries should be clearly defined with permanent boundary marks in consultation with the claimants of adjoining parcels. Any dispute should be fully resolved before the survey. When a parapet wall forms the common boundary it is necessary to verify who claims the wall and indicate in the plan clearly with clichés (See **Appendix 7**) as appropriate. When surveys are done for transfer of ownership of land, all undefined boundaries should be demarcated with boundary stones or permanent boundary marks, if no hard details exist.
- 16.4 It is the duty of every RLS to safeguard the boundaries of State lands. RLS should maintain private and state boundaries if it is demarcated in SG's plan. A thorough investigation is necessary at the District Survey Office where relevant documents could be examined.
- 16.5 RLS should ensure that they conform to all existing laws and regulations.
- 16.6 When it is required to sub divide or amalgamate one or more parcels of land for which certificates of title under the RTA No 21 of 1998 have been issued, such surveys should be carried out based on the boundary coordinates of the Cadastral Map, which should be obtained from the SG.

- 16.7 Field notes and connected documents of all surveys done by RLS must be neatly filed and kept for any future use. A specimen format of field notes of a conventional survey using theodolite and tape is given in **Appendix 6**. When an EDM(Total Station) is used a hard copy in addition to the soft copy giving the station numbers, point numbers, bearings, slope angle, slope distance, nothings and easting of all the points with a clear sketch has to be kept in the file pertaining to that survey. See **Appendix 5 page1 and 2**.
- 16.8 Field notes should include the name of the land, the village in which the land is located, the persons who pointed out the boundaries surveyed, names of the claimants of the land and the dates on which the survey was done in addition to the tenement information of the respective lots.
- 16.9 On completion of a survey the RLS should enter the Plan number, numbers of the respective Lots and a certificate, as follows in the last page of the field notes (See specimens in **Appendix 5 & 6**)

"The survey recorded in pages ---- to ---- of this field notes has been carried out by me personally in accordance with the Survey Act. No. 17 of 2002"

17.0 Preparation of Plans

- 17.1 All plans should be accurately plotted with the meridian parallel either to the length or breadth of the drawing sheet.
- 17.2 Boundary lines, control points, drawing of topographic details will be in black. Gridlines, Grid coordinate of two corners, survey/chain lines, control points, boundary point numbers for few prominent points and field book references will be in blue. Any transferred boundaries will be in red. When boundaries of more than one plan have to be transferred and shown, specific colours should be used and referenced to differentiate.
- 17.3 Photo copies of plans should not be used for transfer, superimposition, compilation, computation or any survey or plan work other than for reference.
- 17.4 Durable drawing paper of 160 GSM or above, in metric sizes A3, A4 or folio (216 mm x 340 mm) size should be used, sectioning it in to A3 or folio size if the survey is large.
- 17.5 RLSS' plans can be generally grouped in to three categories.

Category 1:

Plans prepared for execution of Title Deeds Falls in to this category. They are revenue plans strictly prepared for legal purposes. All features existing on ground need to be shown. Proposed features which are to be constructed in the future should not be shown on these plans. Any lot formed in a sub division has to be lotted separately. Hence land within street lines may be lotted separately. Gazetted street lines exist only within Municipal Council Limits. But building lines are there in all areas. Building lines involve with construction work and hence they need not be shown on this category of plans. For the information to be given on these plans see section 17.6.

Category 2:

Plans prepared for investigation purposes or for redefinition of boundaries falls in to this category. The Preliminary Survey plans prepared in partition cases and most of what are called 'L' cases in Courts also falls in to this category. Four boundaries of the corpus to be given. But boundary schedule for individual Lots need not be given though extents of individual lots are necessary. There can be several names for a land parcel. For example according to plaintiff the name isaccording to 4th defendant the name is and so on. The Surveyor can decide on any additional information to be given on the plan for the conduct of the inquiry. In 'L' cases there can be unclosed lots with no extents given but other information may be given to depict the ground situation. Other than what is specially enumerated in this section as not necessary, all information what is mentioned in section 17.6 need to be given on these plans.

Category 3:

Site plans prepared for development purposes falls into this category. Contours, heights and proposed features to be constructed, building lines may be shown on these plans. Boundary schedules may not be necessary. Name of land, village, Korale district and so on depicting the location of the land together with the name of the project if any and a site plan No. may be given on the plan Lotting and giving extents of individual lots may only be necessary on a special request by the client.

17.6 The following information as applicable should appear on the body of the plan.

- (a) Plan number (integral number should be in sequence commencing from unity)
- (b) North line
- (c) Scale of the plan
- (d) Lot numbers
- (e) Descriptions of all boundaries and boundary marks.
- (f) Description of details such as roads (with directions), streams (with direction of flow), buildings etc;
- (g) Abutting information such as assessment numbers with street names or reference to old plans and lot numbers if any, or names of lands and claimants.
- (h) Legend including name of Local Authority, Korale, Pattu (Grama Niladari and Divisional Secretary division as appropriate) revenue District and Province.
- (i) Reference to abbreviations used (See **Appendix 8- pages 1, 2 and 3**).
- (j) Schedule of boundaries and extent of entire land.
- (k) A schedule of boundaries, extent of each lot and total
- (l) Name of RLS, professional designation, address, telephone number, registration number in order.
- (m) Date of survey
- (n) Certificate with signature and date
- (o) Any explanatory foot notes
- (p) Field note references

17.7 A specimen showing the layout of a plan prepared by a RLS is given in **Appendix 9**

17.8 Amendments to RLS's Plans

When a plan is certified and handed over to the client from then onwards the RLS's control over it will be very much restricted. Hence before handing over, the RLS should go through it carefully and see that there are no omissions. Subsequently at a later date if the client request for some material changes on the plan the RLS has to be mindful that photocopies of the plan may have been

already given to various other persons. Therefore it is advisable that the RLS makes the changes on a different plan with new number and new date giving reference to the earlier plan if appropriate stating that it is a re survey, amalgamation and re subdivision. Before attempting the requested alterations the RLS should look into the fact that if it is a sub division plan whether the Local Authority has already approved the sub-division. If it is so the client should obtain a letter of consent from the local body to effect the changes. Secondly the client should submit an affidavit (if it is a co-owned land all co-owners need to sign the affidavit) swearing that no legal actions, such as executing a deed of transfer or a mortgage bond on any of the subdivided lots has been done. If it is on the contrary no action taken lots cannot be amalgamated with the action taken lots. The same procedures need to be adopted even on a plan prepared by some other RLS.

- 17.9 RLS should never prepare two plans with the same number and date.
- 17.10 RLS should not amend, alter or insert notes or additional data on plans prepared by other RLSs. This procedure is not advisable even on his own old plans.
- 17.11 Originals of sub-division plans prepared under the partition Act, after the issue of the final decree are filed and kept in the court Record Room. RLS should not make any alterations or amendments on these plans when preparing certified copies to the parties. If any amendment is requested it needs to be on a fresh Plan with different number.
- 17.12 Based on a sub division plan a land owner may sell or gift land parcels to others with the condition of giving only the "right of way" of means of accesses to the prospective buyers or recipients, retaining the soil rights to himself. Sometime later it may not be legally sound for the RLS to amalgamate parts of or in whole these means of accesses with other lots on the request of the new owners who do not have soil rights to the means of accesses.
- 17.13 RLS should not issue certified copies of his own plans or plans prepared by other RLSs to any person who do not have a direct connection to the land depicted in that plan.

18.0 Subsequent surveys in Cadastral Survey areas:

Subsequent surveys in cadastral survey areas can be carried out by an RLS who has received the accreditation certificate issued by the Surveyor General under section 11 of the survey Act No. 17 of 2002.

18.1 Cadastral Survey Areas

Cadastral survey areas are the areas covered by the cadastral survey maps and the instructions below should be followed when re-surveying lands within such areas. Resurveying of land parcels in a cadastral map is required in following types.

- 18.1.1 Land appearing in Cadastral Maps and having issued Title certificates.
- 18.1.2 Land appearing in Cadastral Maps without a title certificate, there are two types of such as,
 - 18.1.2.1 Lands with single ownership but the title certificates have not been issued
 - 18.1.2.2 Jointly owned unsettled lands surveyed en-block and hence the title certificates were not issued

18.2 Formats and Specimen

Appropriate formats and specimen stated in this document should be used when doing subsequent surveys within a cadastral survey area. All the specimens of the formats shall be available at the official website of the Survey Department and at the sub offices of Survey Department.

18.3 The instructions below should be followed by the registered RLSs when doing subsequent surveys, preparing and maintaining cadastral maps under section 23 and 36 of the Title Registration act No 21 of 1998.

- 18.3.1 The entire request under section 18.1.1 above should be made by the land owner (s), vide **Appendix 11** (Format 1) and submit to the RLS with a certificate by the Title Registrar of the office where the land is registered.
- 18.3.2 The entire request under section 18.1.2.1 above should be prepared by the land owner (s), vide **Appendix 12** (Format 2) and submit to the RLS or District Survey Office with a certificate by the Commissioner of Title Settlements.
- 18.3.2 The entire request under section 18.1.2.2 above should be jointly prepared by the land owners, vide **Appendix 13** page 1 and 2 (Format 3) and submit to the District Survey Office with a certificate by the Commissioner of Title Settlement. Such surveys may be attended either by Survey Department or a nominated RLS under SG's supervision as wished by the applicants. In such instances cost of survey or supervision is charged by SG.

- 18.3.4 The RLS should carry out surveys according to the bonds/conditions indicated in the title certificate of the relevant land (e.g. Conditions and rights related to bonds/ mortgage and extra conditions under the Land Development Ordinance or by the local authorities or any)
- 18.3.5 The RLS should aware the land owner /applicant about the situation if the subsequent survey request is not in accordance with the conditions of the local authority. However the land owner /applicant still in need to proceed with the application, a letter should be obtained from the land owner/applicant regarding that. Vide **Appendix 14**
- 18.3.6 Digital Data related to the original survey or copies of required old plan and field notes when digital data is not available should be obtained from the district survey office. Relevant Senior Superintendent of Surveys should make arrangements to provide these data to the Registered Surveyors. Registered Surveyor should produce application vide **Appendix 15** together with duly completed Appendix 11 and **Appendix 14** when requesting digital data. Such requests would also be made through facsimile or e-mail.
- 18.4 The subsequent surveys should be carried out by the Registered Surveyor fulfilling the conditions stated in the relevant acts, survey regulations and technical manuals.
- 18.5 Amalgamation or subdivision after amalgamation should not be carried out for the land of which title certificate are in different classes or together with land for which the title certificates have not been issued.
- 18.6 The land parcel should be clearly and correctly identified and its boundaries to be verified by the Registered Surveyor.
- 18.7 If applicant - land owner has encroached any portion of adjacent land, such encroachment should not be dealt with, but original outer boundary should be maintained in new survey.
- 18.8 If adjacent land owner(s) has encroached portion of applicant's land the original boundary should be restored by explaining it to adjacent owner(s). If encroachers refuse to vacate such portions of encroached land, such portions should also be surveyed separately and shown on the plan by giving lot numbers on the consent of applicant or otherwise stop further proceedings of the request.

- 18.9 If an application for subdivision of small portion from a large extended land, only that portion may be surveyed but subdivision plan to be drawn for entire land by re-plotting the balance portion of land using the digital data obtained. Such incidences should be indicated in Surveyor's report.
- 18.10 The new boundary points established during subdivision survey should be permanent marks. They are to be shown to applicant(s) and their signatures to be obtained. This signature form should be attached to survey file.
- 18.11 The boundary points established and surveyed during subsequent survey in a Cadastral mapping area should be of 7.5 cm minimum accuracy
- 18.12 It should be verified whether the total extent of lots in subdivision and amalgamation plans to be match with that of original cadastral lots dealt with. If an original extent is found erroneous, after double checking, it should be reported to Senior Superintendent of Surveys who should take immediate actions to correct it.
- 18.13 After completion of field survey and preparation of manuscript plan the RLS should identify the definite number of lots in his subsequent plan and requests for last lot particulars such as sheet number, lot numbers, and tenement list page numbers etc. from district Senior Superintendent of Surveys using prescribed form vide **Appendix 16**. The alternative communication method of e-mail or facsimile is also allowed.
- 18.14 In an unavoidable circumstance, if last lot particulars are not being able to use within two weeks of issue, the registered license RLS should intimate reasons and request an extension from district Senior Superintendent of Surveys before it lapses.
- 18.15 When a subsequent survey is requested to attend through a RLS, an examination fee decided by the Surveyor General has to be paid by the applicant to district Senior Superintendent of Surveys. Such fee should be informed to the applicant with copy to respective RLS by the time RLS requested last lot particulars from district Senior Superintendent of Surveys.
- 18.16 In the case of para 18.1.1 and 18.1.2.1 above GSM110 and GSM80 thickness quality white papers should be used in preparation of survey plans and tenement list respectively. A4/A3 size papers may be used depending on extent coverage by subsequent survey.

- 18.17 The Cadastral maps and tenement list prepared under subsequent surveys by RLS in the above cases of 18.1.1 or 18.1.2.1 should be in accordance with **Appendix 17** and **Appendix 18**.
- 18.18 In the case of para 18.1.2.1 above plans and tenement lists should be prepared on papers provided by the Surveyor General for that purpose.
- 18.19 The new subsequent plan in digital form should be submitted in digital exchange format (dxf) and in accordance with standard data layers of digital data provided by senior superintendent of surveys in para 18.3.6 above. The connected digital tenementary information should be submitted in any standard data formats of forms as agreed by the Surveyor General.
- 18.20 Submission and approval of Subsequent Cadastral Plan
The Registered Surveyor who attends a subsequent cadastral survey should handover following set of documents to district Senior Superintendent of Surveys. The RLS is advised to maintain an extra file containing the same documents with him
- i. Request by Applicant (**Appendix 11** or **12** or **13**: Formats No.1 or 2 or 3)
 - ii. Plan and Tenement List signed on each section/page (2 signed copies as per para 18.16 to 18.19)
 - iii. Field Notes (a certified copy)
 - iv. A compact disk (CD/DVD) contains digital data of cadastral map, tenement list and cadastral plans for individual lots
 - v. The letter of last lot particular (**Appendix 16**)
 - vi. Two set of copies of amendment tracings
 - vii. Computation sheets
 - viii. The letter of acceptance by the applicant to perform subsequent survey if it is not obeyed with conditions of Local Authority (**Appendix 14**)
 - ix. Coordinate Sheets for all survey points
 - x. Letter of certificate by Applicant for showing boundaries
 - xi. Surveyor's Report (**Appendix 19**)
- 18.21 If subsequent survey carried out under 18.1.2.2 above by a RLS he should handover used field books of Survey Department and subsequent cadastral Plan drawn in prescribed formats by SG instead of items (ii) and (iii) above.
- 18.22 Senior Superintendent of Surveys should check all above documents and approve both copies of subsequent plan on behalf of SG, if it satisfies all the requirements to update the cadastral map and digital Land Information System (vide **Appendix 20**).

- 18.23 The essence of field checks during above examination could be decided by Senior Superintendent of Surveys.
- 18.24 Keeping Records and Issuance of copies
The Senior Superintendent of Surveys should make arrangements to update the original cadastral map by inserting subsequent survey data and send a copy of appropriate portion of amended cadastral map to respective title registrar together with individual digital cadastral plans.
- 18.25 In the case of subsequent cadastral survey under category 18.1.2.1 and 18.1.2.2 above a copy of amended cadastral map (portion) should be sent to Commissioner of Title Settlement too.
- 18.26 In the case of 18.1.1 and 18.1.2.1 above a one copy of the subsequent plan approved by Senior Superintendent of Surveys should be stamped as "Applicant's Copy" and provided to applicant through RLS. In the case of 18.1.2.2 above a certified copy of Cadastral Map should be provided to each applicant and RLS by Senior Superintendent of Surveys.
- 18.27 The Office copy of Cadastral Map, digital data and all other documents connected with subsequent survey should be properly archived and maintained in district survey office for future reference.
- 18.28 The copies of hardcopy/softcopy of subsequent cadastral plans should be maintained in Surveyor General's office too.
- 18.29 The records in district survey office should be updated on receipt of registration numbers issued by Title Registrar after registration of new land parcels as per regulation of Title Registration Act 21 of 1998 published in gazette dates 1998.10.21
- 18.30 The Registered Surveyor who attends subsequent cadastral surveys is solely responsible for procedures, accuracy and content of the plan produced in connection with the survey by him.

19.0 Documentation to be maintained by RLS:

19.1 Every RLS should maintain a register giving the following information about every plan he produces.

- i. Plan number
- ii. Date of survey
- iii. Name of Land
- iv. Village where the land is situated
- v. Revenue District
- vi. Extent
- vii. Field book reference
- viii. Any other

19.2 On completion of the plan a report on the survey should be written and filed with the field notes and other papers giving important information on the survey including the following for future reference when required. A separate file should be taken up for every survey.

- i. Request for survey and relevant documents
- ii. Plan number, lot numbers and extent.
- iii. Purpose of the Survey
- iv. Name of applicant / client and his details
- v. Technical data such as field notes, meridian, co-ordinate sheets, scale, reference to old plans.
- vi. Boundaries pointed out by and to.....
- vii. reference to deeds(if available)
- viii. Computer file reference and security print out
- ix. Area computation Sheet
- x. any other matter

19.3 Certified copies of plans should only be prepared from the original plan, from the pencil plot or from the field notes. Photocopies should not be used for preparing certified copies or preparing of tracings or any survey or mapping activity.

20.0 Interpretation

20.1 Geodetic Surveys

Surveys done taking in to account the shape of the earth

20.2 Topographical Surveys

Surveys done for collection of natural or man-made features on the ground

20.3 National Geodetic Control Network

A set of points established on the ground and position determined (Longitude, Latitude and radial height) in respect of Everest Ellipsoid to determine shape, size of Sri Lanka and then convert to **National Co-ordinate System** based on Transverse Mercator Projection.

20.4 Horizontal Control Point

Survey control point established with Northing and Easting co-ordinates according to the national Co-ordinate system.

20.5 Vertical Control Point

Survey control point established with the determination of the height in respect of Mean Sea Level.

20.6 Global Navigation Satellite System (GNSS) survey control point

A system for fixing positions of points on the surface of the earth by measuring the ranges to a special set of satellites orbiting the earth, having been launched to form a GNSS constellation.

20.7 Survey Control Point

Survey control point established using GNSS or Traverse technique according to the National Co-ordinate system.

20.8 Traverse

Set of survey lines which are connected to each other with length and bearing.

20.9 GDOP

Geometric dilution of precision of satellites while establishing a control point.

20.10 Base station

Known Survey control point with higher accuracy

20.11 Dead measurements

Tie measurements

20.12 Angular Misclosure

The difference between original bearing and observed bearing.

20.13 Linear Misclosure

The difference between 1st chaining and 2nd chaining of a survey line.

20.14 Co-ordinate Misclosure

The difference between known co-ordinates and calculated co-ordinates.

20.15 Offset

Shortest distance from an object to a reference line.

20.16 EDM Instrument

An instrument of auto calculating distances with the help of Electro Magnetic Wave rays sending to a reflector.

20.17 Calibration Base

Stranded survey line established on ground to check the accuracy of the instruments.

20.18 Tenement information

Information of land parcels such as situation, land use, extent and ownership.

20.19 Lot

Close entity of a survey plan.

20.20 Piduruthalagala or Pedro

The highest mountain in Sri Lanka (8,281 feet above mean sea Level – 2524 m). A trigonometric station established with the distances of 500,000.00N and 500,000.00E from an assumed origin. This has been used for the establishment of National Co-ordinate System of Sri Lanka.

20.21 Administrative Boundaries

The boundaries of administrative territorial units of Sri Lanka as gazette by the Government from time to time.

20.22 Cadastral Map

A map resulting from a cadastral survey; defined in the Survey Act 17 of 2002. A map defining all of the land parcel boundaries in a village which have either been registered or not registered under the RTA. A Cadastral Map includes any condominium plan prepared under the Apartment Ownership Law No 11 of 1973.

20.23 Cadastral Plan

A plan for a Land Parcel resulting from a cadastral survey as defined under the Survey Act No 17 of 2002.

A Cadastral Plan of the Land Parcel will show the boundaries and extent resulting from a Cadastral Survey of that Land Parcel. A Cadastral Plan may include any unit shown in a condominium plan prepared under the Apartment Ownership Law No 11 of 1973.

20.24 Cadastral Survey

Any survey for the purpose of delineating, determining or defining the boundaries of any parcel of land or premises or any legal rights or interests attached thereto, as defined in the Survey Act No.17 of 2002.

20.25 Certificate of Title

An extract from the Title Register for a single land parcel and showing all the existing registered information of that land parcel as registered by Registrar General of Titles.

20.26 Claimant

A person / Institution making a claim.

20.27 Commissioner of Title Settlement (CTS)

A person duly appointed under the provisions of the Registration of Title Act No 21 of 1998.

20.28 Local Authority

Any Municipal Council, Urban Council or Pradeshiya Sabha.

20.29 Owner:

- (a) in relation to the ownership of a Land Parcel, the person or organization named in the Title Register as the person or organization holding the title of full ownership or a provisional title, and;
- (b) In relation to other interests in a Land Parcel, the person or organization named in the Title Register as the person or organization in whose favour the interests in the Land Parcel are registered.

20.30 Private Land

Any land which is not owned by State.

20.31 State Land

All land in Sri Lanka to which the State is lawfully entitled or which may be disposed of by the State and includes lands which may be vested or the management thereof vested in any government department or government corporation or authority and all rights and privileges attached or appertaining to such land.

20.32 Benchmark

Benchmark is a monument of which the mean sea level elevation has been established. The benchmark of the primary net are classified as Fundamental, Standards, Types A, AA, B, C and D and illustrated by dimensioned sketches in plates II and III of Volume I of the report on the Geodetic Levelling.

APPENDICES

Appendix 1
(See paragraph 4.1)

1. Conversion Factors

The conversion factors given below may be used for the conversion of linear measurements taken in feet or links and extents in acres, roods and perches to their corresponding equivalents in metric units. Such conversions will be necessary in re-laying boundaries using old plans and field notes which are in chain measurements.

(Based on the figures given by the Sri Lanka Bureau of Standards)

1 yard = 0.9144 metres

1 foot = 0.3048 metres

1 Inch = 2.54 cm

1 link = 0.201168 metres

1 metre = 4.97096 links

1 mile = 1.609344 km

1 km = 0.62 miles

1 Hectare = 2.471054 acres

1 acre = 0.40468564 ha

1 rood = 0.1 ha

1 perch = 25.29285 sq metres

2. Parameters Related to the National Geodetic Control Network and National Grid Co-ordinate system

The National Geodetic Control Network was named as **SLD99**. It consists with 272 primary control points. (EDM traverses can be run on low order control points established by GNNS observations in between the primary control points for further densification.)

The reference ellipsoid used by SLD 99 is **Everest-1830** with
Semi Major axis: $a = 6377276.3450$ m,
Semi Minor axis: $b = 6356075.4131$ m.

Most of the space-based technologies such as GPS use the global reference ellipsoid- World Geodetic System 1984 (WGS 84). Hence, Bursa-Wolf transformation parameters were computed to transform WGS84 ellipsoid to Everest as follows,

Translation ΔX	= 0.2933 m
Translation ΔY	= -766.9499 m
Translation ΔZ	= -87.7131 m
Rotation about X axis	= 0.1957040"
Rotation about Y axis	= 1.6950677"
Rotation about Z axis	= 3.4730161"
Scale factor	= 1.0000000393

The map projection used by the SLD99 is Universal Transverse Mercator (UTM) Projection with central meridian passing through Pidurutalagala Trigonometrical point.

Parameter set of the Map Projection as follows :

Longitude of the Origin	= $80^{\circ}46'18.16710''$ E
Latitude of the Origin	= $07^{\circ}00'01.69750''$ N
Scale factor	= 0.9999238418
False Northing	= 500,000.00 m
False Easting	= 500,000.00 m

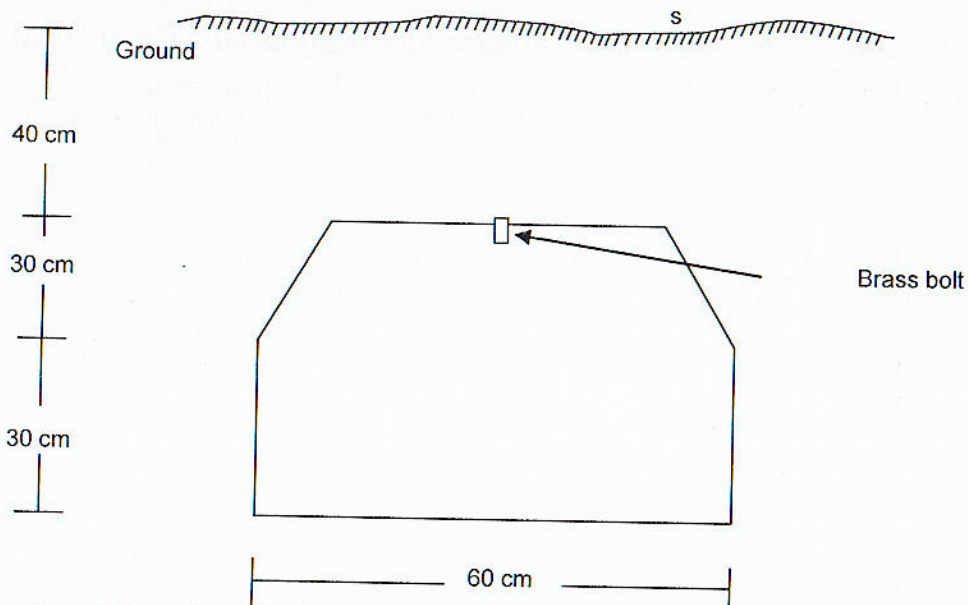
This projected co-ordinate system is defined as National Grid Co-ordinate system. (National Grid System)

3. Type of Monuments used for Control Points by Survey Department: (For information of RLS)

Control points are permanent monuments and brass bolt is being fixed on top of it. The elevation to the top of the monument from means see level has been ascertained by precise levelling subsequently.

Monument Type A3:

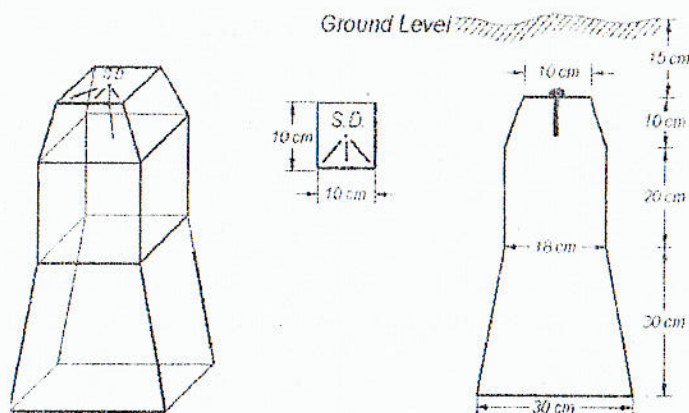
Brass Bolt on Large concrete block with following dimensions.



Description: Length of brass bolt – 65mm, Diameter of the brass bolt – 12mm

Monument Type A4:

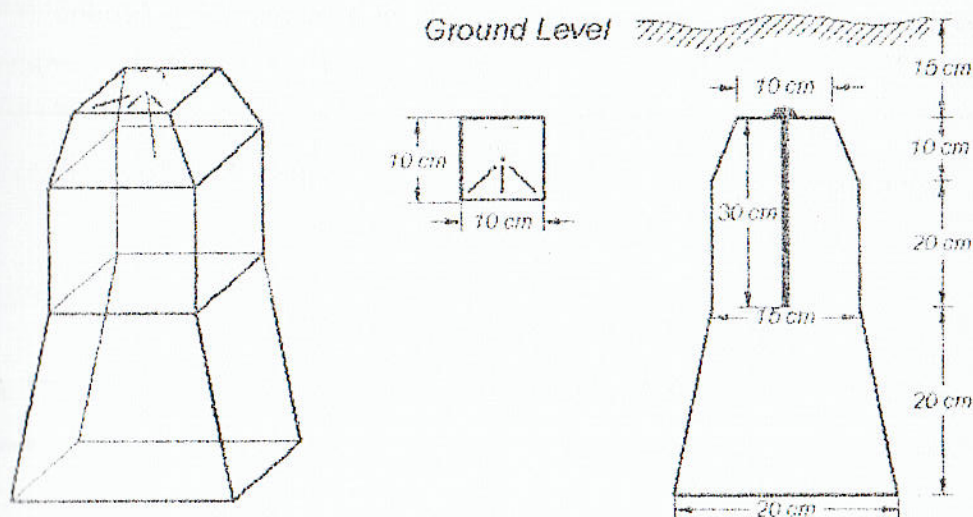
Brass Bolt on concrete block with following dimensions.



Description: Length of brass bolt – 65mm, Diameter of the brass bolt – 12mm

Monument Type A5:

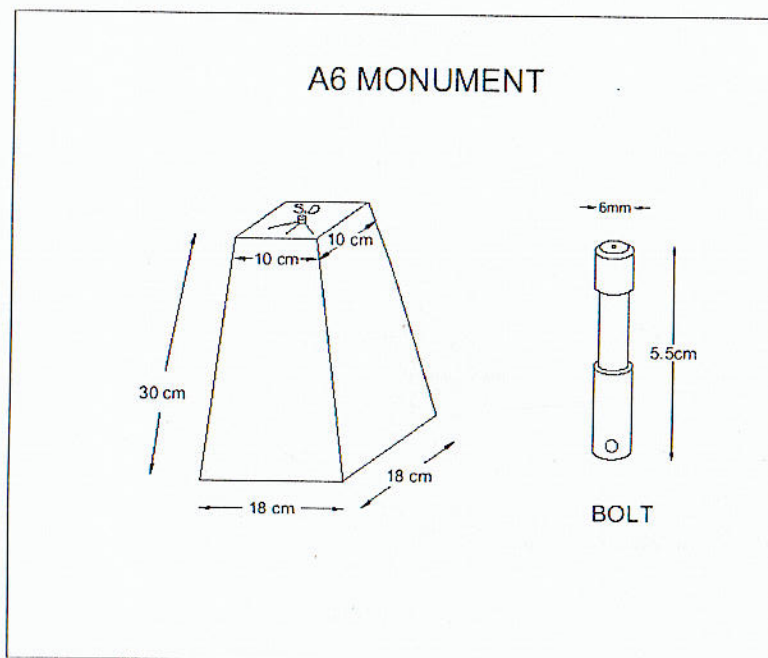
Brass Rod on concrete block with following dimensions.



Description: Length of brass bolt – 30m, Diameter of the brass bolt – 3mm.

Monument Type A6:

Brass bolt in Concrete Monument with following dimensions

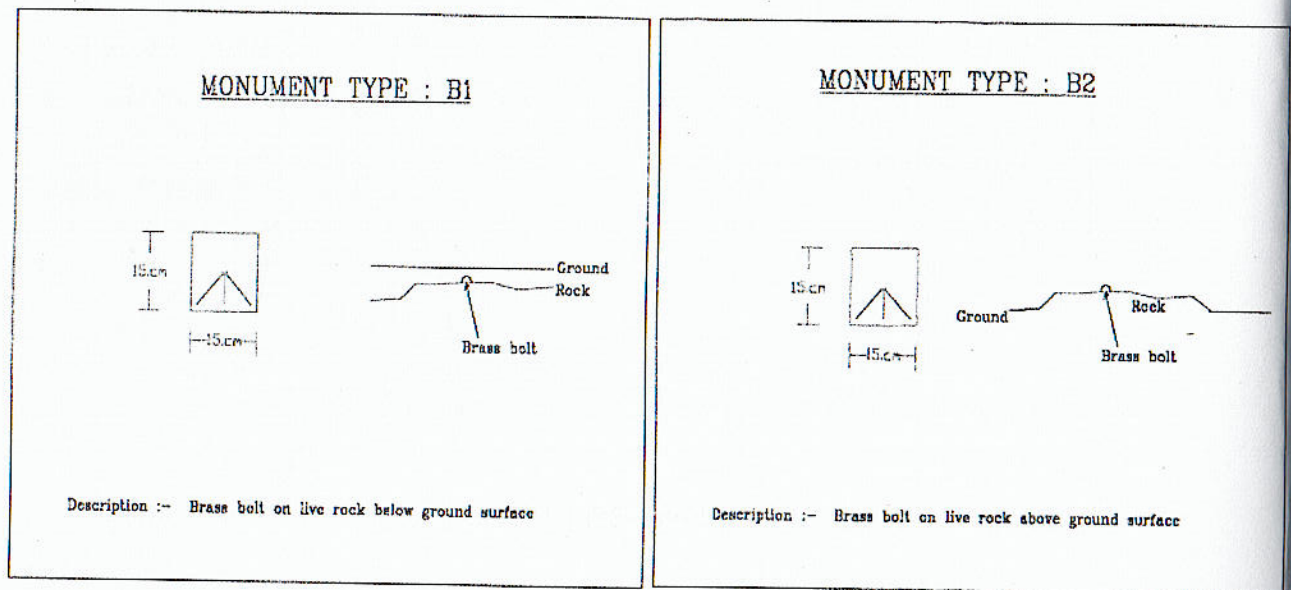


Description: Brass Bolt in Concrete Monument

Monument Types B1 and B2:

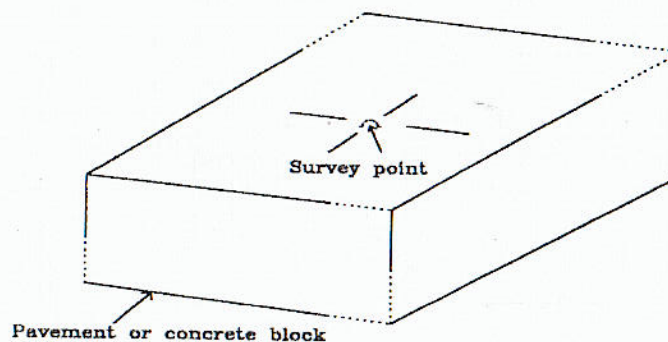
Brass Bolt of 7.5cm length and 3mm diameter, buried on Live Rock below Ground Surface is type B1.

Brass Bolt of 7.5cm length and 3mm diameter, buried on Live Rock above Ground Surface is type B2.



The Control point is selected on a concrete slab or on a pavement with a brass bolt of 7.5cm length and 3mm diameter buried into the slab or pavement.

MONUMENT TYPE : B3

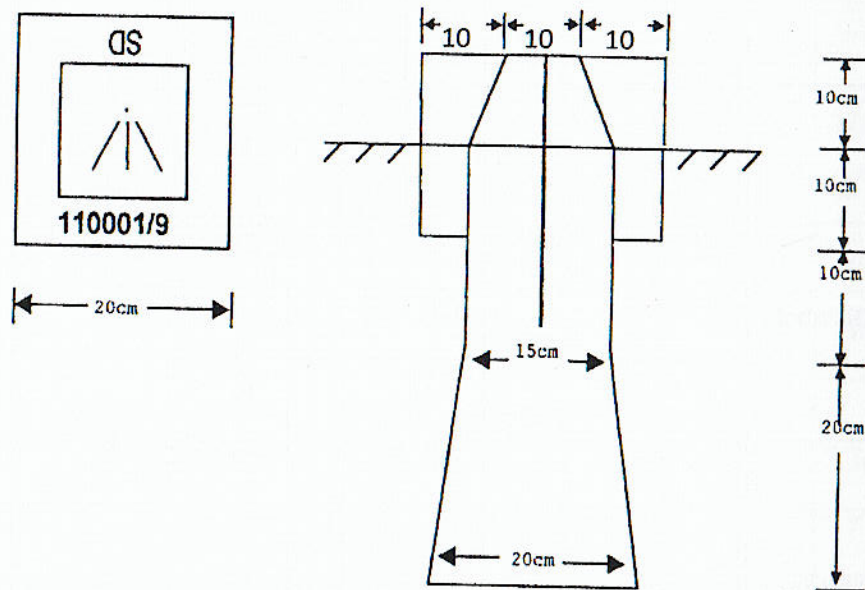


Description :- Brass bolt on pavement, concrete slab etc.

Surface Monuments (B4) (For information only)

Brass Rod in Concrete Monument with following dimensions (Surface Monument)

Monument has been buried underground with 10 cm projected above ground level and to be covered with a concrete tapered base 30X30 cm.



Diameter of the rod is 3mm and length 30 cm

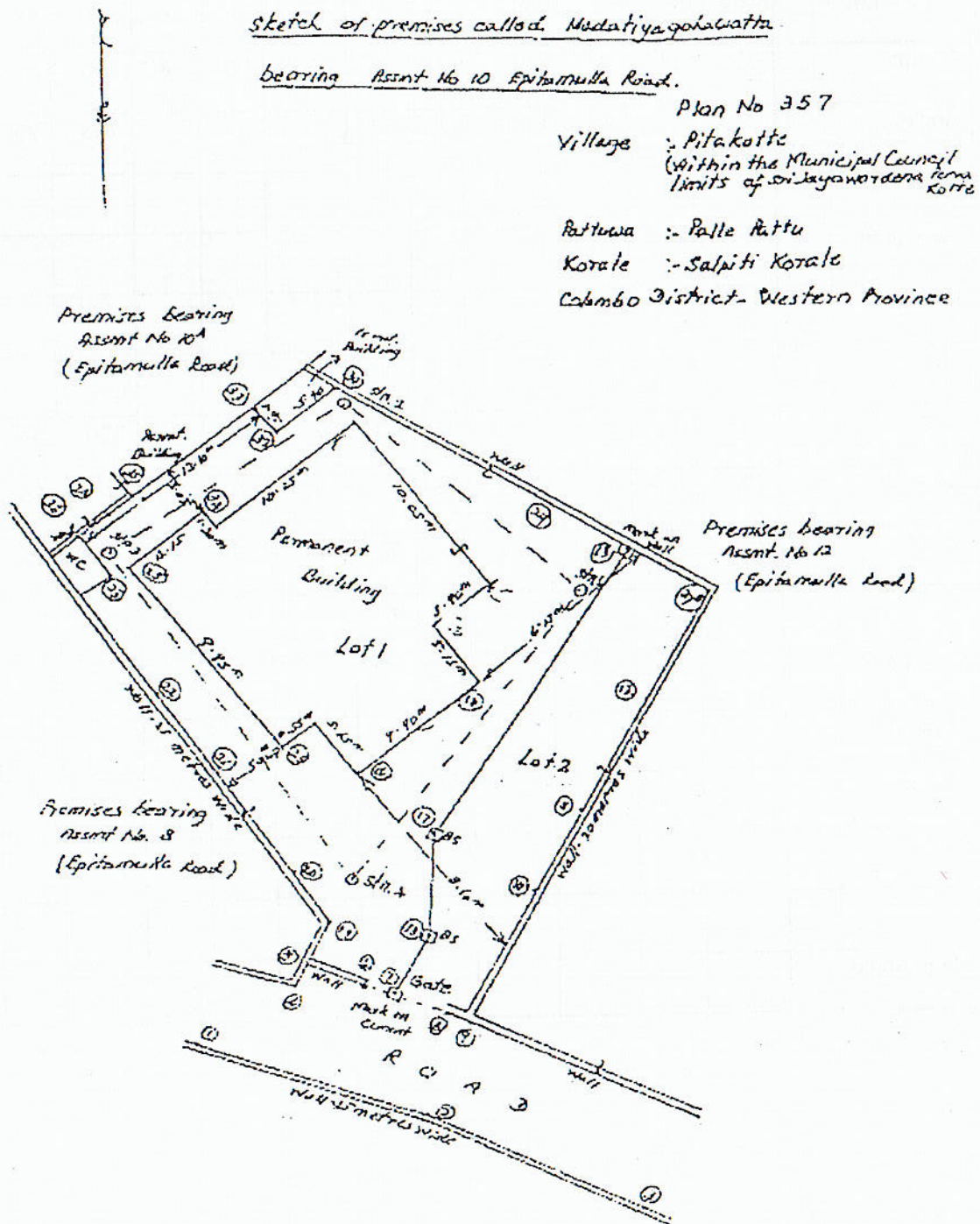
Appendix 4
(See paragraph 8.2.2)

4. Specimen of a Total Station Traverse Field Book Page

Station Observed:	E1-AN-0002-02			E1-AN-0002-04			E1-AN-0002-02			E1-AN-0002-04		
Ht. Of Target:	1.550			1.740			1.550			1,740		
VERTICAL ANGLES AND DISTANCES												
	o	'	"	o	'	"	o	'	"	o	'	"
Face Left:	90	03	26	89	46	20	90	03	20	89	46	17
Face Right:	269	56	39	270	13	41	269	56	37	270	13	33
Sum:												
Angle:	-00	03	23.5	00	13	40.5	-00	03	21.5	00	13	38
Slope Distance:	712.648			463.166			712.646			463.166		
1.												
2.	712.646			463.169			712.647			463.167		
Mean Slope Distance:	712.647			463.1675			712.6465			463.1665		
Horiz. Distance:												
Elevation:												

HORIZONTAL ANGLES												
	o	'	"	o	'	"	o	'	"	o	'	"
Face Left:	00	00	00	153	25	53	45	00	18	198	26	14
Face Right:	180	00	04	333	26	03	225	00	18	18	26	15
Mean:	00	00	02	153	25	58	45	00	18	198	26	14.5
Angle:				153	25	56				153	25	56.5
Face Right:												
Face Left:												
Mean:												
Angle:												
Face Left:	22	30	01	175	56	00	67	29	51	220	55	49
Face Right:	202	30	02	355	56	04	247	29	47	40	55	49
Mean:	22	30	1.5	175	56	02	67	29	49	220	55	49
Angle:				153	26	0.5				153	26	00
Face Right:												
Face Left:												
Mean:												
Angle:												
Mean Angle:												

5. Specimen EDM Field book page

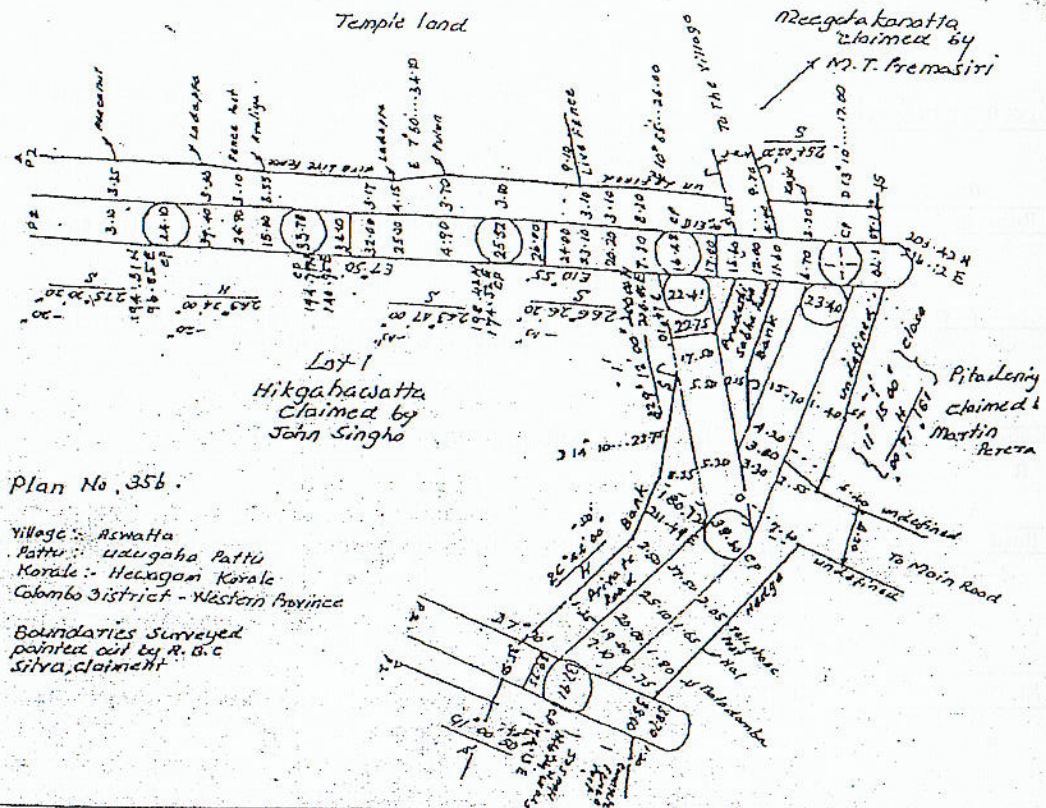


Specimen EDM Field book page (Traversing with detail survey)

EDM Traverse		Description	Horizontal <			Vertical <			Horizontal Distance	Observed Coordinates			Remarks
Stn No	Target No.		0	'	"	0	'	"		N	E	Z	
9100		s								561123.341	455520.321		
	9099	OCP	251	03	41				56.848	561104.890	455466.550		
	9091	OCP	70	7	15				69.370	561146.935	455585.550		
	9103	CP	120	27	43				73.632	561160.663	455456.863		
	1	OL								561141.904	455514.657		
	2	L								561166.644	455533.182		
	9101	CP	36	33	46				110.155	561211.817	455585.946		
9101		CP								561211.817	455585.946		
	9100	OCP	216	33	46				110.155	561123.340	455520.325		
	3	OL								561192.296	455551.240		
	4	U								561203.359	455558.791		
	9102	CP	306	47	12				62.101	561249.005	455536.216		
9102		CP								561249.005	455536.216		
	9101	CP	126	47	12				62.101	561211.817	455585.951		
	9103	CP	221	55	39				118.743	561160.662	455456.877		
9103		CP								561160.662	455456.877		
	9102	CP	41	55	39				118.743	561249.005	455536.220		
	9100	OCP	120	27	23				73.632	561123.340	455520.335		
										561123.341	455520.321		

Adjusted coordinate sheet of traverse and observed points to be pasted as follows				
Stn/Pt	Adjusted Coordinates			Code
No.	N (m)	E (m)	Z (m)	
9100	561123.341	455520.321		OCP
1	561141.905	455514.652		OL
2	561166.645	455533.177		L
9101	561211.818	455585.941		CP
3	561192.297	455551.230		OL
4	561203.360	455558.781		U
9102	561249.006	455536.206		CP
9103	561160.663	455456.863		CP
Signature of Registered Licensed Surveyor: Name of Surveyor: Date:				

6. Specimen for Field Book Page for a Theodolite survey

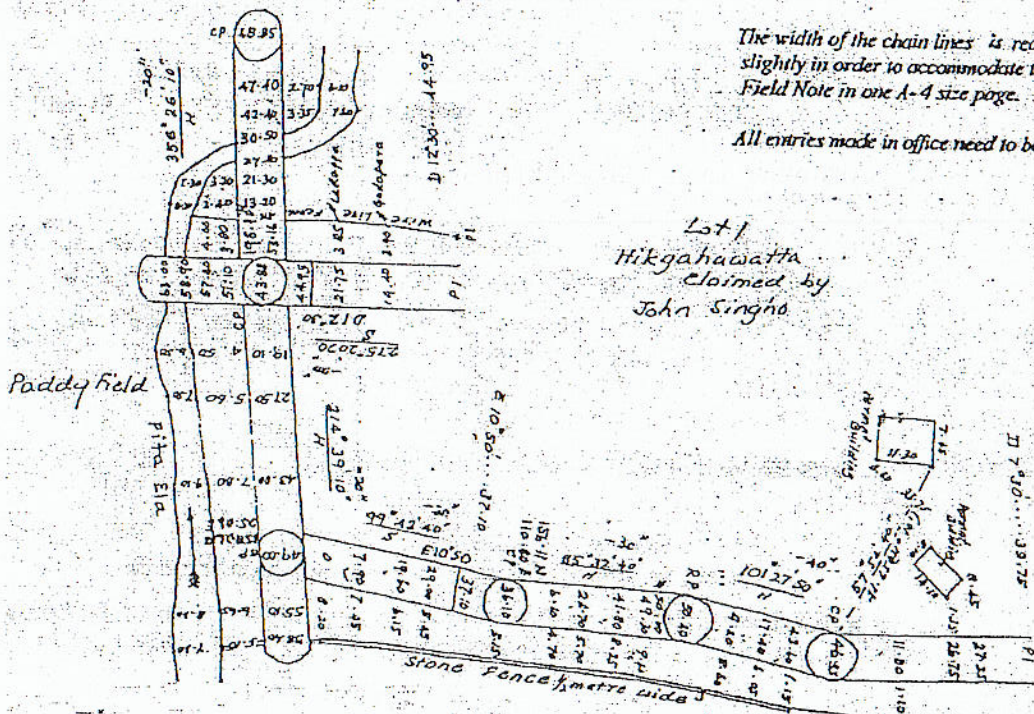


Page 2

Note:

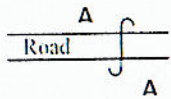
The width of the chain lines is reduced slightly in order to accommodate this Field Note in one A-4 size page.

All entries made in office need to be in red.

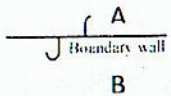


7. Specimen of Cliches

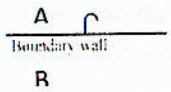
Specimen of Cliches



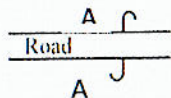
Click through (road and land on either side belong to the same party)



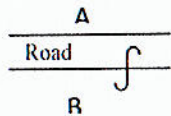
Broken Click (wall belong to the both parties)



Half Click (wall belong to the one party)



Click across (land on either side of road belongs to the same party)



Click through (road and land belong to the client R)



Click through (Building belong to the same land owner)

Any other features to be described suitably

8. STANDARD ABBREVIATIONS USED IN STANDARD PLANS

The following should be noted when inserting abbreviations on plans: -

- (a) The initial should be printed below the lot number.
- (b) No stop should be inserted.
- (c) In close details the letters may be printed outside the lot with an arrow indicating the lot to which they refer, or in a separate reference table.
- (d) For abutting land, the initials should be printed under name of the land.

(A) Revenue Boundaries

Province boundary	+ - - + - - + - - + - - +
District boundary	+ . + . + . + . + . + . +
Divisional Secretary Division boundary	- ... - ... - ... - ... -
Korale or Pattu boundary	- .. - .. - .. - .. -
Village boundary	- . - . - . - . - . - . -
Town boundary	H H H H H H H H H H H H H H H

(B) Boundaries.

B	=	Bank
Dh	=	Ditch
Dn	=	Drain, earth
MDn	=	Drain, Masonry
WF	=	Wire Fence
DF	=	Fence (Dry)
FP	=	Foot Path
LF	=	Fence, Live
Hg	=	Hedge
R	=	Ridge

T	=	Trench
U	=	Indefinite or Undefined (only to be used on unlandmarked boundaries)
W	=	Wall
C	=	Channel (or water-course)
E	=	Ela
S	=	Stream
SF	=	Stone Fence
P	=	Permanent Building
Ty	=	Temporary Building
Road (H)	=	Road (Highways)
Road (P.S.)	=	Road (Pradeshiya Saba)
Road (R.D.A.)	=	Road (Road Development Authority)
Road (I.D.)	=	Road (Irrigation Department)
Road (L.D.)	=	Road (Land Department)

(C) Distinguish contents of lots

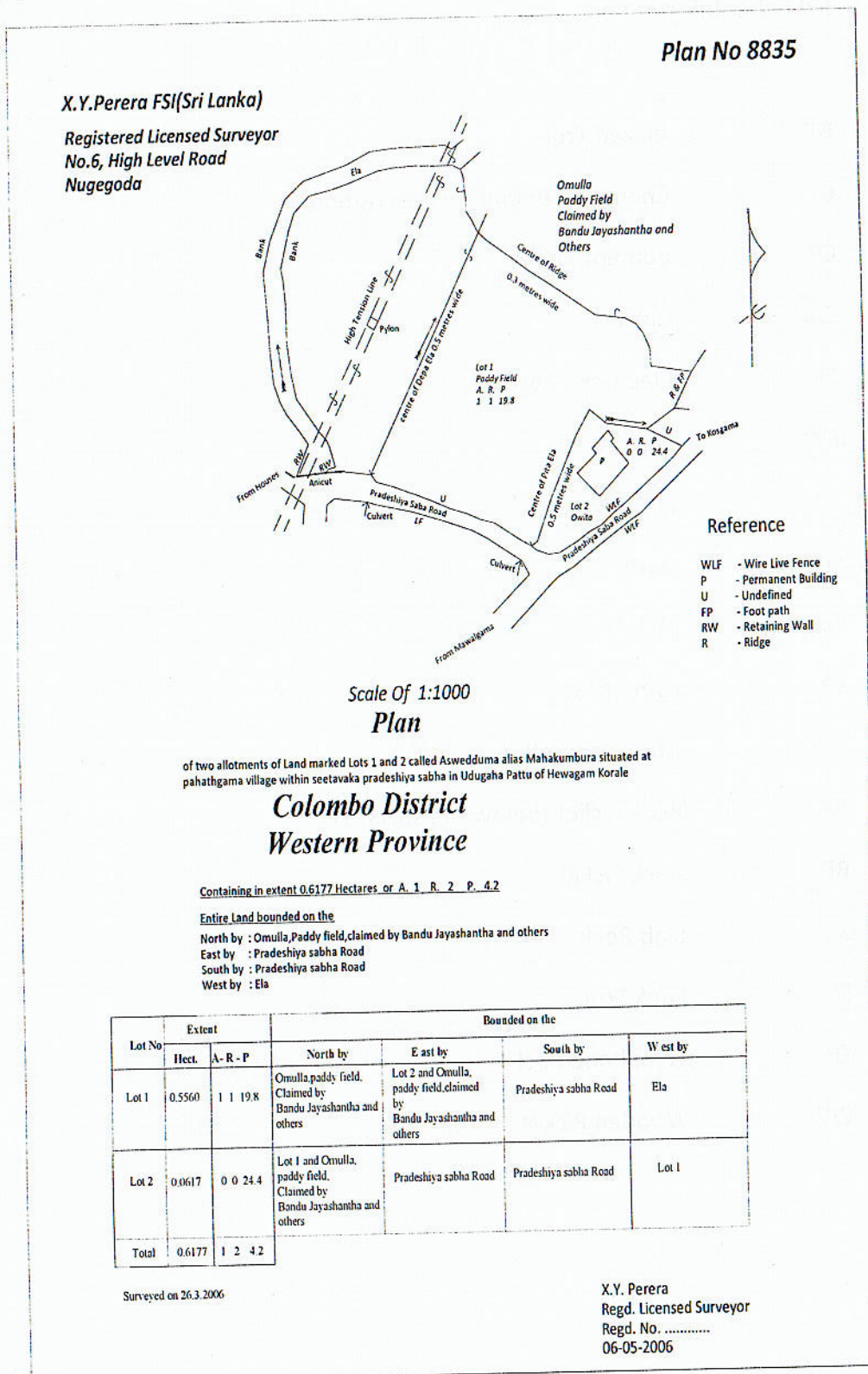
Cam	=	Camphor
Car	=	Cardamom
CE	=	Coconut estate (over 20 hectares)
Cem	=	Cemetery
CG	=	Coconut Garden (under 20 hectares)
Ch	=	Chena
Cin	=	Cinnamon
Cit	=	Citronella
Coa	=	Cocoa
Cof	=	Coffee
Cot	=	Cotton
D	=	Deniya or Diagram
DP	=	Diagram Plan
F	=	Forest
G	=	Garden (permanent or temporary cultivation)
HJ	=	High jungle
LJ	=	Low jungle
LP	=	Lease Plan
MS	=	Milestone
NC	=	New clearing
O	=	Owita
P	=	Paddy field
PG	=	Palmyrah Garden
PL	=	Plantation (gums, teaks &c)
PM	=	Plumbago mine

PO	=	Post Office
PTO	=	Post and Telegraph Office
Pt	=	Patana
PW	=	Public Work Department bungalow
Q	=	Quarry
R	=	Rubber
RH	=	Rest House
RS	=	Railway Station
T	=	Tea
TF	=	Threshing floor
Tob	=	Tobacco
TP	=	Title plan
TP (Cr)	=	Title Plan, Crown
V	=	Vegetables
WH	=	Water Hole
WL	=	Open Waste Land
(ab)	=	Abandoned (used in conjunction with other initials as CG (ab)
Rk	=	Rock

(D) Other Information

BT	Blazed Tree
φ	Change of Boundary Description
CP	Cement Picket
Cul	Culvert
EP	Electricity Post
EW	Earth Well
FP	Foot Path
Ga	Gate
Jak	Jack Tree
LP	Lamp Post
My W	Masonry Well
RP (b)	Rock Picket (below the surface)
RP	Rock Picket
SR	Slab Rock
SS	Sunk Stone
TP	Telephone Post
WP	Wooden Picket

9. Specimen Plan of a Registered Licensed Surveyor



10. Request for a Survey

Request for a Survey

(1) I(NIC No:.....) of
..... request Mr. Registered Licensed Surveyor
to carry out a Survey of the land claimed by me/co-owners as described below :

(2) A) Name of land

B) Village

C) Divisional Secretary's division

D) Korale or Pattu

E) District

F) Province

(3) Reason for the Survey

(4) If the land is co-owned whether a letter of consent from the co-owners has been
obtained and annexed.

(5) Whether there is a plan already prepared for the land. If so annex a photo copy.

(6) If the abutting informations are known state so (for example – North, East, South,
West)

(7) Depending on the special requirements requested by me if any UDA Regulations
are violated I take the full responsibility for it.

Date -

Claimant

11. Request of subdivision/amalgamation of lands with Title Certificates

1. Name(s) of Land Owner(s) :

2. National identity card No/Nos :

3. Postal Address/Addresses:

4. Whether the request is for subdivision or amalgamation?

5. Details of land to be subdivision/amalgamation:

(i) location: (a). District:

(b). Divisional Secretariat Division :

(c). Grama Niladhari Division:

(d). Village or Town:

(e). Street and Assessment No:

(ii) Cadastral Map No :

(iii) Block No(s) :

(iv) Lot No(s) of Land Parcel/Parcels:

(v) Extent(s) of Land :

(vi) Details of permanent erection, cultivation etc in land :

.....

(vii) The required form of subdivision/amalgamation :

.....

6. Title certificate(s) No(s): (attach copy/copies)

7. If state granted land , consent/approval for subdivision by Divisional Secretary is attached

8. If Amalgamation Agreement of all parties are attached.

9. Terms and conditions related to land(s)

10. Name of Surveyor (if wish to survey by a Licensed Surveyor):

11. I/We Certify that this land(s) is/are not subjected to a case filed before the court of law and hereby agree to pay examination fee to the state

.....

.....

Date

Signature of land owner/owners

12. Notes by Title Registrar of relevant Land(s)

The subsequent transaction on said land(s) are temporary suspended until submission of subsequent cadastral plans under the request made by Mr/Ms.....

Name of Title Registrar:

(official frank is required)

Signature and Date:

12. Request of subdivision/amalgamation of lands of single ownership without Title Certificates

1. Name of Land owner :
2. National identity card No :
3. Postal Address:
4. Whether the request is for subdivision or amalgamation? :
5. Details of land to be subdivision/amalgamation:
 - (i) location:
 - (a). District:
 - (b). Divisional Secretariat Division :
 - (c). Grama Niladhari Division:
 - (d). Village or Town:
 - (e). Street and Assessment No:
 - (f). Name of Land(s) :
 - (ii) Cadastral Map No :
 - (iii) Block No/Nos :
 - (iv) Lot No/Nos of Land Parcel/Parcels:
 - (v) Extent(s) of Land :
 - (vi) Details of permanent erection, cultivation etc in land
.....
 - (vii) The required form of subdivision/amalgamation :
.....

t 2)
3.20)

6. If state granted land , consent/approval for subdivision by Divisional Secretary is attached

7. Terms and conditions related to land(s)

8. Name of Surveyor (if wish to survey by a Licensed Surveyor) :

9. I Certify that this land(s) is/are not subjected to a case filed before the court of law and hereby agree to pay examination fee to the state

.....

Date

.....

Signature of land owner

10. Notes by Commissioner of Title Settlement of the area

Please complete only for Lands which are covered by a cadastral map and being processing to register under Title Registration Act.

Senior Superintendent of Surveys(.....District)

The processing to register the said land(s) is/are suspended until submission of subsequent cadastral plans under the request made by Mr/Ms.....

Name of Commissioner of Title Settlement:

Signature and Date:(official frank is required)

13. Request of subdivision/amalgamation of lands with having surveyed enblock due to co-ownership or disputes

1. Name of owners	2. National Identity card No	3. Postal Address
2.		

4. Whether the request is for subdivision or amalgamation?:.....

5. Details of land to be subdivision/amalgamation:

(i) location: (a). District:

(b). Divisional Secretariat Division :

(c). Grama Niladhari Division:

(d). Village or Town:

(e). Street and Assessment No:

(f). Name of Land :

(ii) Cadastral Map No :

(iii) Block No/Nos :

(iv) Lot No/Nos of Land Parcel/Parcels:

(v) Extent(s) of Land :

(vi) Details of permanent erection, cultivation etc in land :.....

.....

(vii) The required form of subdivision/amalgamation :.....

.....

3)
20)

6. If state granted land , consent/approval for subdivision by Divisional Secretary is attached

7. Terms and conditions related to land(s)

8. We would like to get the survey done by Survey Department / Licensed Surveyor (delete inapplicable)

9. Name of Surveyor (if wish to survey by a Licensed Surveyor) :

10. We certify that this land(s) is/are not subjected to a case filed before the court of law and hereby agree to pay survey fee/ supervision (examination) fee to Senior Superintendent of Surveys

Name of applicant	Signature	Date

11. Request by Commissioner of Title Settlement of the area

Senior Superintendent of Surveys (.....District)

The investigation and adjudication of said land(s) is completed. Please subdivide / amalgamate the land(s) according to the schedule submitted herewith and produce subsequent plans as amendments to respective lot(s) appeared in original cadastral map.

The processing to register the said land(s) is/are suspended until submission of subsequent cadastral plans on the request made by Mr/Ms..... on behalf of all applicants.

Name of Commissioner of Title Settlement:

Signature and Date:

(official frank is required)

14. Subdivision of Land violating regulation of Local Authority

Senior Superintendent of Surveys

.....District

Subdivision of Land violating regulation of Local Authority

I/We certify that Mr./Ms., Registered Licensed Surveyor explained me/us proposed subdivision of land will not satisfy the subdivision requirement of the local authority and all the subsequences there by. However I/we willfully accepted this proposed subdivision by me/us and requested him to attend the survey accordingly

Signature(s) of owner(s) :

Name of owner(s) of Land :

National Identity Card No(s) :

Date:

(to be submitted in duplicate)

Appendix 15
(see paragraph 18.3.6)

15. Request digital data required to attend subsequent survey

District Snr.S.S.

I agree to attend the survey requested in Para 5(vii) after identification of owner(s) of land(s) and scrutinizing original documentations of their ownership for the land(s) described in para 5 of applications attached.

Please issue me relevant digital data required to attend subsequent survey of land(s) mentioned in para 5 in the application. I would prefer to collect them by myself/ applicant/ messenger/through e-mail.

My e-mail address is

.....

Date

Name & Signature of Registered Licensed Surveyor

Registration No. :

Annual Licensed No:

Accreditation No:

For use of District Survey Office

Reference No of Survey

Issue of Digital Data

Issuance of following digital data to RLS (.....) is approved.

Description of Digital data to issue :

.....

Signature and date of Snr. Supdt of surveys/ Supdt of surveys(TR Unit)

Receipt of digital Data

Received a compact disk containing relevant digital data for survey (Ref. No.)in order.

Date :

.....
Name and Signature of recipient

NIC No:

16. Request for last lot particulars

(to be submitted by RLS in duplicate)

1. Reference No. given by District Survey Office :
2. I. Cadastral Map No. :
- II. Block No(s). :
- III. Lot(s) No(s) of original land parcel/parcels :
- IV. Extent of original land parcel(s) :
- V. No of lots in new Plan :
- IV. No of new TL pages used :

Please issue last lot particulars of mentioned Cadastral Map to be used in subsequent cadastral survey under above reference number

.....

.....

Date

Signature of Registered Licensed Surveyor

Issue of last lot particulars

- Sheet No to be used :
- Lot Nos. to be used :
- Tenement List page Nos. to be used :

Old Lot Nos.	Extent (Ha)	TL page No.

.....

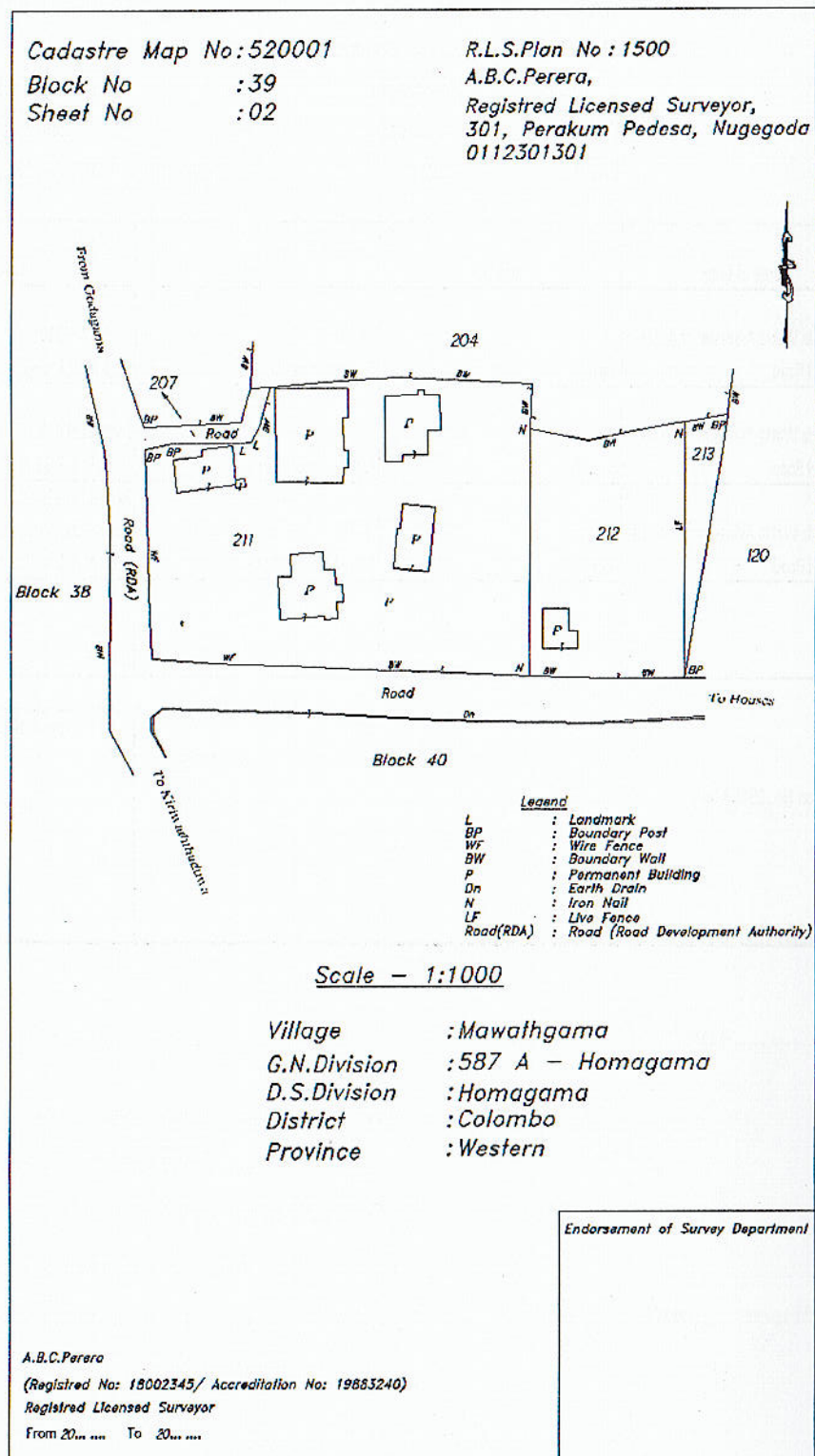
Date

.....

Signature of Senior Superintendent of Surveys

Official Stamp

17. Speciman Cadastre Map



Appendix 18
(See paragraph 18.17)

18. Description of Land

Cadastral Map No : 520001	Village : Mawathgama	R.L.S. Plan No: 1500
Block No : 39	GN Division : 587 A - Homagama	A.B.C.Perera
Sheet No : 02	D.S. Division : Homagama	Registred Licensed Surveyor
TL Page No : 32	District : Colombc	301, Perakum Pedesa, Nugegoda
	Provinc : Western	T.P- 0112301301

Lot No	Extent (Hectare)	Name of Land	Land Use	Claimant	Remarks
211	0.5221	Kandawala Watta, Assessment 433/E1 Highlevel Road	Garden	Padma Siriwardhane	Part of Lot 119 (A: 1, R: 1, P: 6.4)
212	0.1914	Kandawala Watta, Assessment 433/E1 Highlevel Road	Garden	Padma Siriwardhane	Part of Lot 119 (A: 0, R: 1, P: 35.7)
213	0.0280	Kandawala Watta, Assessment 433/E1 Highlevel Road	Garden	Padma Siriwardhane	Part of Lot 119 Occupied by claimant of adjoining Lot 120 (A: 0, R: 0, P: 11.1)
Total	0.7415				Lot 119

<p>A.B.C.Perera (Reg. No. 18002345/ Accreditation No. 19883240) Registred Licensed Surveyor in 20</p>	<p>Endorsement of Survey Department</p>
---	---

19. Surveyor's Report of Subsequent of Cadastral Surveys

Reference No. :

1. Village/GN Division :
2. Divisional Secretariat Division :
3. District :
4. Province :
5. Cadastral Map No : Block No : Sheet No : No of section :
6. Origin parcel No/Nos ExtentTotal
7. New parcel No/NosExtentTotal.....
8. TL Page No:
9. Certified copy of used field notes are attached .

Page No/Nos From To..... of job file

10. Date/Dates of Survey :
11. Amendment Tracings are Attached:
12. File names of original Digital data received from District Survey Office
(I) Adjusted coordinate:-txt (II) Drawing:-.....dwg
13. File names of new Digital data handed over to District Survey Office
(I) coordinates:-txt (II) Drawing:-
.....dxf

(III) Tenement List:- (IV) Cad Plans Drawings:-.....dxf
14. Specified data Layers were used in Plan work
15. Name/Names of land owner(s) :
16. Boundaries pointed out by (Name/Names) :
17. Boundaries pointed out to (Name/Names) :
18. No of new Landmarks used LandmarkRock LandmarkOthe.....(specify)
No of Landmarks Replaced Landmark
19. Replacements of landmarks were endorsed on field notes.
20. Remarks :

Certified that information of 1 to 18 are true and correct.

Signature :

Registered Surveyors Name :

Registration number :

Accreditation number :

Date :

(Note: Pl. provides any extra information (if any) marked against appropriate item number in a separate sheet attached and certified.)

20. Surveys for subdivisions or/and amalgamation in Cadastral Map Examination notes by Survey Department

Cadastral Map No:-

Block No:-

Sheet No:-

Serial No	Item of examination	Notes
01	Received document in Para 3.15	
02	Checked new sheet No. and lot Nos. against letter issued by DSO	
03	Checked CM No, Block No, Sheet No and TL page No adopted correct (Plan, Tenement list, Field notes and Surveyors Report ect.)	
04	Checked Plan and Tenement list against Syrs. Report for differences in	
	i. Village and Grama Niladhari Division	
	ii. D.S. Division	
	iii. District	
	iv. Province	
05	Checked new survey with outer boundary of old lots to ensure boundary matching	
06	Ensure that abutting descriptions agree with Cadastral Map	
07	Amendment tracing has been correctly prepared	
08	Following items are correct in Plan	
	i. Scale	
	ii. North Line	
	iii. Edge comparison	
	iv. Referencing to adjoining sheets	

Serial No	Item of examination	Notes
09	Check each lots to ensure	
	i. Boundaries are adequately defined	
	ii. Boundaries close on field book and Plan	
	iii. Internal boundaries are clitched	
	iv. Boundaries on field book and plan agree	
	v. Boundary description in field book and Plan agree	
	vi. Lot numbers in field book and plan agree	
	vii. Lots are correctly numbered and in sequence	
10	Replacement of landmarks are ensured in field notes	
11	Checked tenement list against Plan for differences in	
	i. Lot No	
	ii. Extent of Lots	
12	Check tenement list against field notes for differences in	
	i. Lot Nos.	
	ii. Name of Land	
	iii. Descriptions of building etc.	
	iv. Name of claimants	
13	Checked digital data	
	i. Data Layers are correctly used	
	ii. Digital data and Cadastral Map agrees	
	iii. Digital file for Cadastral plans are correctly numbered	
	iv. Coordinate are correctly adopted with national grid coordinate system	
14	Cadastral Plans are correctly prepared for each lots	
15	Checked Surveyors name and signature in Plan, tenement list and surveyor's Report	

Checked above items.

Name and signature of Superintendent of Surveys
Date:

Name and signature of Senior Superintendent of Surveys
Date: