LAND SURVEYORS BOARD

GUIDELINES ON TOPOGRAPHIC SURVEYS

THE SURVEY

1. The survey should be controlled and connected **(if practical)** to National Datum.

2. Survey should include cadastral boundaries **where they exist**.

3. Survey Control points should be concreted **but buried underground to serve as reference point for future surveys**

4. Leveling should be done in both directions **start and close on known bench marks** with a closure better than 0.02m per Km.

5. Traverses should close to accuracies better than 1:20,000 **subject to the accuracy driven from the datum.**

6. Picking of buildings should include at least 50% of the corners, but subject to a minimum of 3 corners. Corners should be measured at ground level and the resultant heights included in the final drawing (in order to show the weighted corners and also for contouring.). **At least three side of the buildings should be measured to enable checks on plotting.**

7. Floor levels of buildings should be surveyed and shown on final drawings (FL=??).

8. Building type (permanent/temporary) and building name or usage should be included in the survey.

9. All sewer manholes should be surveyed and include position, cover level, and invert level. These details, plus the sewer line should be plotted on the final map. **The sewer size should be determined.**

10. All utility lines (water, electricity, telephone, etc) should be accurately surveyed where they are visible. Guess work must be avoided.

11. Embankments, cliffs, kerbs, and ditches should be surveyed giving actual levels at top and bottom. Hachures are preferred on final drawing.

12. Spot heights should be distributed depending on detail density and roughness index of the site. Where the ground is even or flat, spot levels should be taken at 5cm apart at map scale (e.g. 25m if plotting is to be done at 1:500).

13. Trees should be picked as spot level (depicting tree position) and the spread should be estimated, booked and plotted to scale. **The trunk radius should also be determined.**

14. Roads should be surveyed more rigorously to include points at centerline, both edges of carriageway, all tops and bottoms of drains, top and invert of culverts/bridges, lampposts,

and road junctions. Other details to be included on the drawing are road names and classification (where applicable), and road destinations at the edges of survey. **The contours however should not cross the roads**

15. Fieldwork should be booked in an organized, clear and standard manner such that computations and plotting can be done independently.

16. Height of instrument, height of signal, date of survey, name of station, name of surveyor, page number and all other standard notes must be included comprehensively in the field notes.

17. It is advisable to use convenient tools such as survey umbrella, waterproof folders, etc for fieldwork. This improves on consistency and cleanliness of the field books.

18. The survey should address its needs fully (e.g. planning, building, engineering, drainage, services etc.

DRAWINGS

19. The scale of plotting should address the survey needs. In all cases, only standard scales should be used (1:50, 1:100, 1:200, 1:250, 1:500, 1:1000, 1:1250, 1:2000, 1:2500, 1:5000, 1:10,000 etc).

20. It is advisable to use only standard paper sizes for final maps (A3, **A2,** A1, and A0). **The survey could be covered on several sheets of size A2 paper and label the series in an orderly manner.**

21. Grid line should be plotted either in full or as crosses depending on client needs. Grid spacing should be 10cm at map scale, and grid values marked clearly along the edges.

22. As much as possible, sheets should be aligned North-South.

23. Where a site is covered by more than one sheet, an index should be included on the title box to show the relationship of the sheets.

24. All survey drawings should include a clear title box which should at least have:-

- Project name and title.
- Name of client.
- Scale.
- Date of survey (finishing date)
- North point.
- A legend showing all the features on map.
- Compilation notes and acknowledgments.
- Datum.
- Space for approvals and revisions.
- Name of surveyor(s) including contact address.
- Location of survey.
- Disclaimers (if any)

- Index to adjacent sheets (if any).

25. Contours should be interpolated between actual spot heights and not sketched. Contours should be correct to a rms error of better than one third of the contour interval.

26. Labeling of contours should follow standard cartographic procedures (e.g. should be read on ascending slope and not necessarily north-south.

27. Field verification should be done to ensure that the final map fully conforms to the ground conditions.

28. Final maps should be prepared on **Dura** film paper preferably 0.3mm thick.

29. Presentation of final maps should be neat and with boarder margins.

OTHER POINTS

30. These guidelines are not completely exhaustive of possibilities and therefore each surveyor should carry out all other additional works to ensure that the accuracy and integrity of the final product is maintained.

    "A wrong survey is worse than no survey at all".