LAND TENURE CENTER
University of Wisconsin - Madison

Consultancy Services to
The Government of the
Republic of Trinidad & Tobago

LAND USE POLICY AND ADMINISTRATION PROJECT (LUPAP)
LAND SURVEYING COMPONENT

ENGINEERING SURVEYING

APPENDIX A

THE STANDARD LIST

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Contents

INTRODUCTION

The Standard List is intended to be used as a reference schedule by:

(a) The Engineering Surveyor whilst on-site (i.e. as a survey check list); and

(b) The client organisation (as a specification request/delete list); or

(c) The Engineering Surveyor (as a means of confirming the specification to the client organisation.

THE STANDARD LIST

1. PERMANENT BUILDINGS/STRUCTURES

a) *archways, underpasses, culverts (with soffit and invert levels)

b) *bridges over, bridges under (with soffit levels)

c) buildings (measured) at plinth line with level at corners and threshold

d) *eaves and ridge levels of buildings

e) *foundations (where visible)

f) *overhead features (canopies, porches, etc) with soffit levels

g) towers

h) tunnels

i) ramps, loading bays

j) swimming pools

k) storage tanks

l) car parks (internal and external)

m) *ruins

n) steps (extent of step feature)

o) postal numbers and/or names/lot numbers of all buildings

2. TEMPORARY/MOBILE BUILDINGS

a) garden sheds

b) mobile buildings

c) *overhead features (canopies, porches, conveyors etc) with soffit levels

d) temporary buildings or structures in outline

e) caves, grottoes

3. BARRIERS

a) fences with height (above ground level) and type

b) gates (with direction of opening)

c) hedges (by trunkline (i.e. centre of trees) with indication of foliage extent)

d) walls (with type, width, height (above ground level), buttresses)

4. ROUTES

a) roads (with channel lines and channel levels)

b) kerb height (above channel line)

c) *access points (i.e. breaks in kerb)

d) *tracks (with edges)

e) *paths (with edges)

f) traffic islands

g) roundabouts

h) pedestrian barriers

i) *pedestrian crossing points

j) car parks

k) street names

5. STREET AND SITE FURNITURE

a) archways and covered passageways

b) barriers

c) bus stops, shelters

d) control boxes

e) *hoardings

f) lamp posts

g) mail boxes

h) monuments, memorials and statues

i) sign posts

j) notice boards

k) posts
l) street name-plates
m) traffic signals
n) cycle racks
o) litter bins (fixed)
p) reflector posts
q) seats/benches
r) gun mounts
s) fixed guns
t) lighting tower
u) wind pump
v) telephone call boxes

6. SERVICE INDICATIONS

a) drainage inspection covers with shape (and cover level)
b) drainage manhole covers with shape (and cover level)
c) gullies (with channel level)
d) *drainage channels (with levels)
e) air valves (as single point)
f) electricity access covers (as single point)
g) gas valves (as single point)
h) water meters (as single point)
i) fire hydrants (as single point)
j) electricity poles (*with route of overhead cables)
k) electricity transformers
l) telecom poles (*with route of overhead cables)
m) guy lines for electricity and telecom poles
n) telephone call boxes
o) marker posts, mile/KM posts
p) oil and gas line markers
q) radio and television masts

7. CHANGES OF SURFACE

a) *hard to soft surfaces (i.e. concrete to grass)

b) *cultivation to non-cultivation (i.e. extent of crops to grass verge)

8. TREES AND VEGETATION

a) extent of bushes and shrubs (where more than 2m in extent)

b) isolated trees above 0.15m trunk diameter (measured at 1m above ground level). Level to be taken by each trunk at ground level. Each tree to have height (above ground level) trunk diameter (measured at 1m above ground level), spread (canopy diameter) and species (where identifiable by the Engineering Surveyor). If species not known, record as “unk” (unknown).

c) staked or supported saplings and/or trees

d) areas of woodland/copse by trunkline (i.e. trunkline of the edge trees of woodland/copse) and overhanging canopy line. Levels to be taken along the trunkline at ground level.

9. PUBLIC SPORT AND RECREATION AREAS

a) *pitch or recreation area limits

b) goal posts

c) *outline of playground apparatus

d) cemeteries

e) courtyards

10. PRIVATE GARDENS OR GROUNDS (where adjacent to or off site)

a) buildings and roof-overhangs (by outline only)

b) extent of property (i.e. boundary features)

c) gates with directions of opening and access points

d) flower beds and rock gardens

e) postal numbers and/or house names

11. WATER FEATURES

a) fountains

b) sea defenses and breakwaters

c) harbor walls

d) *high water mark

e) *low water mark

f) shore line detail exposed at low tide

g) sand dunes

h) sand – extent

i) landing stages, piers, jetties

j) mooring posts

k) navigation beacons

l) pumps

m) outfall pipes (with pipe diameter and invert level)

n) ponds/lakes (with top-of-bank levels, dated water levels, bed levels (where less than 1m deep))

o) rivers (with top-of-bank levels, dated water levels, bed levels (where less than 1m deep), direction of flow arrows, weirs, waterfalls)

p) streams (with top-of-bank levels, bed levels, direction of flow arrow)

q) drains and ditches

r) marshland

s) mangrove swamps

t) canals

u) water catchments

v) water tanks

w) wells

12. EARTHWORKS, TERRACES, ETC

a) boulders

b) *top-of-bank

c) *bottom-of-bank

d) *mounds/spoil heaps by extent and height

e) *quarries, pits and mineral workings by extent, top-of-bank levels and key depth levels (where accessible)

f) retaining walls with top and bottom lines and levels

g) sloping masonry with top and bottom lines and levels

h) caves, grottoes, natural arches and sink-holes

i) *terraces by extent

13. INDUSTRIAL PLANT FEATURES, ETC

a) aerials, masts and pylons

b) *cable ducts (where visible)

c) chimneys (with height above ground, if chimney is of a stand-alone nature)

d) electricity sub-stations by extent

e) filter beds by extent

f) flagstaffs

g) inspection pits

h) *overhead pipes (with height above ground level)

i) *overhead cables (with height at mid-sag above ground level)

j) *ducts (with text details of use)

k) tanks and storage chambers by extent

l) floodlights

m) water taps, stand-pipes and fixed troughs

14. RAILWAY FEATURES

a) *ballast shoulder

b) buffers and stop-blocks

c) switch boxes

d) cable ducts

e) catch pits

f) gantries

g) height gauges

h) huts

i) mile posts

j) platform extent

k) platform furniture

l) points and crossovers

m) rails with level (on top)

n) signals

o) signal boxes

p) signs

15. SURVEY CONTROL-RELATED FEATURES

a) boundary markers

b) bench marks

c) survey stations

d) borehole stakes

*Note … Features listed above (in sections 1 to 15) shall be represented on the engineering survey by solid lines, unless marked with a * symbol, in which case those features shall be represented by a dashed line. It is not necessary to adhere to a rigid framework of line-types or text sizes in the context of engineering surveying. However, CAD systems frequently have their own default settings which may be adopted as a standard unless instructed otherwise by the client organization*.

16. ADDITIONAL SPOT-LEVELS

All spot-levels to be recorded to 3 decimal places and plotted to 2 decimal places.

Spot-levels are required at the following locations, in addition to the level requirements referred to above:

a) *top and bottom of banks at 20m intervals

b) building and structure corners

c) ditches, streams, rivers at 20m intervals

d) thresholds

e) hilltops, depressions and saddles

f) inspection and manhole covers, gullies, ducts and conduits

g) railway lines at 20m intervals

h) road channel lines at 20m intervals

i) steps and ramps (top and bottom)

j) dated water levels

k) a network of spot levels at 20m intervals and changes of grade

17. CONTOURS

a) Contour lines shall be shown at vertical intervals of 1m. On fairly flat sites, the Engineering Surveyor may use his discretion and increase the contour interval to 0.5m or 0.25m.

b) At least 90% of all contours shall be correct to within 0.5m. Any contour which can be brought within this vertical tolerance by moving its plotted position in any direction by an amount equal to 0.1 of the horizontal distance between contours, or 0.5mm at plan scale, whichever is the greater, shall be considered as correct.

c) Where there is thick vegetation or inaccessible land within a site, contour lines will be shown as form lines (i.e. as a dashed contour line). Form lines provide the client organization with an indication only of the shape of the terrain.

18. CONFIRMATION SECTION

To be completed after selections (by highlight/deletion) have been made to the Standard List).

This section may be signed by the Engineering Surveyor and/or an authorised representative of the client organisation, as appropriate and as described tin the introduction at the head of this Appendix.

_____

I, , of

, confirm that the items highlighted/deleted on the above

Standard List are required on the Engineering Survey.

Date _____/_____/_____

_____

I, , Engineering Surveyor, confirm that, in the absence of a client's specification or supplied *(client-selected)* Standard List, I will survey the above items *(highlighted/deleted)* whilst on site.

Date _____/_____/_____

_____

I, , Engineering Surveyor, confirm that I have surveyed the above items whilst on site.

Date _____/_____/_____

_____

Site Location:

Client Organisation No: _____

Engineering Surveyor's Ref No: _____