

# SITE, TOPOGRAPHIC, UTILITY, LANDSCAPE AND SOIL SURVEYS

## PART I. GENERAL

A. These surveys are the basis for making site design decisions. Obtain these surveys and determine the survey limits which will include a sufficient area to cover the complete project.

B. The term "Engineer" herein shall mean the individual, firm, associates, or parties who contract with the Government to provide the services, data, and information described in this document.

C. The Engineer shall:

1. Furnish all labor, materials, equipment, services, and data necessary in making the survey in accordance with the specifications and within the limits of the area indicated on the sketch (if provided).

2. Affix his seal to all drawings and Part III, (Site, Topographic, Utility, and Landscape Survey Check List). The survey drawing(s) submitted shall bear the following certification adjacent to the Engineer's official seal:

"I hereby certify that all information indicated on this drawing was obtained or verified by actual measurements in the field, and that every effort has been made to furnish complete and accurate information."

3. Submit the completed mylar tracings, one sepia print of each, field notes, and the original and one copy of completed Part III to the Contracting Officer within 60 calendar days from the date of the notice to proceed.

## PART II: DRAWINGS

A. Draw the survey on 1069 mm x 762 mm (42" x 30") standard V.A. mylar sheets. On a second 1069 mm x 762 mm (42" x 30") mylar, superimpose the survey grid specified in Part II over the base survey drawing.

B. Base vertical control on the permanent (not assumed) National Geodetic Survey (NGS) or VA Medical Center Bench Mark. Note location, description, and datum.

C. Draw the survey at an engineering scale of 1:350 (1" = 30').

D. Provide the scale of drawing (including bar scale) and direction of true north.

E. Provide a legend consisting of suitable weighted or broken lines and symbols designating property lines, buildings, utilities and other such features. Provide a legend of abbreviations.

F. Indicate contours by broken lines and located at 500 mm (2') intervals.

G. Where more than one continuous plan is required, identify adjoining ends by match lines and reference notes.

PART III. SITE, TOPOGRAPHIC, UTILITY, AND LANDSCAPE SURVEY CHECK LIST

A. The Engineer shall affix his seal to this check list and make delivery in accordance with Part I. General.

B. Check each item of the check list as completed. Some items may not be applicable. In those cases, request in writing a waiver of these items that are not already checked to the Contracting Officer. Attach correspondence for such waivers to this completed check list.

C. Clear, as necessary, the lines of sight. Fell trees under 150 mm (6") caliper, as necessary, where they obstruct vision within the sight line. Do not disturb any plant material within the developed lawn area. Brush and dead-fall may require removal to insure accuracy. The Resident Engineer or VAMC Chief Engineer on duty will determine where debris from such clearing is to be wasted on the property.

D. Install permanent bench mark in area indicated on sketch, if provided. Bench mark monuments of 100 mm (4") minimum round concrete should extend below the frost line with 10 mm x 75 mm (3/8" x 3") minimum copper pin in the center. Install plumb 100 mm (4") above finished grade. Indicate top elevation.

E. Check List Items:

1. Property/boundary lines, length and bearing of each straight line, interior angles, radii, points of tangency, and length of each curved line [ ]
2. Zoning/building setbacks, leases, and easements [ ]
3. Location of all existing buildings and structures. Dimension perimeters in meters (feet) and decimals to .015 m (.05'). Show bearings and dimensions to centerline of adjacent roads. Show distance and offset between each building. [ ]
4. Elevations at each entrance to buildings, service docks, building corners, steps, ramps, and grade slabs [ ]
5. Finish floor elevations of first floor, basement, and sub-basement for all buildings [ ]
6. Location, alignment, and dimension of all roads, curbs, walks, parking, and paved areas. Indicate road centerlines with true bearings and lengths by 15 m (50') stationing. Describe curves by designating the points of curvature and tangency by station. Include all curve data as well as location of radius and vertex points. Designate roads with curbs by double lines. Show equalities for intersecting roads by station.
7. Typical section and dimension through existing roads, curbs, and walks [ ]
8. Crown, grade, and climb of curb at road crossings contours [ ]
9. Elevations on 15 m (50') centers on centerline of roads, edges of roads, and top and bottom of curbs [ ]
10. Jurisdiction and type of pavement of all highways, streets, roads, and alleys on or adjacent to property and known proposed improvements (street widening) [ ]
11. Location, dimension and elevation of backfilled areas, excavations, rock outcropping, etc. [ ]

PART III. SITE, TOPOGRAPHIC, UTILITY AND LANDSCAPE SURVEY CHECK LIST (Cont.)

12. Surface elevations on a 15 m (50') grid pattern, except where terrain features require greater detail. At abrupt changes in grade, show elevations at the tops and bottoms of slopes to the nearest 25 mm (0.1'). Use the grid established for prior survey work in the area. [ ]

13. Site features of every character identified and located with exact measurements. Include fences, retaining walls, areaways, steps, ramps, railings, gratings, flumes, underground tanks, pads, sprinkler heads, telephone poles, fire hydrants and light standards. [ ]

15. All underground, overhead, and surface electrical utilities and structures. Show size, depth, and top elevation of all electrical structures, based on actual site investigation. For electric utility lines, indicate type of service (primary or secondary), number of ducts, voltage, phase and other electrical data. [ ]

16 All underground and surface civil and mechanical utilities and structures. Show size depth, invert and top elevation of all utility structures, such as manholes, catch basins and headwalls, based on actual site investigation. Indicate direction of flow and size of pipe for all sewers drains and connecting lines between manholes. Show location of septic tanks and field lines with condition, capacity, and inlet and outlet of existing septic tank. [ ]

16. Locations, size, and identification of all trees over 100 mm (4") caliper and shrubs by botanical and common names. Show perimeter outline only of thickly wooded areas with description of predominant vegetation. Identify the species of turf. [ ]

PART IV. SOIL SURVEY

When required, provide a Soil Survey (see Structural requirements for subsurface investigation in the A/E Submission Instructions, PG-18-15, Schematics 2). Analyze the soil fertility, organic content, and pH measurement. Reference AASHTO-T-86, and local District Office of the U.S. Soil Conservation Service Standards for procedures in obtaining the above information. Utilize results from the study in making design decisions that includes: [ ]

- A. Earthwork handling techniques such as benching, compaction, and erosion control.
- B. Selection of pavement type and cross section.
- C. Selection of soil amendments.
- D. Selection of landscape materials.