

SECTION 6.2

REFERENCE GRID SYSTEM

1.0 Purpose

To provide a procedure for establishing a grid system for referencing radiological survey activities.

2.0 Responsibilities

- Indoor areas and some open land areas may already be gridded as part of the property owner's decontamination and survey activities. Where possible, ESSAP surveys will utilize this same grid system.
- Indoor grids not already in place will be established by the ESSAP survey team.
- Gridding of open land areas will usually be performed by a professional land survey organization under subcontract arrangements. Survey personnel may perform gridding of small land areas or may subdivide grids established by other groups.
- The site coordinator is responsible for determining the gridding requirements and supervising onsite gridding activities to assure compliance with conditions of survey plans and subcontract agreements.
- The Survey Projects Manager will prepare or approve the necessary plans, subcontracts, and other documents describing and implementing gridding operations.

3.0 Procedures

NOTE: All measurements will be made using a calibrated measuring tape (see Section 5.14).

3.1 Selection of Baseline

The grid baseline is generally selected to be the longest dimension of the property or structure, or to be coincident with a property boundary. Use professional judgement when selecting the grid baseline.

3.2 Referencing to Other Systems

3.2.1 Open land grids should be referenced to a location on an existing state or local grid system. (This will usually require the services of a professional land surveyor.)

3.2.2 Building grids may be referenced to a permanent feature of the structure, such as a specific inside corner.

3.3 Grid Dimensions

3.3.1 ESSAP prefers to use the metric system for gridding measurements. This system will be used, except where the property owner has established an acceptable grid system in English units.

3.3.2 Grid dimensions will be determined based on the potential for contamination in the area and must also allow for adequate systematic measurement and sampling points. Typical grid intervals are 1 to 2 meters.

3.4 Open Land Grid System

3.4.1 Equipment

- ✓ Transit/tripod.
- ✓ Sight pole.
- ✓ Measuring Tape.
- ✓ Grid markers; stakes, flags, flagging tape.
- ✓ Chaining pins.
- ✓ Waterproof marker.
- ✓ Fluorescent paint.
- ✓ Mallet.

3.4.2 The basic ESSAP grid interval is 10 m; however, this interval may be decreased or increased, depending on the total property area and the radiological history of the site.

3.4.3 Grid line intersections, also called grid points are marked using stakes, hubs, spikes, paint, flags, or survey tape. The selection of an appropriate marker depends upon the characteristics and routine uses of the surface.

3.4.4 A specific grid point is identified as the reference for the grid. This point, generally near the center or at a corner of the property, is identified on the grid marker as point 0,0.

- 3.4.5 Coordinates of other grid points are referenced to the 0,0 point using alpha-numeric identifiers. The numeric identifier indicates the distance (meters or feet) and the alphabetic identifier indicates the direction from the reference point, i.e. N(north), S(south), E(east), W(west), or L(left of baseline) and R(right of baseline).
- 3.4.6 Coordinates are identified on or adjacent to the grid point markers.
- 3.4.7 Any location within a grid system may be designated by measuring the distance and direction from the point of interest to a grid point marker.
- 3.4.8 Some examples of grid systems are shown on Figures 6.2-1, 6.2-2 and 6.2-3.
- 3.5 Building Grid System
- 3.5.1 Equipment
- ✓ Measuring tape.
 - ✓ Grid markers; masking tape, markers, paint, chalk.
- 3.5.2 The basic ESSAP building grid interval is 1 meter. If a grid system has been previously established which does not exceed 3m, ESSAP may use that system.
- 3.5.3 Grid blocks are marked on the floor and lower wall (up to 2 m) using a chalk line or other appropriate marking system. The starting point for referencing the grid is usually selected as the southwest corner of the room. Grid blocks can be identified by the southwest coordinate for floors and the lower left coordinate for walls, or by an assigned grid block number (Figure 6.2-4, 6.2-5).
- 3.5.4 Grid points (grid line intersections) are marked using paint, tape, grease pencil, chalk or equivalent. The owner's permission is required before using paint or other markers which may deface the surface.
- 3.5.5 Grid points are identified using an alpha-numeric system. Lines perpendicular to the baseline are identified alphabetically; lines parallel to the baseline are identified by a number indicating the distance from the baseline.
- 3.5.6 Any location within a grid system may be designated by measuring the distance from the point of interest to a grid marker.

- 3.5.7 Where buildings contain multiple rooms, it may be convenient to individually grid each room, rather than attempting to include all areas on the same system. This is at the discretion of the site coordinator.
- 3.5.8 Grid establishment in small rooms (less than 10 m²) and in unaffected (Class 3) areas is at the discretion of the site coordinator.
- 3.5.9 Upper walls and ceiling areas are not usually gridded. Measurements on these surfaces are referenced to prominent building features or to locations corresponding to the gridded floor and lower walls.

3.6 Site Drawings

Following establishment of the grid system, a drawing is prepared by the survey team or the land surveyor, indicating the grid, site boundaries, and other pertinent site features. A legend must be included on the drawing indicating the following information: task number, site name, surveyor, date, distance scale and reference compass direction. Drawings used to record data must first be made permanent by tracing in ink or producing a photocopy prior to the addition of data to the page.

Measurement and/or sampling locations may also, in some cases, be documented on photographs produced by a shutter camera or images produced by a digital camera. These could either be indicated using some type of marker such as a tape flag or chalk marking directly on the equipment at the measurement or sampling location and then taking the picture or by marking on the image after it is created either in hard copy or electronic format.

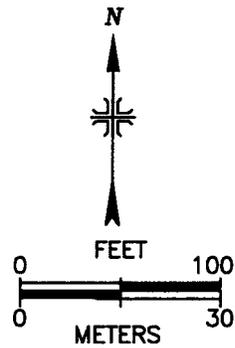
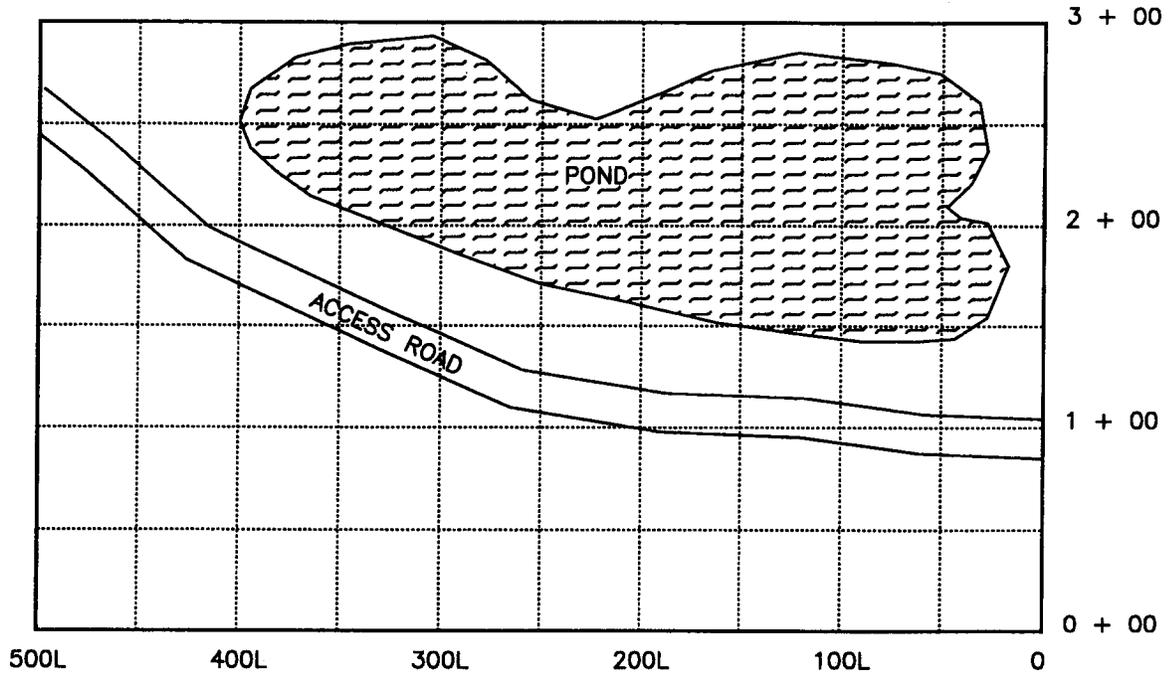


Figure 6.2-1

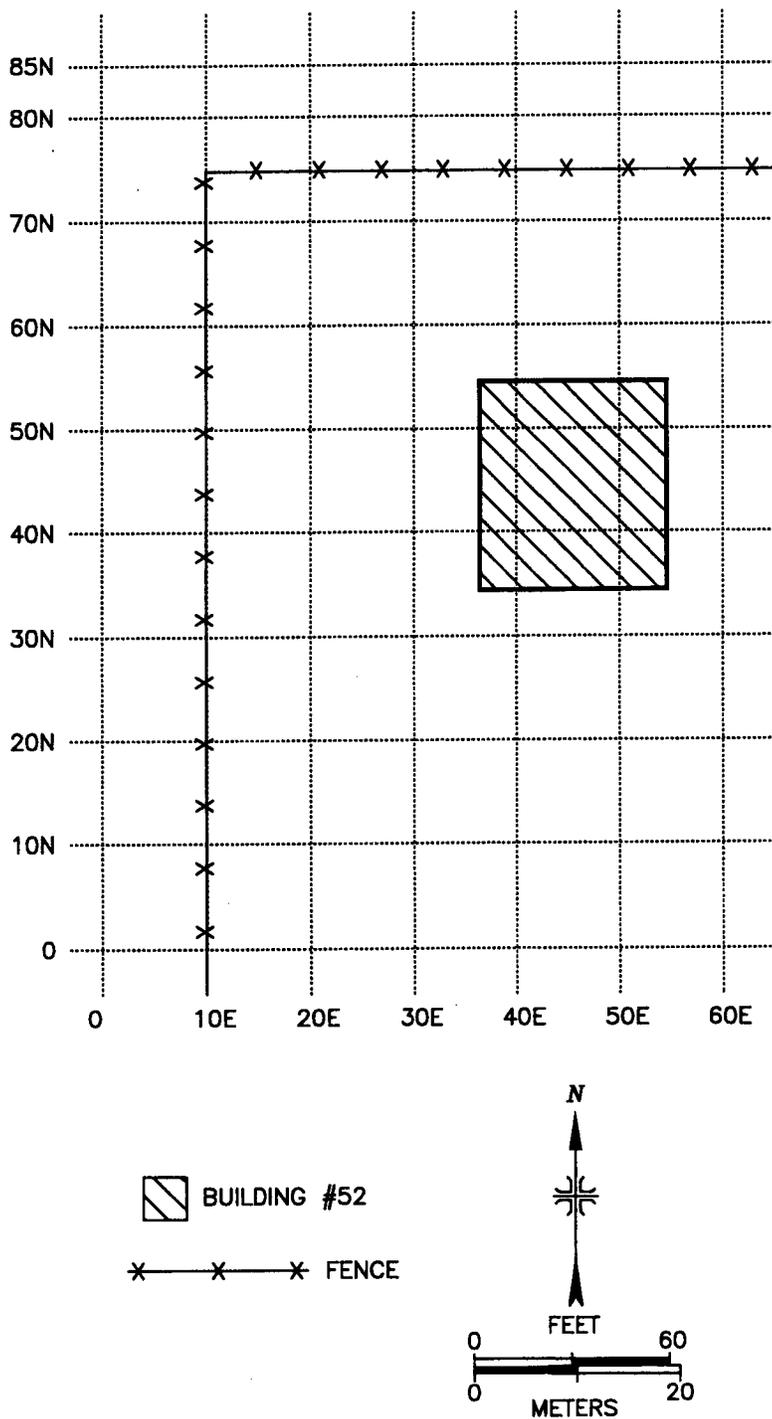


Figure 6.2-2

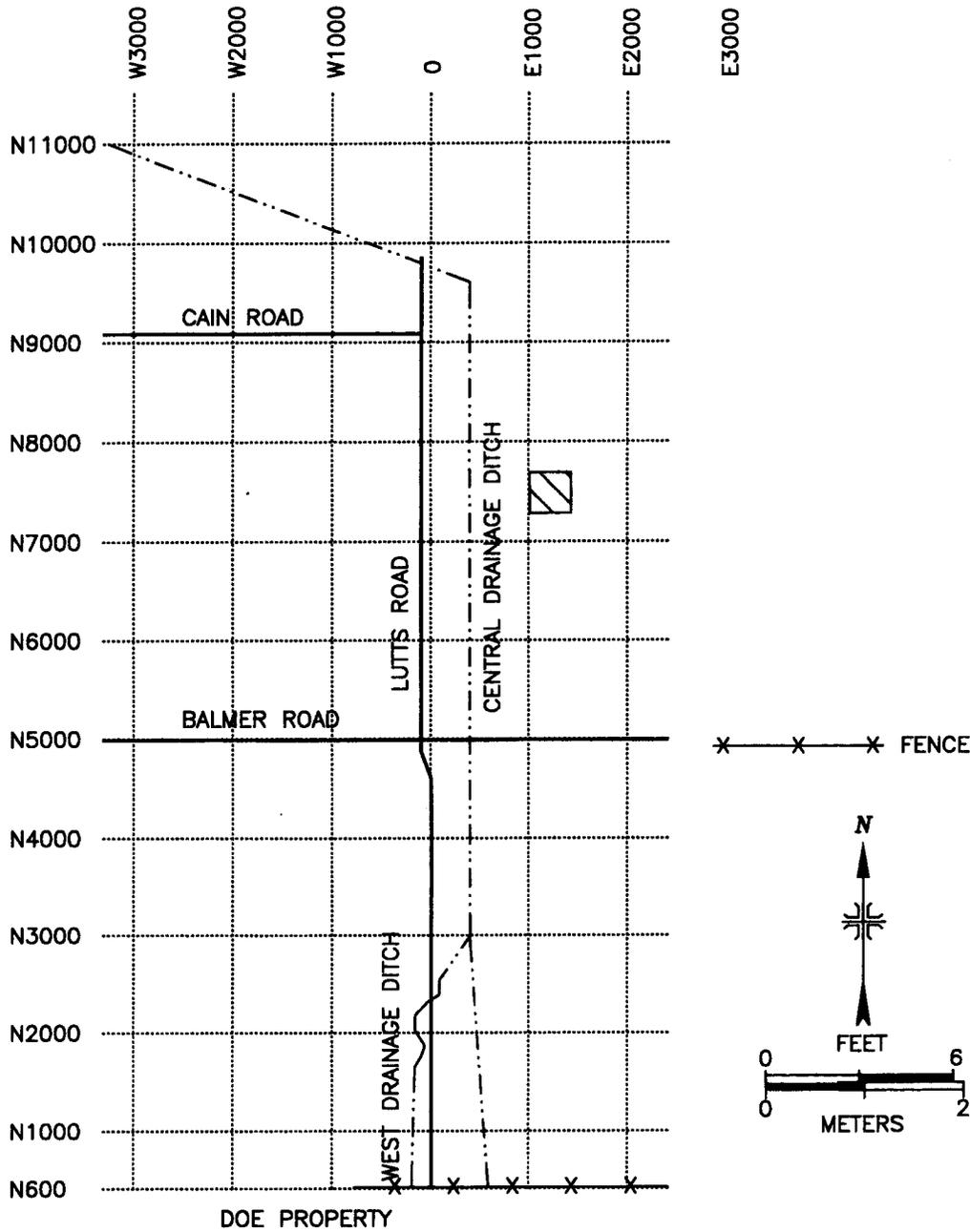


Figure 6.2-3

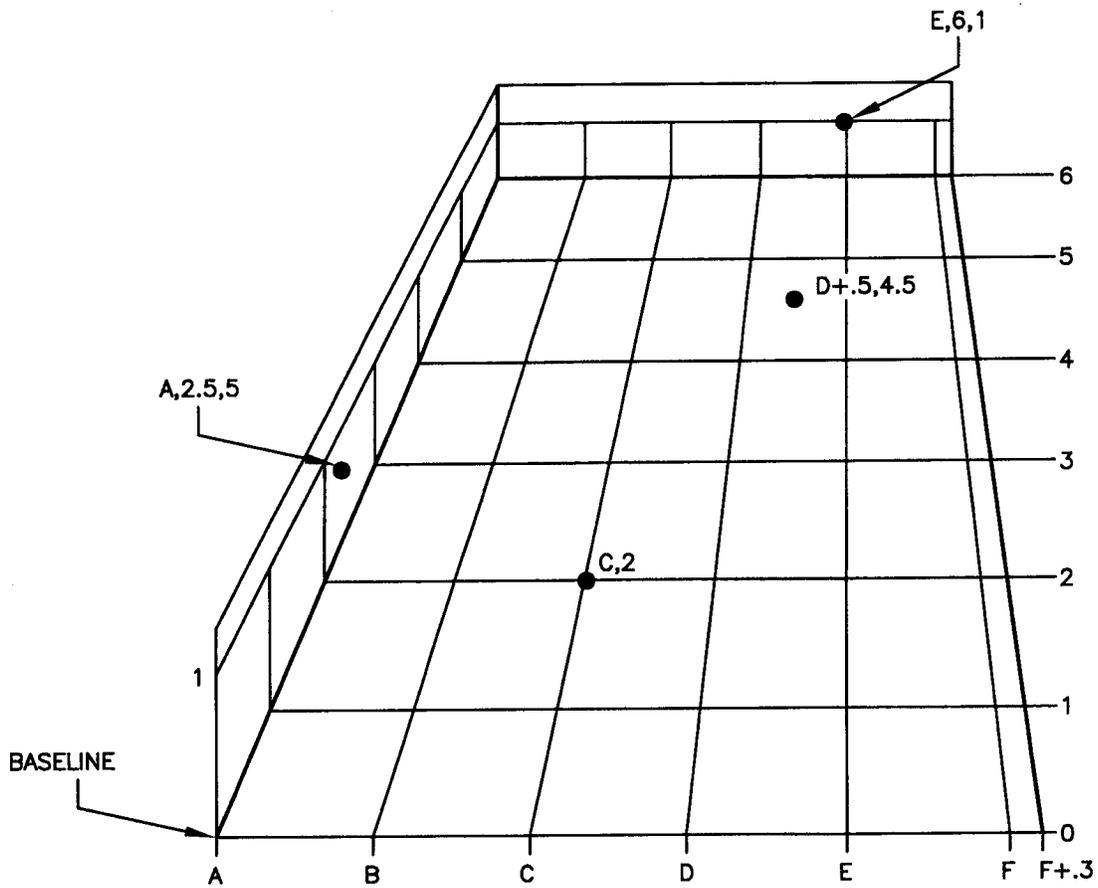


Figure 6.2-4

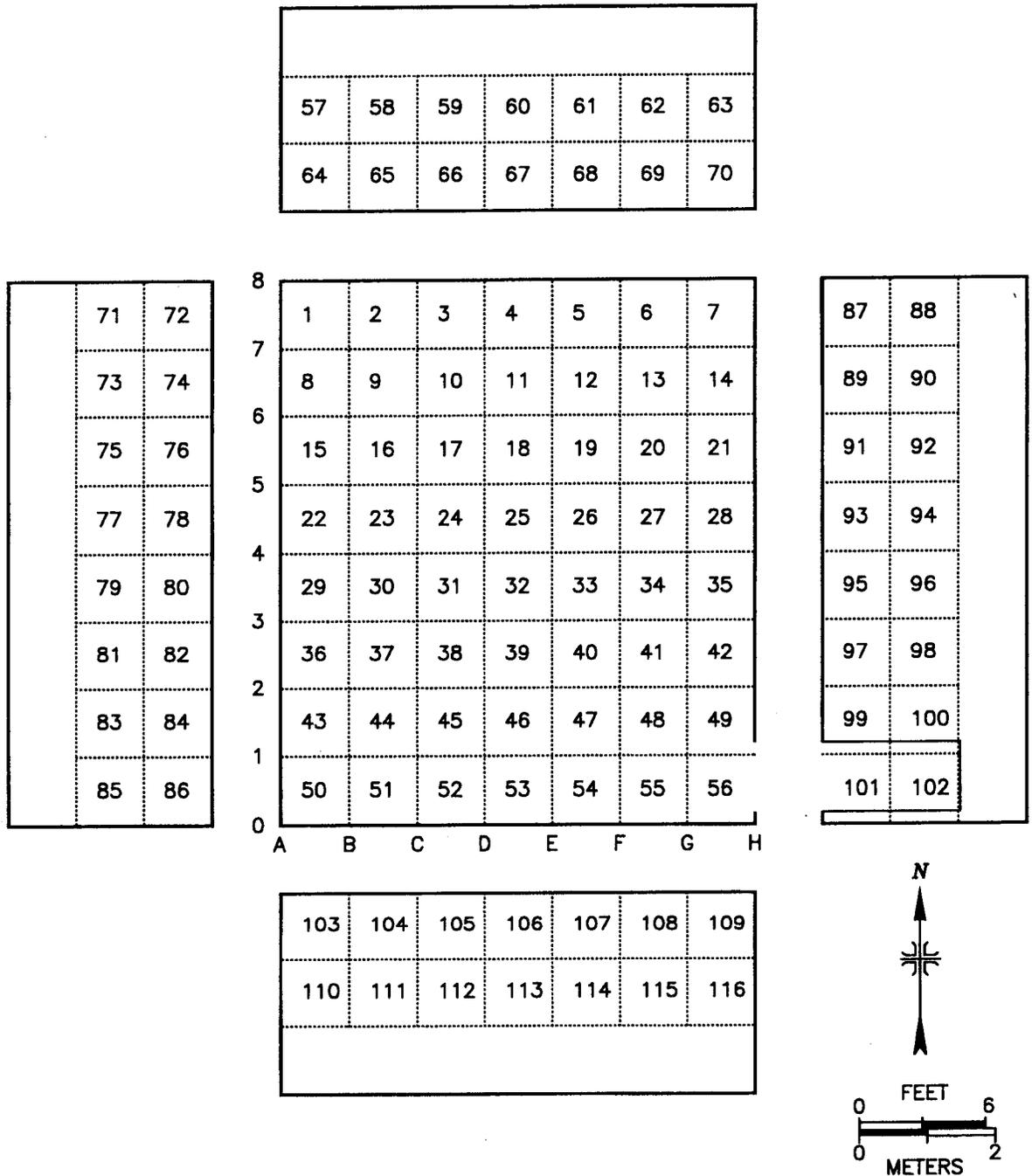


Figure 6.2-5