12. CRIME SCENE DIAGRAMS

A. Introduction

The purpose of the crime scene diagram is to provide a drawing (visual representation) of the crime scene. The diagram is an effective way to present relative measurements and to identify the location of various items considered important to the scene investigator (e.g. a body, items of evidence, doors, windows, furniture, and items which are particular to that scene). A crime scene diagram is not considered an architectural drawing, it is simply an illustrative diagram or drawing that accurately depicts the appearance of the crime scene. A crime scene diagram is not a replacement for scene photographs nor should it be considered as such.

B. Types of Sketches/Diagrams

(1) Overhead, Bird's Eye or Floor Plan

(a) Most commonly used diagram for indoor scenes.

(b) It can be used in nearly all crime scene situations where the items of interest are located on one plane.

(c) This type of diagram is simple and the easiest to understand.

(2) Elevation

(a) Used at scenes where vertical aspects are important such as an exterior wall of a building or the exterior of a vehicle.

(b) Utilizes a vertical plane of view.

(c) This type of diagram would be useful to show bullet holes or bloodstain evidence on walls, windows and/or doors.

(3) Exploded or Cross Projection

(a) Combination of the preceding two types of diagrams.

(b) Utilized for indoor scenes depicting walls as being laid out flat.

(c) This type of diagram would be useful to show bullet holes or bloodstain evidence on walls, windows and/or doors as well as any items of evidence on the floor.

(4) Three-Dimensional

(a) Presents the crime scene information in a more realistic perspective.

(b) Quality hand-drawn sketches are an art form.

(c) A variety of software packages allows for computers to map a virtual scene.

C. Crime Scene Mapping Methods

Crime scene mapping is the process used to define the size of the scene and to locate where in the scene various items were.

(1) Transecting Baseline

(a) Used for outdoor scenes where no permanent objects are available to use as a base for measurements such as in open fields.

(b) A starting point is determined, and a compass bearing is taken from the starting point.

(c) A tape measure is laid down along the compass bearings and measurements are taken at right angles.

(2) Triangulation

(a) Used for outdoor scenes most often.

(b) Need at least two stationary and reasonably permanent fixed objects to use as the source of the measurement base to items of evidence, which form the third point of an imaginary triangle.

(3) Rectangular Coordinate

(a) A variation of the baseline diagram.

(b) Utilizes a reference point and a reference line extending from that reference point.

(c) Measurements are taken at right angles to the reference line.

(d) Works well for desert or other exterior scenes.

(e) After determining a reference point, take a compass bearing at right angles to the reference point. If possible, take bearings at North (0 degrees), East (90 degrees), South (180 degrees), or West (270 degrees).

(4) Polar Coordinates

(a) Works well for exterior scenes in which the evidence is scattered over an open area (e.g. aircraft crashes, scattered remains, or bombing scenes)

(b) Begin with setting a datum point.

(c) Based on surveying techniques; two to three measurements are recorded (depending on need):

i. Horizontal angle
ii. Horizontal distance
iii. Difference in elevation (when recording elevation data)

(5) Total Stations and 3D Laser Scanning Systems

(a) Automated systems that allow for the capture and download of data from the scene into computer-aided-drafting (CAD) software to create drawings.

D. Measurements

(1) Measurements will be taken with a CSR approved measuring device and the device number will be recorded in the scene notes.

(2) Refer to CSR-SOP-13 Crime Scene Measurements section for the specific measuring procedure.

(3) Take other measurements of the periphery of the scene. Pay attention to proper angular and directional relationships.

(4) After establishing the outer boundaries, add various other objects in their proper positions, if applicable.

(a) Measure the locations of objects (e.g. furniture, evidence, windows, doors, etc.) and add to the diagram.

(b) If necessary, write the measurements of locations of items of evidence on a separate document so as to not clutter the rough sketch.

(5) The finished diagram will be oriented with north aligned toward the top of the page.

(6) Write all letters, numbers or wording on the diagram so that they can be read left to right without turning the page.

(7) Diagrams are not to scale and all measurements are approximate.

E. Rough Sketch

(1) After deciding which type of diagram to use, the next step is to prepare a rough sketch at the scene.

(a) A rough sketch is a hand drawn depiction completed of a crime scene to document an area of interest. A rough sketch is a visual aid and can be used in addition to crime scene photographs to give a different perspective.

(b) A rough sketch is not to scale

(2) The rough sketch serves as a guide in completing the finished diagram.

(3) The finished diagram is completed from the original “rough” sketch. NOTE: A computer system may generate a depiction of the scene in lieu of a sketch by hand.

(4) The rough sketch will be maintained and treated as notes.

(5) The rough sketch may include the following:

(a) Overall measurements

(b) Measurements of the items of evidence

(c) A key

(6) A rough sketch can be completed on cases in which the relationship, layout, and/or placement of objects and/or people in a crime scene require a different view point other than photography alone.

(a) Not all cases will require a rough sketch due to the individual case specifics, complexity and the overall goal in which the Crime Scene Specialist and/or investigators are trying to capture.

F. Computer Software

(1) Computer software will be used to create a finished diagram.

(2) For detailed procedures, see the various software user manuals.

G. Finished Diagram

(1) Prepare a separate page for the crime scene diagram legend.

(2) Try to keep the finished diagram as uncluttered as possible. This may be accomplished by having multiple diagrams such as an overall diagram without measurements, an overall diagram with measurements, and an evidence item diagram.

(3) Maintain all “rough” sketches as part of the original notes.

(4) Use standard symbols provided by software when completing the diagram.

(5) Enlarged sections may be made as separate diagrams in order to bring out greater detail.

(6) Unnecessary height or length may be cut off and noted with jagged lines.

(7) Dimension lines may be faint lines with arrowheads.

(a) Keep the finished diagram as free as possible of dimension lines.

(b) Critical or important measurements will be shown on the diagram when necessary.

(8) A title block should be in a convenient location on the diagram. If possible, use the lower right corner of the diagram. The title block will contain the following information:

(a) Complete IR#

(b) Crime type

(c) Address or location of crime

(d) Date of crime

(e) Drawn by-name and serial number

(f) North arrow

(g) “Not to scale”

(h) Page numbers

(i) Handwritten initials of diagram creator; the initials will be the only handwritten items on the document.

(9) The finished original diagram will be scanned into LIMS in the case record and inserted into the document viewer of the case in RMS. Finished diagrams may be completed on investigations when requested by the case agent or for court purposes.

(10) The Diagram and Legend will be page numbered sequentially together.

H. Legend

(1) The finished legend will include the following information on the first page. The additional pages will require just the IR#, date, name and serial number, page numbers, and handwritten initials:

(a) Complete IR#

(b) Crime type

(c) Address or location of crime

(d) Date of crime

(e) Name and serial number

(f) Page number

(g) Handwritten Initials; the initials will be the only handwritten items on the document.

(2) Legend will document only items that are in the diagram.

(a) Reference point (s)

(b) Item descriptions and measurements (evidence, vehicle, body etc.)

(c) Definition of symbols

I. References

(1) Fisher, Barry A.J., *Techniques of Crime Scene Investigation*, 7th ed. Boca Raton, FL: CRC Press, 2004 (Chapter 5 pgs 86-88)

(2) Gardner, Ross M., *Practical Crime Scene Processing and Investigation*. Boca Raton, FL: CRC Press, 2005 (Chapter 7)

(3) Berg, E., *The evolution of the crime scene diagram*, J Forensic Identification, 45, 25, 1995.