CRIME SCENE DOCUMENTATION – SKETCHING

The next component of crime scene documentation is to prepare sketch which portrays the crime scene accurately. Sketching does not require a special artistic ability to construct, rather it is about the accurate measurement. Thus a sketch is quantitative.

A crime scene sketch is a permanent record of the actual measurement (size and distance) relationships between the physical evidence and the crime scene.

Other documentation methods such as note-taking, photography and videography do not allow the viewer to understand the important pieces of information such as dimensions and distance. These alone are not sufficient for the adequate recording a crime scene. The sketch supplement and complements these crime scene documentation and make it easier to comprehend. In addition to this, it sustains the relevancy, reliability, and validity of physical evidence found at the crime scene.

Sketches are made in all serious crimes and accident cases after photography and before any alteration or before anything is moved. Include in the sketch, the entire scene along with objects and physical evidence within the scene.

Importance of sketch in crime scene documentation:

- It serves as a permanent record of the scene.
- It represents accurate physical facts.
- It links and relates the sequence of events at the scene.
- It shows the exact locations of the evidence.
- It establishes a relationship of objects and evidence at the scene.
- It serves to produce a mental picture of the scene for viewers.
- It assists in preparing the crime scene investigative report.
- It assists in investigation process such as interviewing and interrogating.
- It is admissible in court and helps in presenting the case in the court.
- It helps judges, juries, witnesses, and others to visualize the crime scene.

Equipment Needed: Graph paper, Paper, 50-100 foot retractable measuring tape, 1000-foot walking wheel, Folding rule, Ruler, Clipboard, Eraser, Magnetic Compass, PPE (when needed), Flashlight, Notebook and a pencil.

General Considerations:

- A crime scene sketch is a must when the spatial relationship or proportional measurements are expected. Spatial relationships specify how evidences are located in the crime scene, in relation to some reference objects or points at the scene. Proportion calculates if evidence has the same corresponding ratio in their qualities (size, degree or intensity) and are used in such examination as bullet trajectory angles or to reconstruct accidental details.
- At the crime scene, rough sketches are first made. Rough sketches are made after scene photography and before any alteration to the scene or anything is moved.
- Depending on the crime, multiple rough sketches can be made. Such as a sketch showing the surrounding area, a sketch of only measurements or only the locations of evidence/objects.
- Measurements and dimensions of rooms, furniture, doors and windows, and distances between objects, entrances and exits, victims are included in the rough sketch. Details such as object size and proportionality are also drawn in a rough sketch.
• Measurements should be accurate to within \( \frac{1}{4}'' \) and measurements must be taken from fixed reference points within the scene, such as walls or curbs, or from stationary appliances.
• Cover as much information as possible in the sketch: streets, plants, entry and exit points, locations of bullets and cartridges, etc.
• While sketching the scene, record related information in the notes. It is important to use a systematic approach to notetaking while sketching to maintain a record of your activities and the order of sketches made.
• Rough sketches are made in the crime scene and must not alter a rough sketch after leaving the crime scene to preserve its integrity.
• Lastly, a finished or final sketch is prepared using these rough sketches.

**Types of Sketches:**

Basically, two types of sketches are made during crime scene documentation: a rough sketch and a to-scale, final/finished sketch.

**Rough sketches:**

Rough Sketches are prepared while at the crime scene, typically during the preliminary scene evaluation stage, after taking photographs and before any alteration to the scene. The drawing can be drawn with any writing instrument (crayon, chalk, pencil, pen, etc.) and are made not to scale. The sketch is a crude crime scene layout and includes measurements of objects, structures and distance between items.

**A final sketch:**

Final or Finished sketch is a complete version of the rough sketch or sketches. They are prepared for courtroom presentation of the crime scene and reconstruction purpose. It must be clutter free and do not include all measurements and distances originally recorded on the rough sketch.

They only contain significant evidence and structures through the use of an accompanying legend. A legend is a note of explanation, outside of the sketch area, which relates to a specific item, symbol, or information contained within the graphical representation of a sketch.

A final sketch is made in either permanent ink or on a computer, a method that is not able to be modified.

A final sketch should include:

• Title or what does the sketch represent.
• Legends or identification symbols or number for evidence.
• Case Information. (i.e., date, time, location, case number, type of crime)
• Name and Initials of the sketcher.
• An indication of a direction (e.g., North).
• Scene describer (interior of the house, outdoor area of the scene, room 222, etc.) including weather and lighting conditions
• Scale used (e.g.: 1” = 1’).
• Table of measurements, If measurements are not represented within the confines of the sketch.
• A notation following the measurement table stating: “All Measurements are Approximate.” or “Not to Scale”. This ensures that the courtroom controversies or credibility arguments related to measurements can be avoided.
Another type of sketch is three-dimensional Sketching. Measurements obtained are used in computer-aided drawing programs to create a 3D Three-dimensional model construction of the crime scene.

Lately, modern technology of 3D laser scanning device known as laser scanning measuring and sketching system is been used to obtain crime scene sketching. The tool is equipped with a laser scanner and software program to records or capture to-scale images of the crime scene. This technology replaces the cumbersome measuring tapes and sketch pads.

Figure (a): A Rough Sketch

Figure (b): A Finished Sketch

Figure (c): A Three dimensional Sketch. [Image Source]
Categories of Sketches:

There are a number of different types of perspectives represented within a sketch. Most commonly used basic types of perspectives are the overhead or "bird’s eye view" and the elevation or "side view". Other variations to these two types of sketches include the "three-dimensional (3D) view" and sometimes an exploded or "cross-sectional view" of a scene.

Overhead or bird’s eye view: It is the most common form of crime scene sketching. It is a layout of the scene horizontally as seen from the above. It shows the floor layout but cannot represent heights of objects and show related evidence on the walls.

The elevation or side view: When the height of items is an important aspect and evidence located on the building facade, the interior wall is required, the elevation or side view sketch are drawn. It can be used for supplementing the still photography taken.

Three-dimensional (3D) view: Measurements obtained are used in computer-aided drawing programs to create a 3D Three-dimensional model construction of the crime scene and its primary function as being crime scene activity reconstruction, to help explain what happened and in what order.

Cross-sectional view: Sometimes personnel choose to incorporate several perspectives within a sketch. e.g., using both elevation and overhead sketches to draw an exploded or cross-sectional view of a scene.

Crime Scene Mapping:

Mapping is the term associated with crime scene measurements. There are four measuring techniques used to obtain accurate measurements for the sketch:

Rectangular Coordinate Method – The rectangular coordinate method is used when measuring the distance to an object from two mutually perpendicular objects, such as walls that meet at a 90-degree angle.

Evidence 1 and 2 are measured from walls A and B.

Triangulation Method – The triangulation method utilizes two fixed permanent objects within the crime scene. Measurements are taken from each fixed point to each piece of evidence.

Evidence 1 is measured from fixed point A and B.
**Polar Coordinate Method:** The polar coordinate method is more appropriate for an outdoor scene in which only a single fixed or reference point is present. Measure both the distance and direction (angle) an object is from a known reference point. The angle can be measured with either a large protractor or an optical device such as a transit or a compass. The protractor technique with a 360-degree protractor is useful for underwater scenes.

**Base line or fixed line coordinate:** Establish a straight line or base line between two fixed points. The items of evidence will be measured along the fixed line and at perpendiculars to the line.

Evidence 1 and 2 are measured perpendicular to the baseline.