**7.0 Layout and Detailed Drawings**

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| **Figure 7.1:**  General Layout Drawing of the Electro Chemical Lathe | |
|  | 1. Frame for the working enclosure:   The frame is intended to hold the working enclosure in place at moments of operation. The material of the frame will be 304 stainless steel. |
|  | 1. Working enclosure with its lid:   The gap in the enclosure’s lid is intended to be for the cathode, since this will be operating from above.  The enclosure is designed in a box shape to contain the electrolyte around the part. |
|  | 1. Stepper Motor: NEMA   Two stepper motor will be use. One per each axis. |
|  | 1. Lathe’s bed:   The dimensions of the part were taken from the lathe’s bed that was purchased. |
|  | 1. Base:   Made out of aluminum, the base that will be used for this project is the base that was purchased with the lathe. |
|  | 1. Leg supporter:   There will be two 304 SS leg supporters holding the lathe. The frame of the working enclosure will be resting on these supporters. |
|  | 1. G18 Crosslide supporter:   Made of aluminum. It came with the lathe. |
|  | 1. Crosslide:   Made of aluminum. It came with the lathe. |
|  | 1. Tool post:   It came with the lathe. It is made of aluminum. |
|  | 1. 304 SS Extension. |
|  | 1. Head:   The head consist of the following parts: headstock, faceplate, headstock spindle, DC motor, drive pulley, belt, and speed control assembly, among others. |
| 1. The transmission will isolate/hold the part from the system and it will be located in the hole of the enclosure (2) | |
|  | * 1. Spindle disk (SS) |
|  | * 1. Primary insulator (PEI) |
|  | * 1. Rotor (Copper) |
|  | * 1. Secondary insulator (PEI) |
|  | * 1. Bearings (ceramic) |
|  | * 1. 100 Amp Brush (Graphite) |