



Siting Considerations

Small Arms



RANGE AND TRAINING LAND PROGRAM – MANDATORY CENTER OF EXPERTISE

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General

In general, the receiving installation will provide a location or area where they would like the range constructed. The location should be in accordance with the installation master plan. It is also likely that the site is or has been used as a training range. Close coordination with the installation will be required to insure that the site has been characterized with respect to its previous usage. Small arms ranges are generally sited together, which would typically reduce the possibility of Unexploded Ordnance (UXO) or any other hazardous materials. The ideal configuration for the range is a gentle slope upward to the back for optimum line-of-sight and sloping downward to the sides of the range for drainage purposes.

Site Investigations

Site development of the range requires site-specific analysis and evaluation, such as topographic and planimetric surveys and geophysical investigations, in order to achieve realism with minimal site disturbance. The topographic survey shall include utility corridors. A subsurface investigation will generally only be conducted for buildings and soil borrow area locations.

Line-of-Sight Analysis

The designer must insure that all targets and firing positions are site adapted, and a graphical and/or numerical line-of-sight analysis must be performed for all targets and corresponding firing positions. The line-of-sight shots should be taken from the height of the gun barrel at the firing position to a point 150mm (6in) above the front wall of the target emplacement. Because of the size of this range, this analysis should be possible without any special software beyond normal design tools (simple profile cuts from firing position to the target should suffice). In order to verify any changes during design, a line-of-sight analysis must be completed before or concurrent with the 35-percent design and validated at the final design stage. The line-of-sight analysis must be based on a minimum 1/2m (1ft) contour interval topographic survey of the site. (See the Appendix for a sample site survey scope of work.)

Site Clearing

In general, small arms qualification ranges are cleared of all vegetation on the whole downrange footprint, since the purpose of these ranges is to instruct and qualify troops. However, some vegetation can be left between the firing lanes as long as it does not interfere with line of sight between the firing point and the target. If the tower needs to see all the down range targets, total removal of the vegetation in the down range area may be required.

On small arms battle courses and techniques ranges it is desirable to leave the terrain as natural as possible to maintain training realism. The range may require thinning of dense woods and ground cover or no clearing around objectives. The designer must coordinate with the installation's trainers to understand their mission requirements in order to provide the best clearing design.