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Known Distance Range (KD)

RANGE DESIGN GUIDE

RANGE AND TRAINING LAND PROGRAM – MANDATORY CENTER OF EXPERTISE

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE

HUNTSVILLE, ALABAMA

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General

This document contains information specific to a standard Known Distance (KD) range. The document includes references to sections of the RDG for information that is general to multiple range types. The document describes the design and construction information that is specific to the range and is not contained in, or differs from, the general section. Use both the specific information in this section and the referenced general sections together for a complete, useable range.

Purpose

The Known Distance (KD) range is designed for training advanced rifle marksmanship and target engagement techniques with immediate downrange feedback and competition. This range is used to train and familiarize Soldiers on the skills necessary to identify, calculate distance, engage, and hit targets in a static array out to 1,000 meters. It is also used for squad-designated marksmanship (SDM) training and certification. The range has a single target line and individual firing lines spaced at 100-meter increments from 100 to 1,000 meters.

Primary Features

This section provides the standard layout and a listing of the primary features that are standard on a KD Range. The section separates the features between the Range and the Range Operations and Control Area (ROCA). The tables include the number and/or size of each item included in a standard facility with hyperlinks to the RDG sections that contain the general design and construction requirements.

Standard Layout

The following drawing depicts the standard layout for the range. They are included at the end of this document.

- Known Distance Range
- KD Target Wall

Range

Number	Feature	RDG Section
32	KD Target Lifter	N/A
1	Target Wall	KD Wall
1	Target Storage Bunker	KD Wall
	Range Signage	Range Signage

ROCA

Name	Size	UoM	RDG Section
Control Tower – Small Arms	1	EA	Range Control Towers
Classroom Facility	800	SF	Classroom and AAR Facilities Part 1 Classroom and AAR Facilities Part 2

Latrine: Vault (Latrine: Water)	330 (550)	SF	Latrines
Bleacher Enclosure	1	EA	Bleacher Enclosure
Covered Mess	800	SF	Covered Mess
Ammunition Breakdown Building	185	SF	Ammunition Breakdown Building

Design

Use the standard KD Range layout referenced above as the basis for the range.

The standard KD Range has 32 lanes each 10 meters wide. It has a single target line and multiple firing lines. There are firing lines spaced at 100-meter intervals from 100 to 1000 meters. It includes paths or other provisions for soldiers walking between firing lines. The firing lines are generally raised to provide line of sight to the targets. Include lane markers at each firing point that indicates both the lane number and target distance. The maximum angle of fire from each firing line to the target is two degrees, positive or negative.

General Range Design Requirements

This section contains references to the general range design sections of the RDG. Use these in addition to the sections for a specific item or structure and the design requirements in this document specific to the KD Range.

General

- Fire Protection
- LEED
- EPACT
- Furniture
- ADA
- Utility Services

Civil Range Design

- Siting Considerations
- Roads/Trails/Parking
- Target Protection Design Curves
- Line of sight
- Topographic Surveying
- Surface Danger Zones

Electrical Range Design

The KD Range does not have power or powered targets downrange.

- Target Feeder Voltage Drop Spreadsheet/Instructions

ROCA

Refer to the ROCA-General section of the RDG for general design information. The ROCA for the KD Range is based on the standard Small Arms ROCA without the Operations Storage Building. The Control Tower does not have computer scoring capabilities. It is only used to control the firing on the range and for safety.

Firing Line

The KD Range has individual firing lines at 100-meter intervals starting at 100 meters from the target out to 1000 meters. Design the firing positions for easy mowing. Provide walking access to each firing line and between each distance.

Down Range

The KD Range includes a target wall. The wall protects the lifters, the target storage bunker, and the downrange personnel. Details of the target wall and storage bunker are on the detail sheets at the end of this section. The standard target storage bunker is the 'lean-to' type shed. Other options for downrange target storage are an in wall bunker or a standalone building, use of other than the 'lean-to' type requires an exception to standard.

Line of sight

Refer to the Line of Sight (LoS) section of the RDG for LoS requirements, procedures and submittal requirements. The maximum angle of fire from each firing line to the target is two degrees, positive or negative. Each lane must be able to see the target from the prone position at each firing position.

Targetry

The KD Range has manual target lifters with no automated scoring. Personnel behind the target wall lift and mark the targets.

Requirement Documents

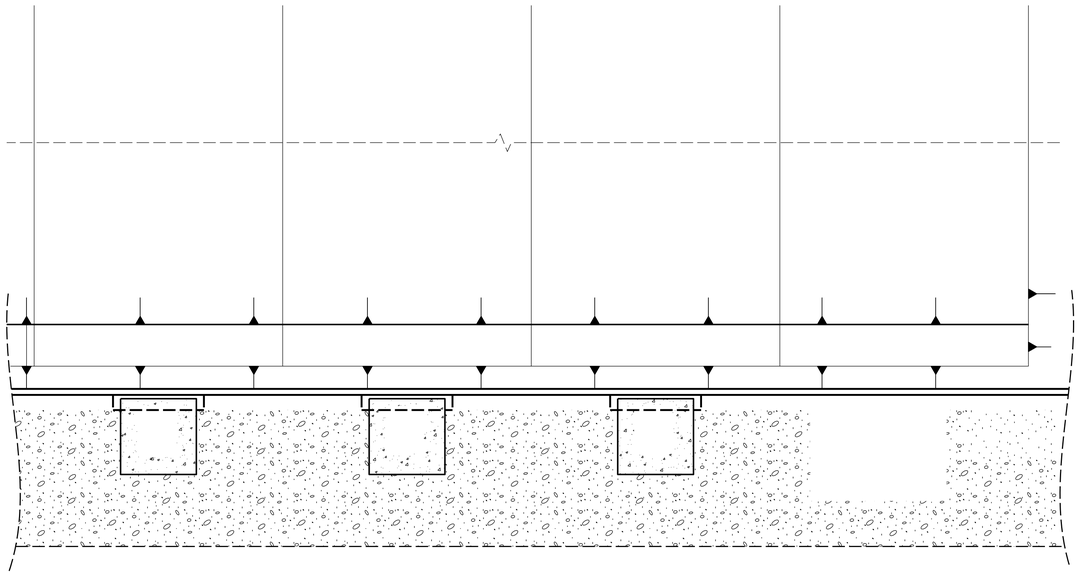
Refer to Training Circular TC 25-8, Training Ranges, for additional information and references to the FMs, ARTEPs, TCs, etc. that describe and require the training on this type of range. The latest TC 25-8 is available at Army Knowledge Online (www.us.army.mil) and the General Dennis J. Reimer Training and Doctrine Digital Library (www.train.army.mil).

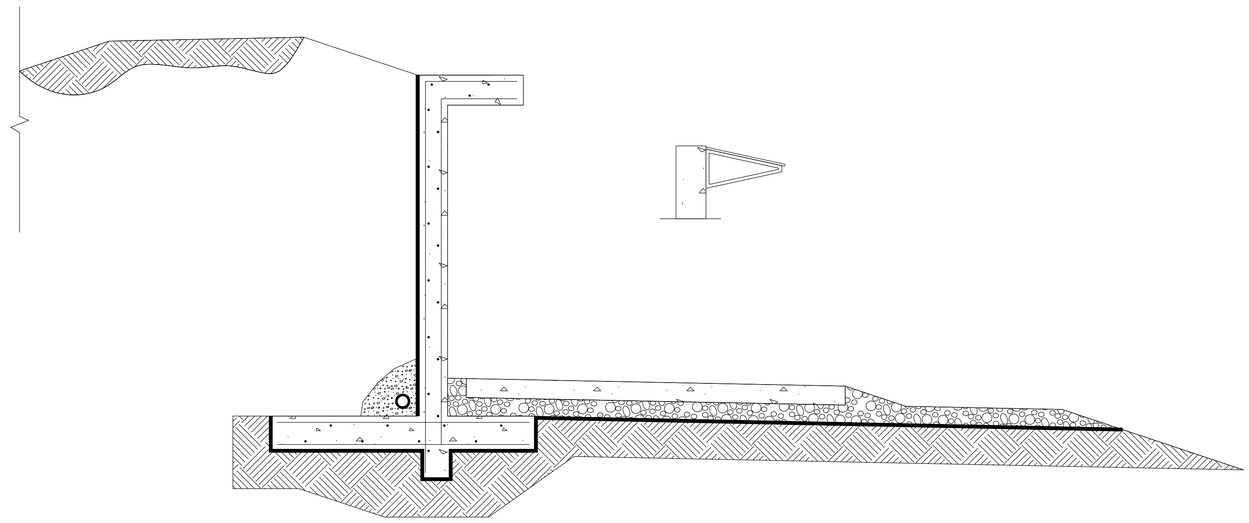
Additional Information

None

Ft McCoy, WI

FT BLISS, TX





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SYMBOL	DESCRIPTION	DATE	BY

DESIGNED BY: $$DESIGNED$$
DRAWN BY: $$DWN$$
REVIEWED BY: $$CHK$$
SUBMITTED BY: $$SUBMITTED$$
FILE NAME: $$$SHORTNAME
SIZE: B 11"X17"
PLOT SCALE:
DATE: $$DATE$$
SOLICITATION NO.:
CONTRACT NO.:
CATEGORY CODE: N/A
PLOT DATE: $$$DATE

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