17630

Multipurpose Sniper Range (MPSR)

RANGE DESIGN GUIDE

RANGE AND TRAINING LAND PROGRAM – MANDATORY CENTER OF EXPERTISE
U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
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General

This document contains information specific to a Multipurpose Sniper Range (MPSR), FCC 17630. It describes the design and construction information that is specific to this range. Use the range specific information in this section along with the appropriate general sections in the RDG for information on range features that are generic to multiple range types. The MPSR replaces the Sniper Field Fire and Heavy Sniper Ranges, FCCs 17812 and 17829. This section of the RDG does not apply to the Army Special Operations Forces MPSR.

Purpose

The Multipurpose Sniper Range (MPSR) design meets multiple sniper training and qualification requirements with a sniper rifle. Shooting can be done from both from the Multi-Environment Firing Platform (MEFP) and from adjacent ground positions. This range is used to train and test Soldiers on the skills necessary to detect, identify, engage, and defeat stationary and moving infantry and vehicular targets in a tactical array. Targets are fully automated, using event-specific and computer driven target scenarios and scored from the range control tower. The range also includes known distance, non-automated targets.

Primary Features

The primary features of the ranges are divided into two categories: the Range and the Range Operations and Control Area (ROCA).

Range

The following drawing shows the standard layout. It is included at the end of this document.

- MSR-C-01
- MSR-A-01

Layout

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

The MPSR has a single lane with target areas out to 2000 meters. The is wedge shaped, 75M at the baseline widening to 250M at 2000M. The baseline has both ground firing areas and a Multi-Environment Firing Platform (MEFP).

The table below provides the target count.

Number	Feature
4	Stationary Armor Target
4	Moving Infantry Target
6	Stationary Infantry Target
2	Vehicle Trackless Moving Target (TMT-V)
2	Infantry Trackless Moving Target (TMT-I)
4	Zero Target Boot Sets

5	Sniper Firing Position
1	Multi-Environment Firing Platform
2*	Moving Armor Target
2*	Moving Infantry Target

* Optional targets if TMTs are not available

Firing Line

The MEFP is located on the firing line. The firing line also has a large, relatively flat, Sniper Firing Position at least 10 meters (30 feet) wide and 3 meters (10 feet) deep and a small, 3 meters (10 feet) square, position along the firing line for each of the four zero targets.

Multi-Environment Firing Platform

The MEFP has several interior room and roof configurations. It is designed to test and train set-up and shooting in/from different situations. It has several interior rooms that replicate bright, dark, and confined spaces as well as different regions, refer to TC 25-8 for details. The front wall can be changed as needed to replicate different opening types and sizes. The roof has different roof pitches and parapet wall heights. An example design is shown on MSR-A-01 which is included at the end of this section. The example shown is reinforced concrete, but other construction methods, like shipping containers, are also possible. The structure must be designed to withstand repeated interior and exterior live fire training with current sniper weapons; .50 caliber is typically restricted to outside and from the roof.

Down Range

The range is a single 2000M lane, 75M wide at the baseline widening to 250M. SIT, MIT, and SAT targets are placed as shown in TC 25-8 or on the attached drawing. Targets may be shifted to improve line of sight or to avoid bad areas, but those shifts must be coordinated. TMT-Is are engaged between 500M and 900M; TMT-V between 700M and 1600M. Coordinate with installation, TPO Ranges, and the MCX to ensure that sufficient ground area within those bands (1) can support the movement of the trackless targets and (2) provide Line of Sight (LoS) from the firing positions. Provide a TMT capable road from the engagement areas to the re-charging location in the ROCA. The range area beyond1600M is used for static or iron maiden targets. Coordinate with the installation, TPO Range, and the MCX to ensure that sufficient areas beyond 1600M are visible from the firing areas.

Line of Sight

Refer to the Line of Sight (LoS) section of the RDG for LoS requirements, procedures, and submittal requirements.

The range is lane-based, requiring LoS from the firing positions to each target within the lane. Provide LoS to sufficient portions of the TMT and Iron Maiden target areas. Coordinate LoS to areas with the installation. The limit markers also need to be visible from each firing position.

The control tower must have an unobstructed view of the entire firing line.

Targetry

The MPSR uses fully automated targets with event-specific, computer-driven target scenarios and scoring. The Range Control System (RCS) computer in the Control Tower controls the

targets through the target data network. The target data network can be either hard-wired or Radio Frequency (RF), refer to the Electrical Range Design Section of the RDG for further information. The computer captures the scoring data which can then be used by the unit for performance evaluation in the after action review process.

This range includes provisions for Vehicle and Infantry Trackless Moving Targets (TMT-V and TMT-I). The standard targetry package includes 1 TMT-V and 4 TMT-I targets. These targets are battery operated. Charging is done at the ROCA outside the Operations/Storage Building. Consider requirements for additional cut/fill and road network depending on soil types, terrain, and scenarios. Coordinate with installation trainers for the areas where TMTs will operate, areas from where they must be visible. Also consider providing hide locations; areas where TMTs are not engaged and can be hidden.

ROCA

Refer to the ROCA section of the RDG for general design information for each specific structure. Base the ROCA for the MPSR on the Small Arms ROCA.

The Control Tower must have an unrestricted view of the firing line. Range operators in the tower should be able to see most of the target area.

The Operations and Storage Building (Ops/Stg) has the additional requirement for storing and charging TMTs. Because of the additional fire protection/suppression requirements for the battery types used, charging and storage are done outside of the building. Refer to the Ops/Stg section in the RDG for specific requirements. Consider road access to/from downrange when siting this facility in the ROCA.

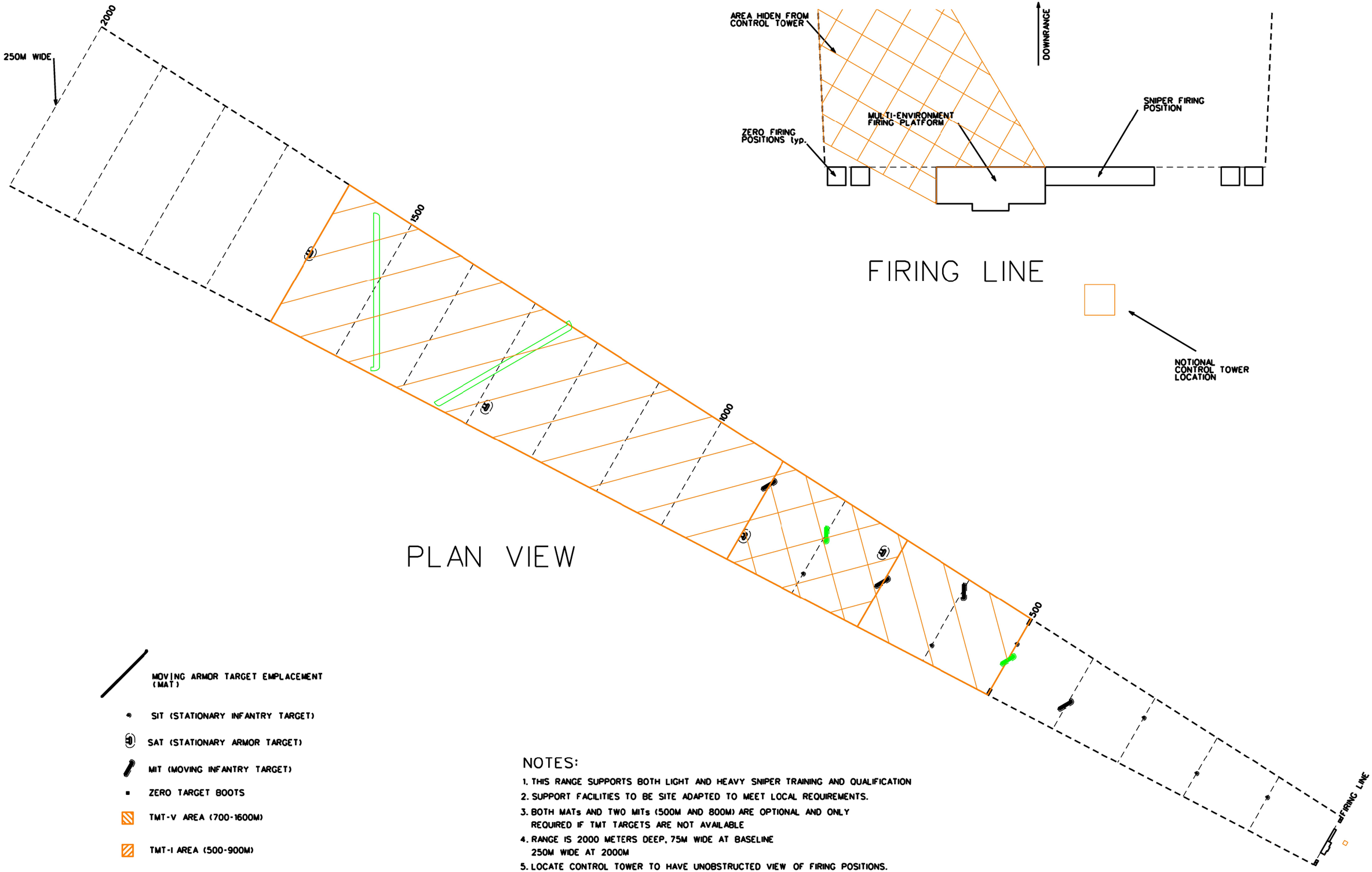
Name	Size	UoM	RDG Section
Control Tower – Small Arms	1	EA	Control Towers
Operations/Storage Building, Standard- with added covered area for TMT charging	1200	SF	Operations and Storage Buildings
Classroom Facility	800	SF	Classroom and AAR Facilities
Latrine: Vault (Latrine: Water)	330 (550)	SF	Latrines
Bleacher Enclosure	1	EA	Bleacher Enclosure
Covered Mess	800	SF	Covered Mess
Ammunition Breakdown Building	185	SF	Ammunition Breakdown Building

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



PLAN VIEW

FIRING LINE

NOTIONAL CONTROL TOWER LOCATION

MOVING ARMOR TARGET EMPLACEMENT (MAT)

SIT (STATIONARY INFANTRY TARGET)

SAT (STATIONARY ARMOR TARGET)

MIT (MOVING INFANTRY TARGET)

ZERO TARGET BOOTS

TMT-V AREA (700-1600M)

TMT-I AREA (500-900M)

NOTES:

1. THIS RANGE SUPPORTS BOTH LIGHT AND HEAVY SNIPER TRAINING AND QUALIFICATION
2. SUPPORT FACILITIES TO BE SITE ADAPTED TO MEET LOCAL REQUIREMENTS.
3. BOTH MATs AND TWO MITs (500M AND 800M) ARE OPTIONAL AND ONLY REQUIRED IF TMT TARGETS ARE NOT AVAILABLE
4. RANGE IS 2000 METERS DEEP, 75M WIDE AT BASELINE 250M WIDE AT 2000M
5. LOCATE CONTROL TOWER TO HAVE UNOBSTRUCTED VIEW OF FIRING POSITIONS. NOTIONAL POSITION SHOWN IS 20M BEHIND AND CENTERED ON GROUND POSITION.

US Army Corps of Engineers

Rev.	Description	Date	Approved

Designed by: | Drawn by: | Coded by: | Reviewed by: | Submitted by:

Drawing code:

File name:
Plot scale:

Design file no.

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
HUNTSVILLE, ALABAMA

AUGUST 2023

RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
FCC* 17630
MULTIPURPOSE SNIPER RANGE

Sheet reference number:
MSR-C-01

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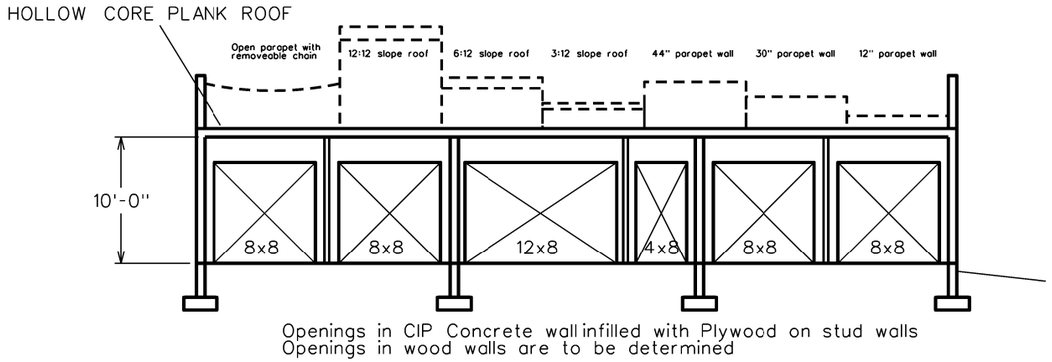
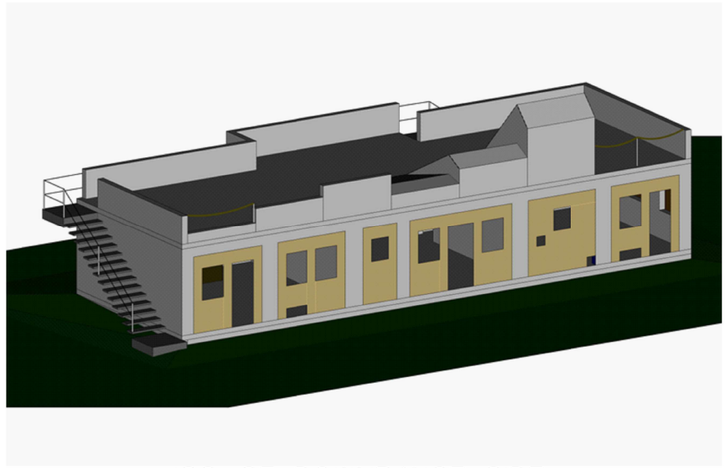
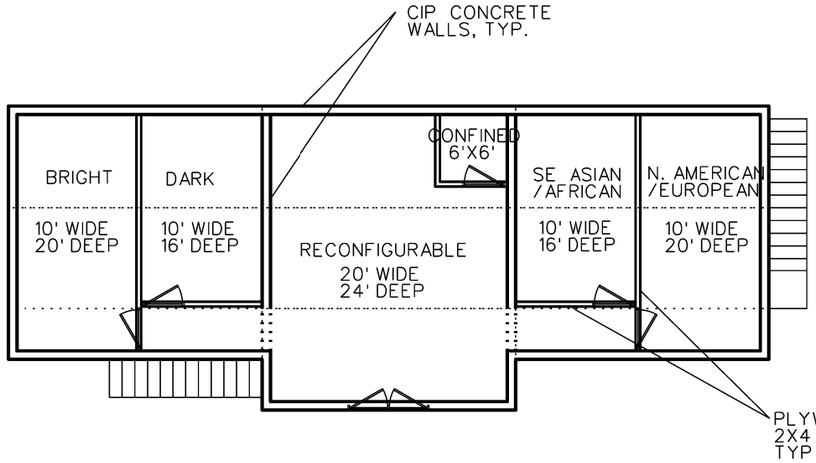


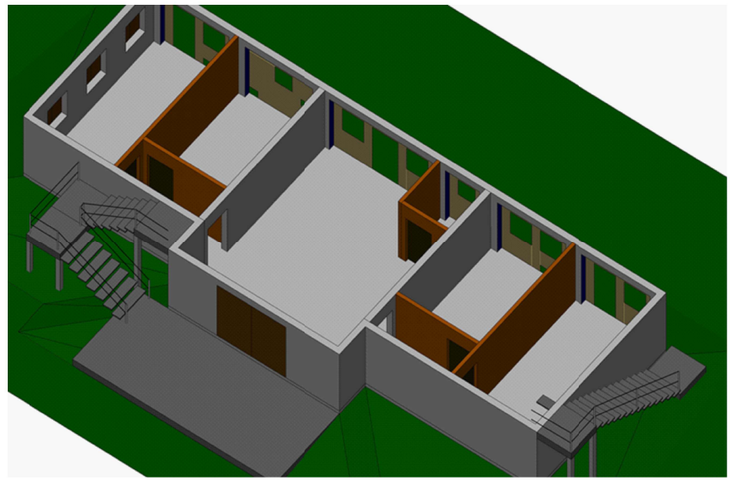
VIEW OF FRONT WALL FROM INSIDE



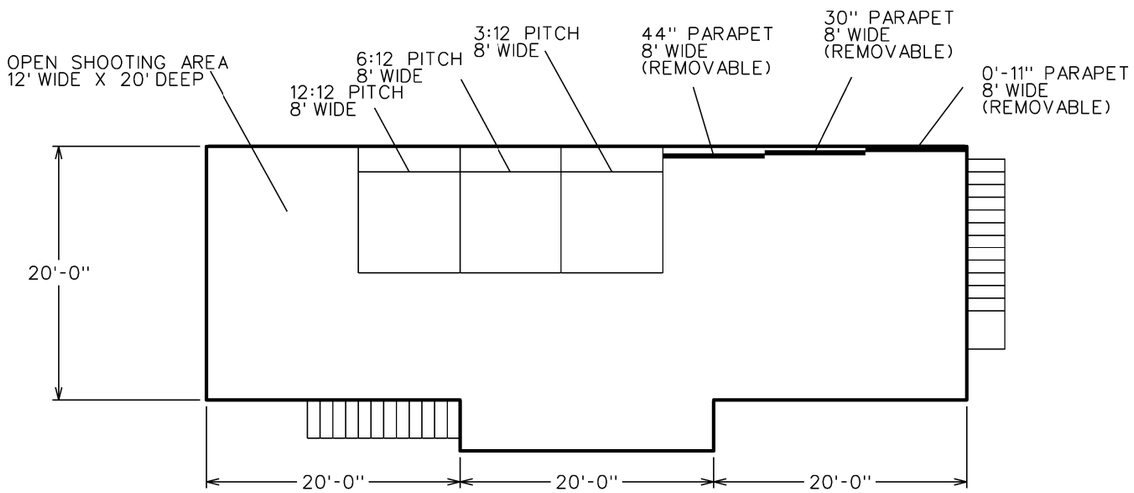
ISO OF DOWNRANGE SIDE



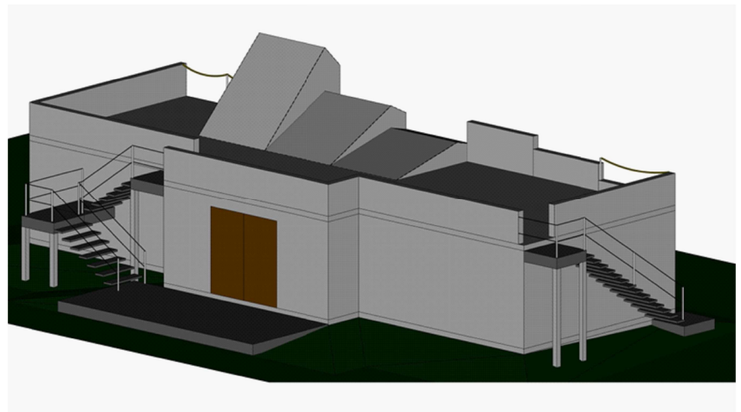
PLAN VIEW



ISO OF INTERIOR



ROOF PLAN



ISO OF UPRANGE SIDE

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Designed by:
Date:
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MULTI-ENVIRONMENT FIRING PLATFORM

Sheet reference number:
MSR-A-01

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