



17878



Urban Assault Course (UAC)

RANGE DESIGN GUIDE



RANGE AND TRAINING LAND PROGRAM – MANDATORY CENTER OF EXPERTISE

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE

HUNTSVILLE, ALABAMA

256-895-1534

[EMAIL RTLP](#)

General

This document contains information specific to an Urban Assault Course (UAC). 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.

Purpose

The UAC consists of five (or six) separate stations designed for small unit training in urban operations. This range supports training of individuals, teams, squads, and/or platoons on individual and collective tasks associated with military operations in urban terrain (MOUT). Only Station 3 is intended for live fire training.

Primary Features

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

Range

The drawings listed below show the standard layout of the UAC and each station. They are included at the end of this document.

- [UAC-C-01 - Urban Assault Course – Site Layout](#)
- [UAC-01 - Urban Assault Course – Station 1](#)
- [UAC-02 - Urban Assault Course – Station 2](#)
- [UAC-03 - Urban Assault Course – Station 3](#)
- [UAC-04 - Urban Assault Course – Station 4](#)
- [UAC-05 - Urban Assault Course – Station 5](#)
- [UAC-06 - Urban Assault Course – Station 6](#)

Layout

Use the standard UAC layout at the end of this section as the basis for the range.

The standard UAC consist of five Stations; Station 6 is optional at those locations that have the training requirement for mine detection.

- Station 1 – Individual & Team Task – Technique
- Station 2 – Squad & Platoon Task – Technique
- Station 3 – Grenadier Gunnery
- Station 4 – Urban Offense/Defense Building
- Station 5 – Underground Trainer
- Station 6 – Explosive Hazard Detection Lane (Optional)

Station 1 supports basic individual and team urban training skills. It is a non-live fire facility. It is a three-room structure with windows, doors, and mouseholes to replicate various room entry configurations. It has no roof and an observation platform for trainers. CMU is the standard construction material. Coordinate with the installation to ensure that there are areas around this station to train maneuvering to the structure; include various cover types as necessary.

Station 2 supports basic urban training for larger elements, up to a platoon. It is a non-live fire facility. It consists of a number of one-story buildings on two sides of a center street with a two-story structure at the end. The structures do not have roofs. CMU is the normal construction material.

Station 3 supports grenadier gunnery using the dual purpose M203. It has an open area with hasty firing positions with a two-story facade at end. The station supports small arms live fire and M203 training grenades (non-dud producing). The facade is normally wood construction with a flexible rubber membrane on the face. Design the facade so that it can withstand multiple impacts from the practice grenades with minimal damage and without causing ricochets from small arms firing.

Station 4 is a multi-story, multi-roomed, CMU, non-live fire structure designed to replicate several different building arrangements/scenarios. The facility has several room configurations/sizes, windows, doorways, loopholes, and mouseholes. Ensure that interior finishes support a non-water/weather tight structure. Include non-slip, sealed concrete floors that are sloped to drain. Seal CMU walls and floors against damage from rain and snow. Use sturdy construction methods to decrease maintenance requirements. As an option, where the training requirement exists, site the building so that it lines up with Station 3 to support sniper training.

Station 5 supports the training of basic underground tactics and procedures. Site the facility so that it drains well. The typical design is to place the pipes on grade then cover with soil. Use concrete pipe and manholes. Include gates at entries to keep out animals. Attaching the underground trainer to the basement of Station 4 adds additional training scenarios and is an option. Include natural ventilation as necessary. Adding mechanical ventilation increases cost and maintenance requirements, do not use unless required.

The optional Station 6 supports explosive hazard and mine detection training. It does not support actual explosives or mine clearing. The station is only included at those installations that have a mine-detecting mission. Select a well-drained site that requires minimal earthwork, keep soil disturbance to a minimum. Grub the entire footprint, clearing the soil of all roots, large rocks, and foreign materials to a depth of 2 feet. Remove metal and other foreign materials using the latest detection techniques. Recompile disturbed areas with native soils to match adjacent areas; the intent is to have uniform soils and compaction over the entire lane. Adjust the layout of the lanes and footprints to fit the site; keep the lane and footprint sizes and separations. Adjust the number of lanes depending on the training load. Keep concrete for the PVC corner pipes, if used, a minimum of 1 foot below grade. Coordinate with TCM Ranges and the RTLPMCX for additional specific information.

Line of sight

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

Line of sight is required on Station 3 from each of each firing position to the facade.

Targetry

The UAC no longer has automated targets; all targets and target power outlets have been removed. The only power requirements are lights in Station 4. Station 3 includes 3 Iron Maiden targets in the facade.

ROCA

The ROCA for the UAC is based on the standard Small Arms ROCA, though with only three buildings.

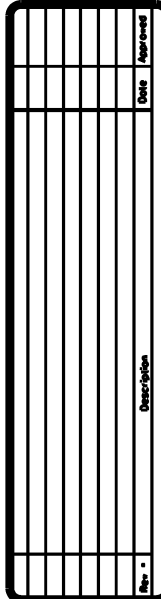
NAME	SIZE	UoM	RDG SECTION
Operations/Storage Building, Standard	800	SF	Ops/Stg Buildings
Latrine: Vault (Latrine: Water)	330 (550)	SF	Latrines
Ammunition Breakdown Building	185	SF	Ammunition Breakdown Building

Requirement Documents

Refer to Training Circular TC 25-8, Training Ranges, and TC 90-1, Urban Operations, 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



**RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
URBAN ASSAULT COURSE
SITE LAYOUT**

NOTES:

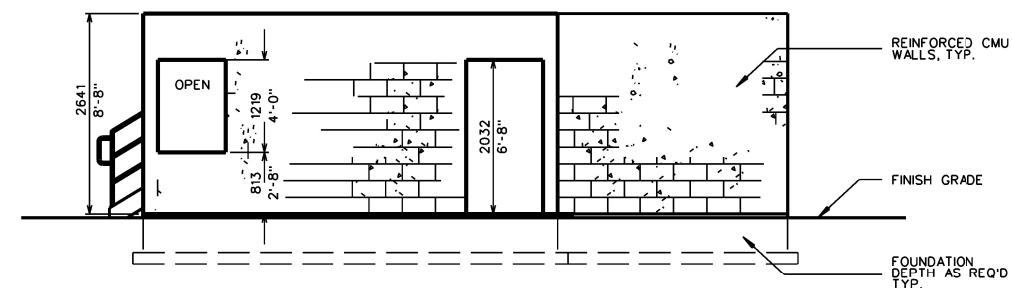
1. ADJUST LAYOUT AS NECESSARY BASED ON SITE
2. COVER IS IDENTIFIED AS TREES, BRUSH OR OTHER FORMS OF VEGETATION THAT COVER THE AREAS INDICATED.
3. PROVIDE BERMS OF ADEQUATE HEIGHT AND LENGTH TO PROTECT PERSONNEL IN ADJACENT ACTIVITIES.
4. ONLY TRAINING ROUNDS WILL BE USED ON THE GRENADIER GUNNERY STATION.
5. REFER TO THE INDIVIDUAL STATION DRAWINGS FOR ADDITIONAL DETAILS

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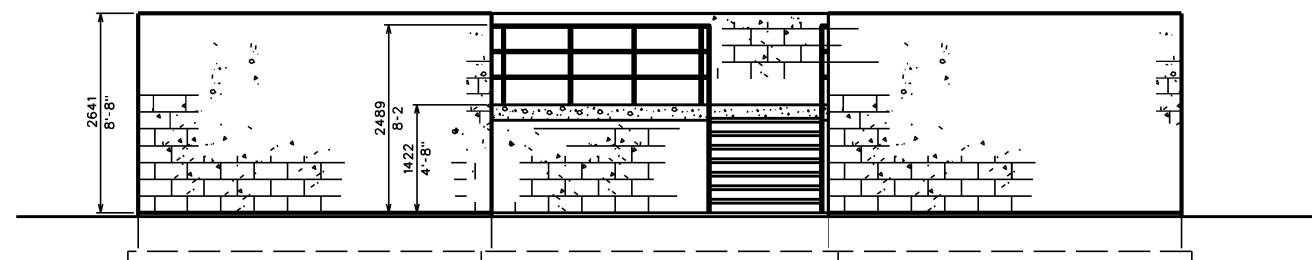
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**RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
URBAN ASSAULT COURSE
STATION 1
INDIVIDUAL AND TEAM TECHNIQUES**

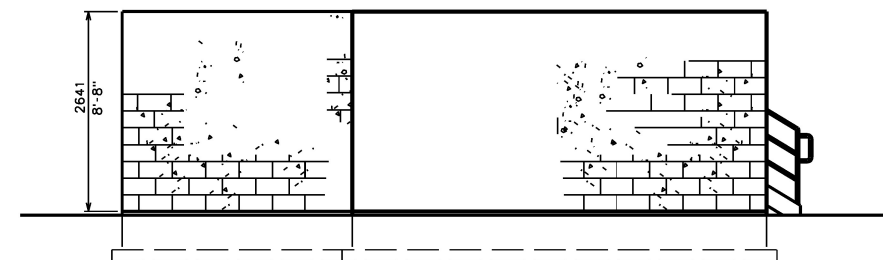
**Sheet
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UAC-01**



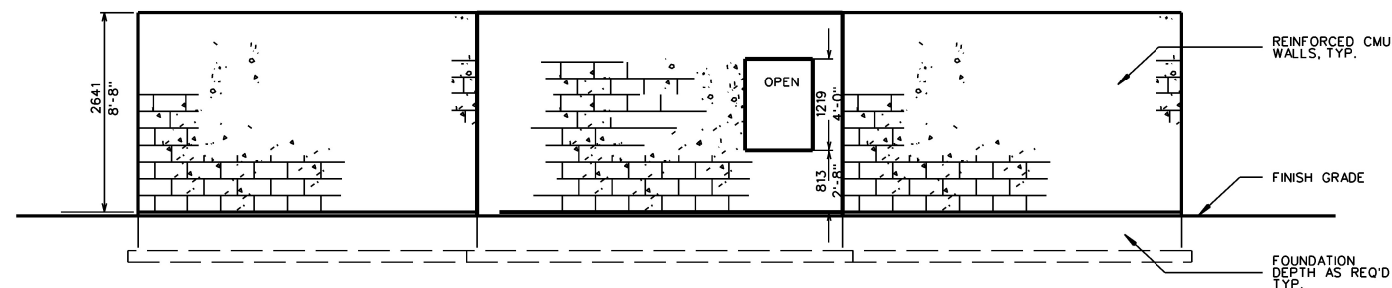
INDIVIDUAL AND TEAM TRAINER - STATION 1 - ELEVATION SCALE : 1/4" = 1'-0"



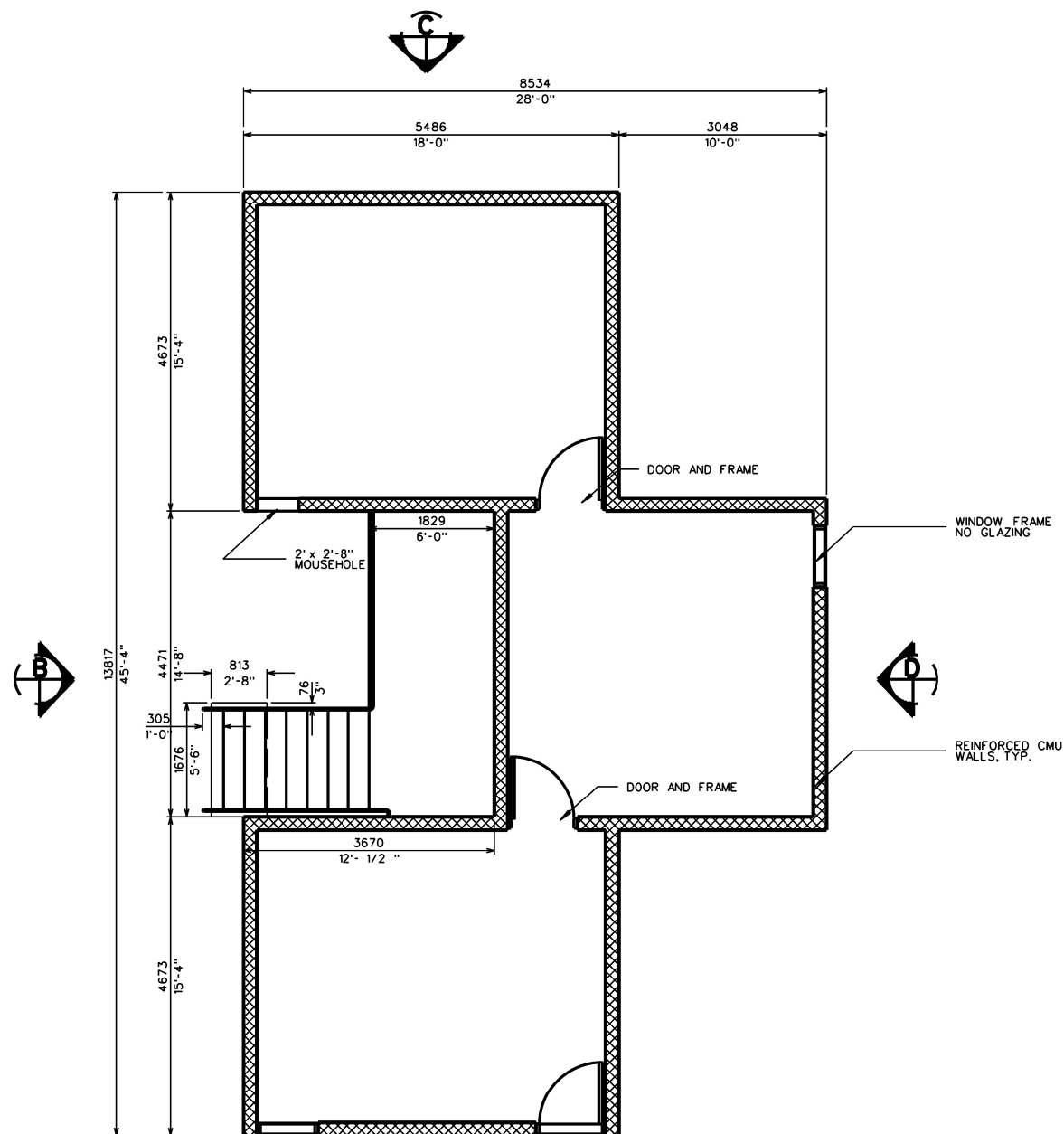
B **INDIVIDUAL AND TEAM TRAINER - STATION 1 - ELEVATION** SCALE : 1/4" = 1'-0"



INDIVIDUAL AND TEAM TRAINER - STATION 1 - ELEVATION



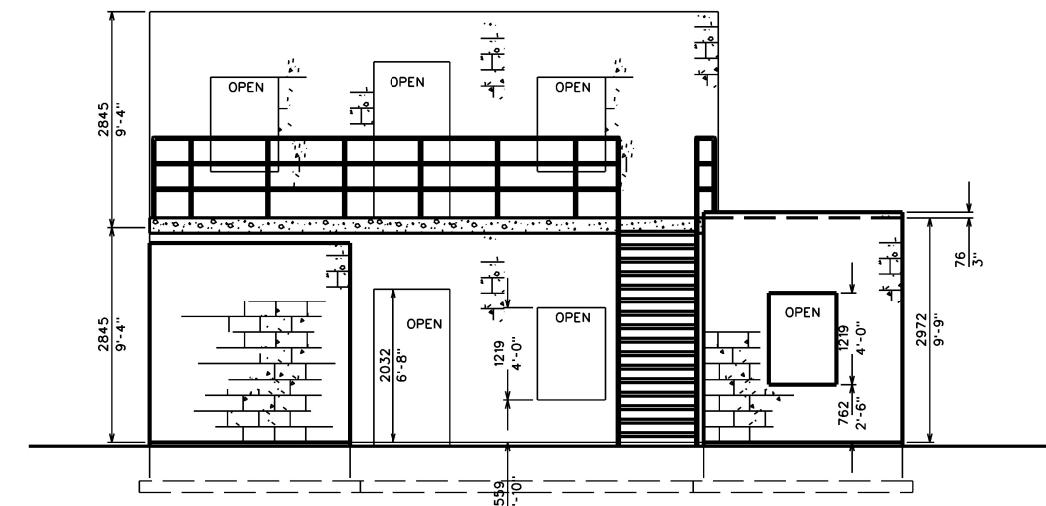
INDIVIDUAL AND TEAM TRAINER - STATION 1 - ELEVATION



INDIVIDUAL AND TEAM TRAINER - STATION 1

NOTES:
WALLS AND FOUNDATIONS SHALL BE DESIGNED TO
LOCAL CONDITIONS (STRUCTURAL AND GEOTECH)
PROVIDE GRAVEL FLOORS; ENSURE PROPER DRAINAGE

DIRECTION OF ATTACK
DOWNRANGE



26'4" 8'-8"

OPEN

OPEN

OPEN

OPEN

12'9" 4'-0"

6'10" 2'-0"

20'32" 6'-8"

8'13" 2'-8"

REINFORCED CMU WALLS, TYP.

FINISH GRADE

FOUNDATION DEPTH AS REQ'D TYP.

INDIVIDUAL AND TEAM TRAINER - STATION 2 - ELEVATION

SCALE : 1/4" = 1'-0"

Dimensions (from left to right):

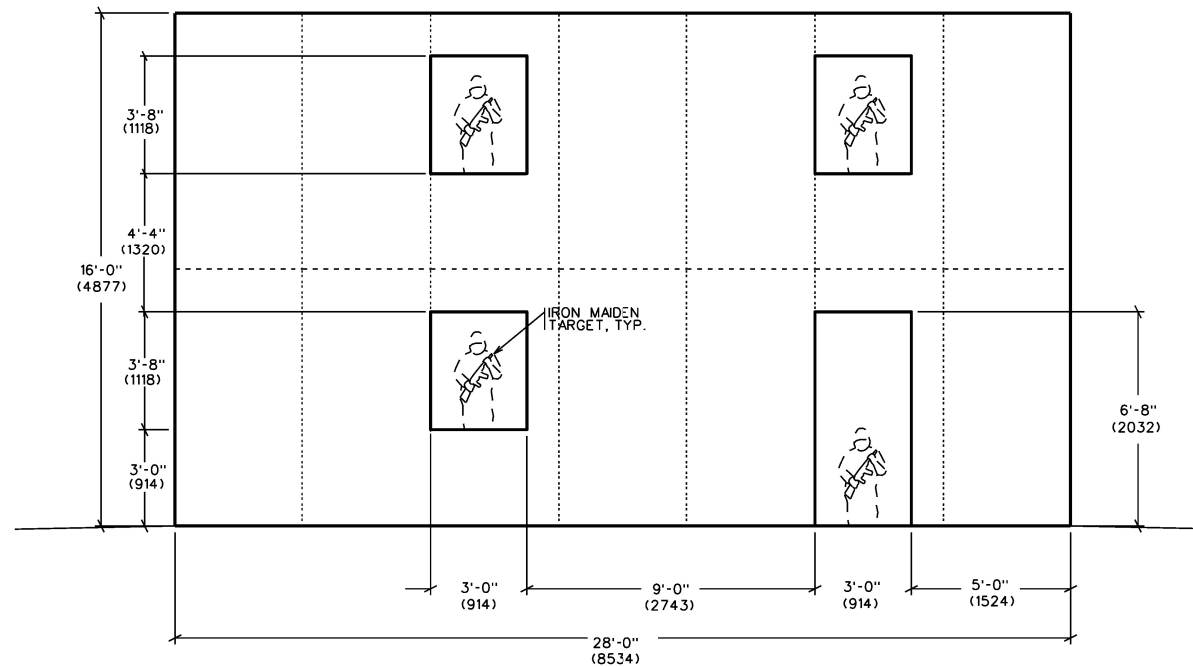
- Overall height: 5690 (18'-8")
- Staircase height: 4038 (13'-3")
- Staircase width: 2972 (9'-9")
- Staircase depth: 1067 (3'-6")
- Opening 1 height: 1219 (4'-0")
- Opening 1 width: 762 (2'-6")
- Opening 2 height: 2032 (6'-8")
- Opening 2 width: 1219 (4'-0")
- Opening 3 height: 1219 (4'-0")
- Opening 3 width: 1219 (4'-0")
- Overall width: 3048 (10'-0")

The site plan shows a rectangular lot with a north arrow pointing towards the top right. The lot dimensions are 140'-0" wide and 32'-0" deep. The buildings are arranged as follows:

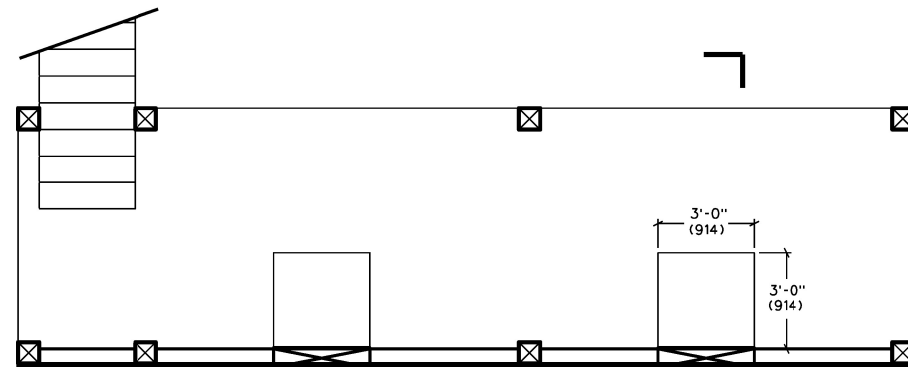
- Building A (2 stories):** Located on the left side of the lot, measuring 24'-0" wide and 32'-0" deep. It has a 4'-0" wide setback from the left boundary.
- Building B (1 story):** Located on the top side of the lot, measuring 56'-0" wide and 8'-0" deep. It has an 8'-0" wide setback from the top boundary and is adjacent to Building A.
- Building C (1 story):** Two rectangular buildings, each measuring 40'-0" wide and 8'-0" deep. They are located on the right side of the lot, separated by a 4'-0" wide setback from the right boundary and a 4'-0" wide setback from the bottom boundary.

Dimensions and setbacks are indicated by dashed lines and arrows. The total lot area is 4,480 square feet.

NOTES:
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LOCAL CONDITIONS (STRUCTURAL AND GEOTECH)
PROVIDE GRAVEL FLOORS; ENSURE PROPER DRAINAGE

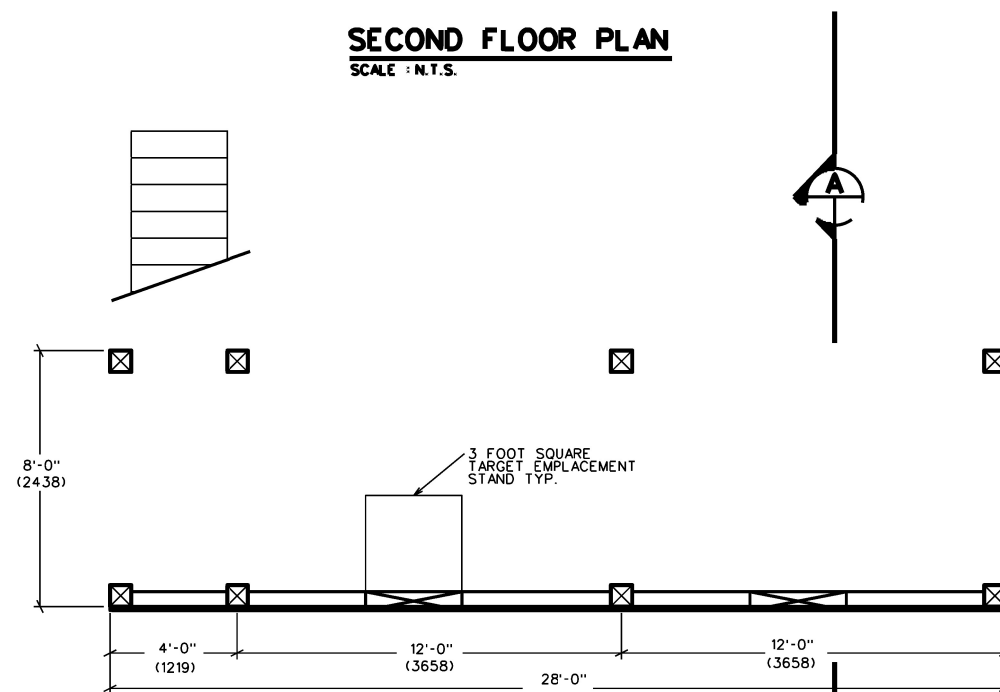


FRONT ELEVATION
SCALE : N.T.S.

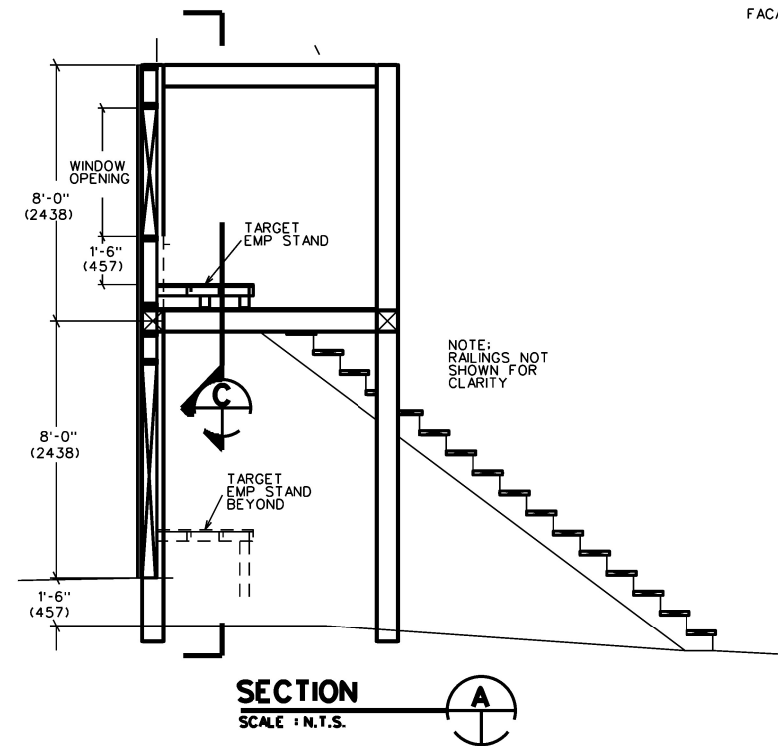


SECOND FLOOR PLAN

SCALE : N.T.S.



FIRST FLOOR PLAN
SCALE : N.T.S.

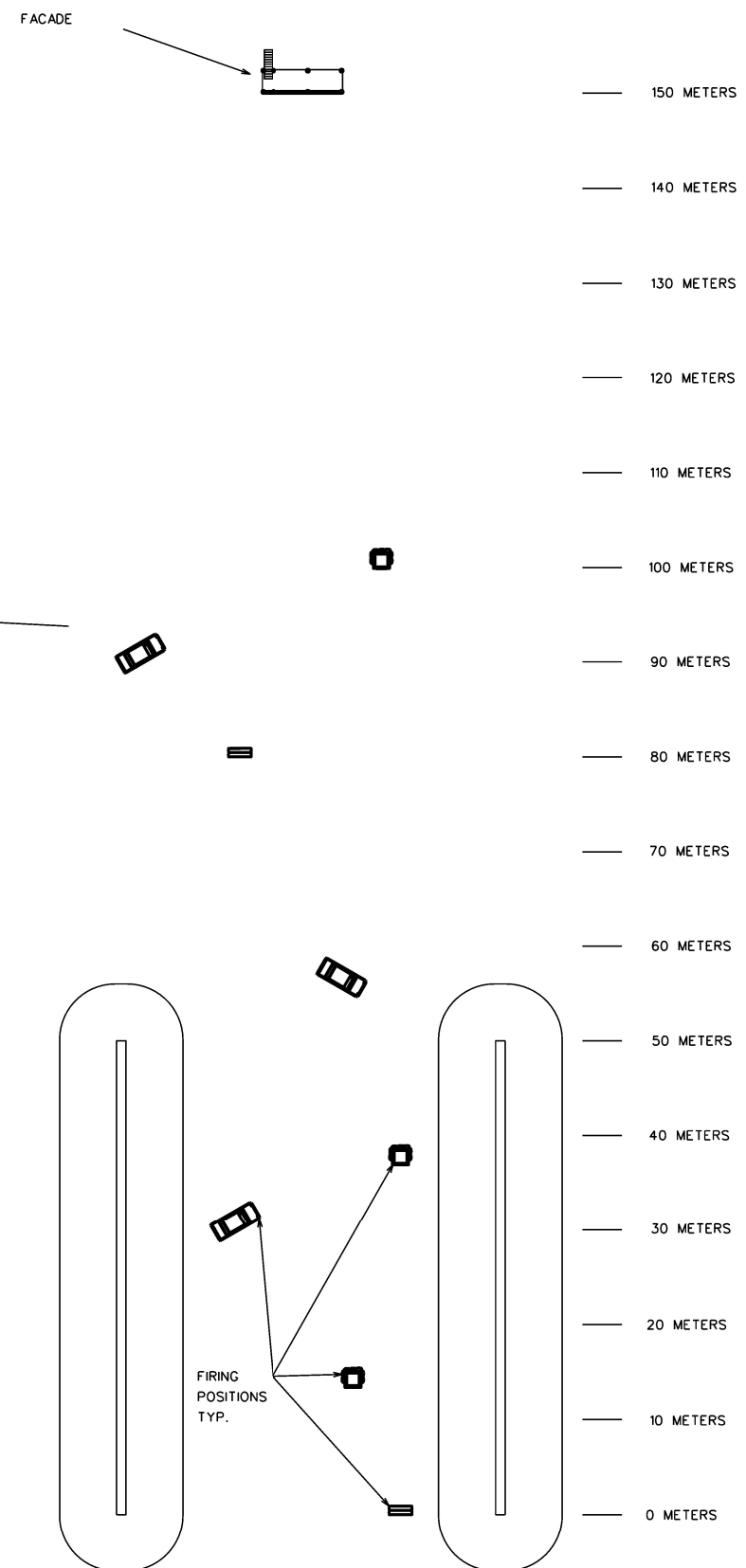


SECTION 
SCALE : N.T.S.

NOTE:
PROVIDE 6mm to 12mm THICK, UV LIGHT AND OZONE RESISTANT,
RUBBER MATTING ("LINATEX OZ", "RUMBER", OR SIMILAR) OR SOME OTHER
SYSTEM ON THE FACE OF FRONT FACADE TO PREVENT SHATTERING OF THE
WOOD FROM THE IMPACT OF THE GRENADES. THIS IS IN ADDITION TO A
MINIMUM 19mm (3/4") TREATED PLYWOOD SIDING.


SEE UAC-A-01 FOR ADDITIONAL INFORMATION

FRAMING MEMBER SIZES ARE FOR REFERENCE ONLY
WALLS AND FOUNDATIONS MUST BE DESIGNED TO
LOCAL CONDITIONS (STRUCTURAL AND GEOTECH)



GRENADIER GUNNERY PLAN

SCALE : N.T.S.



**US Army Corps
of Engineers**

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Designed by:						

**UAC STATION 3
GRENADE GUNNERY**

Sheet
reference
number:
UAC-03



**Sheet
reference
number:
UAC-05**

