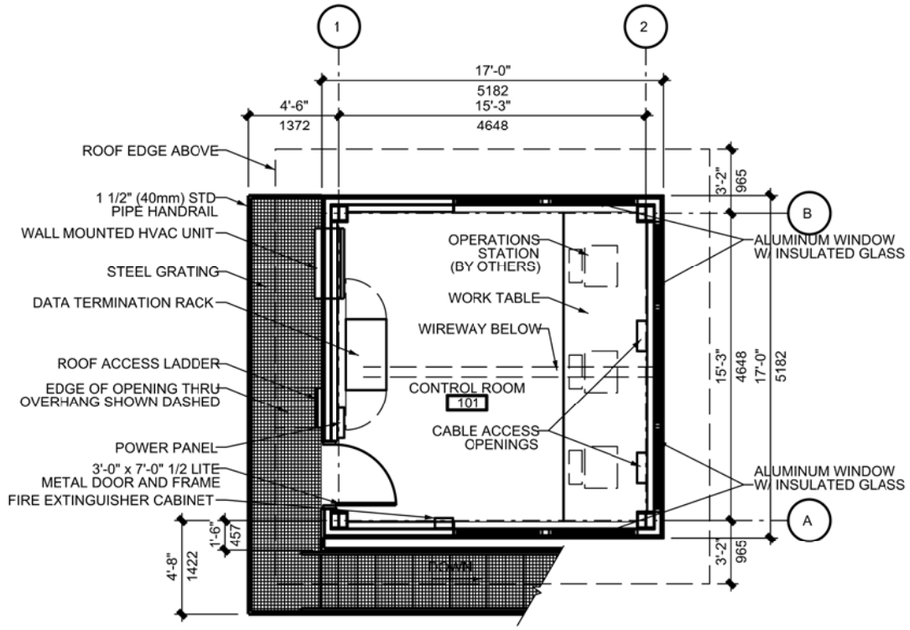
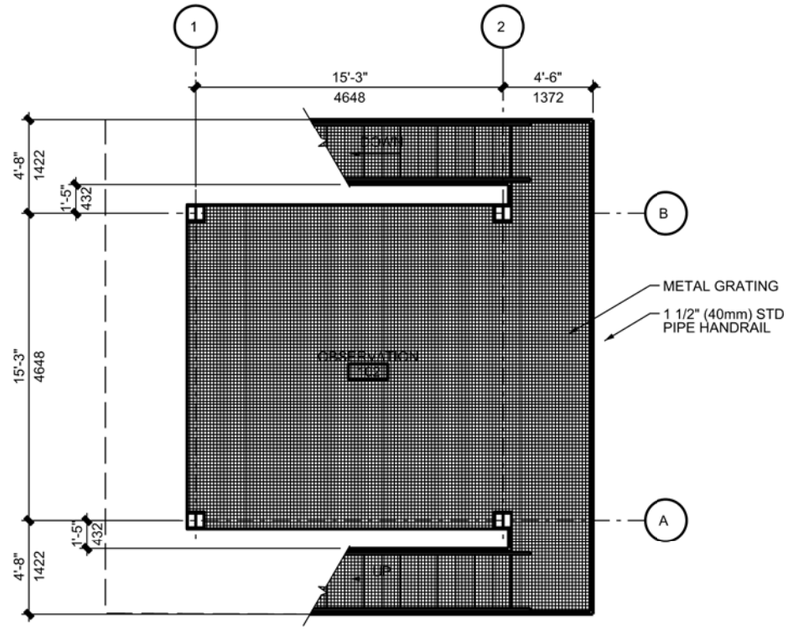


CONTROL ROOM PLAN

A / A-01

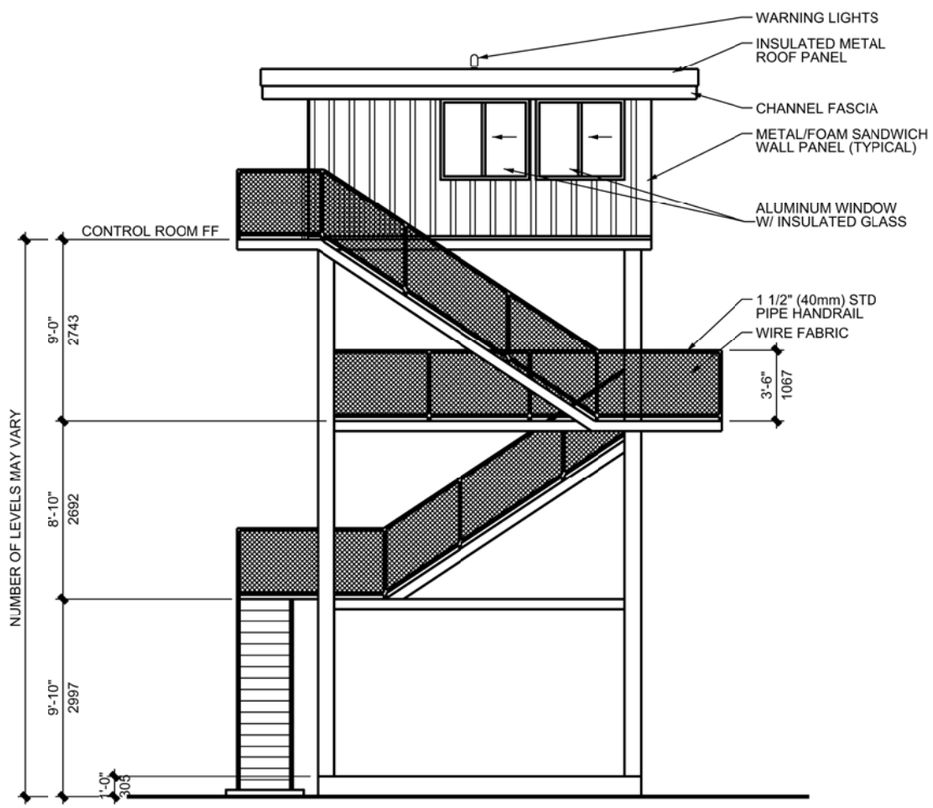
SCALE: 1/4" = 1'-0"



OBSERVATION DECK

A / A-01

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



ELEVATION

A / A-01

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

General:

The Control Tower - Small Arms provides space for personnel conducting training exercises and space for the installation of the required electronics and communications equipment. The facility is normally programmed with a unit of measure of each (EA), however the size should not exceed what is shown on this drawing. Area Calculation; Enclosed Area 17' x 17' = 289sf, Balcony 4' x 21' x '= 42sf, Observation Level 17' x 17' x '= 194sf Stairs and Landings per floor 3.5' x 25' x '= 44sf, Total for three level tower is 657sf (61.0sm). The Observation Level is optional. The facility shall be classified as a Special-Purpose Industrial use. The height of the tower is based on providing line of sight to the firing line and down range areas where required. All dimensions not labeled are in mm. A 16' square 2-story CMU tower with enclosed observation level is an optional standard.

Site Adaptation:

This standard definite design should be adapted to local conditions such as climate, available construction materials and techniques, topography, seismic zone and the existing character of surrounding buildings. These factors may affect plans, elevations, and building systems. The building foundation must be designed based on the results of a geotechnical investigation.

Reference Criteria:

The design and construction must comply with applicable codes and standards.

Functional Requirements:

A work surface is provided for monitors, computers, printers, and associated equipment. Windows are fixed and horizontal sliding to meet functional requirements. Provide polycarbonate security glazing in the door. Ice guards may be necessary in northern climates. The tower is accessed only by able-bodied personnel and does not require ADA compliance unless dictated by local criteria.

Mechanical:

The Mechanical Equipment shall be selected and sized based on site requirements, local weather design criteria, available energy sources, and building construction materials. The mechanical system must be sized to maintain the Data Termination Rack at an operating temperature of 72 F +/- 2 F. Obtain communication equipment heat release from targetry supplier for HVAC load calculations and equipment sizing. HVAC design for personnel comfort shall be in accordance with UFC 3-410-FA. Provide a drain to prevent condensate dripping on observation level and stairs below.

Electrical:

The Tower shall be served by 120/240V 1 phase, 3-wire secondary power. Provide Surge Protective Device (SPD) for incoming service. Rigid Steel conduit extends a minimum of 5' (1524mm) outside of the building foundation for power and communication circuits entering and leaving the building. Voltage drop shall comply with standards in NEC and Army technical manuals. Grounding will be installed in accordance with NFPA 70, the NEC, and other applicable standards.
Receptacles shall be general purpose. 120V, 20A duplex mounted 18' (450mm) above the finished floor. Provide 120/240V power for the HVAC unit. Provide a quad outlet mounted on the floor inside the Data Termination Rack fed by two dedicated 120V, 20A circuits.
Illumination levels will be designed in accordance with IES. Incandescent fixtures with red lamps on separate switching shall be placed near each fluorescent lamp in the Control Room and on exterior walls of entrance. Exterior lighting shall be provided with separate switching located near points of egress.
The emergency electrical system shall comply with NFPA 70 and NFPA 101. Emergency lighting shall be provided to ensure adequate illumination to egress building in the event of a power outage.
Lightning protection in accordance with NFPA 780 is required for this building in the form of pole most protection or air terminals on the building.

Telephone:

Telephone service should be provided to the Control Tower if it is available.

Targetry System Interface:

In addition to the targetry fiber, the targetry system requires a fiber optic connection between the ROC and the AAR if one is included. The number of the Data Termination Racks (DTR) depends on the number of fiber terminations from other ROCA buildings, targetry, and camera. Only one type of cable media is allowed to be run into the DTR for range training systems. A fiber connection to an AAR may dictate that fiber optic cables must be used from the ROC- Tower to the first target. Provide a 4"X 4"wireway under the floor with sub ups into the data termination rack and at the front of the Control Room under the Work Table.

Fire Protection:

Fire protection is not required per fire codes for this building. The fire alarm shall be a local audible alarm. Fire extinguisher cabinets are required per NFPA. Consult local Fire Marshall for compliance with local requirements.

4' 2' 0 4' 8' 12'

GRAPHIC SCALE: ¼"=1'-0"

US Army Corps of Engineers

Rev.	Description	Date	Approved

Designed by: | Date: | Rev.
Dwn by: | Ckd by: | Design file no.
Reviewed by: | Drawing code:
Submitted by: | File name / Plot scale / Pen table

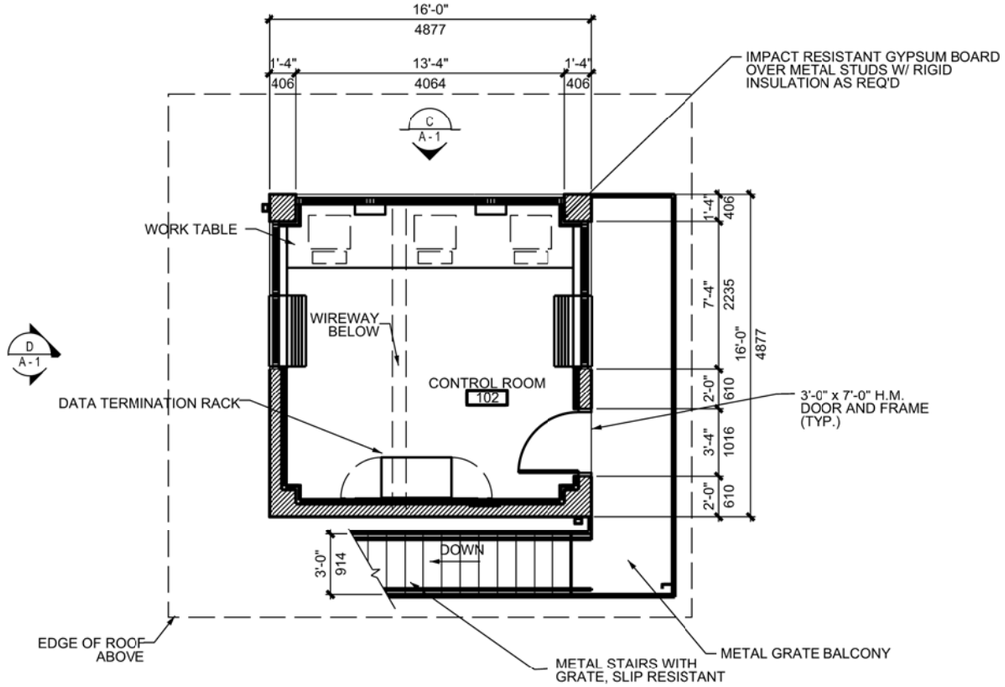
U. S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
HUNTSVILLE, ALABAMA

SEPTEMBER 2010

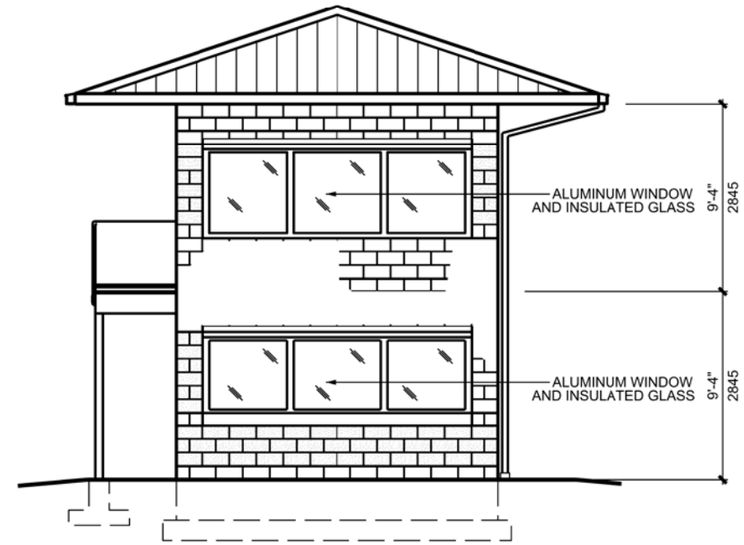
RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL

CONTROL TOWER
SMALL ARMS

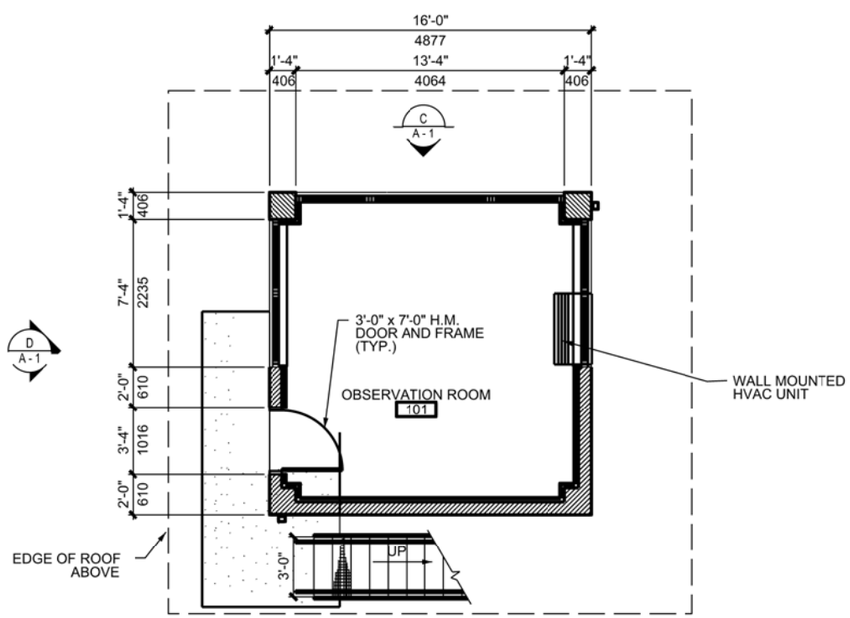
Sheet reference number:
A–01



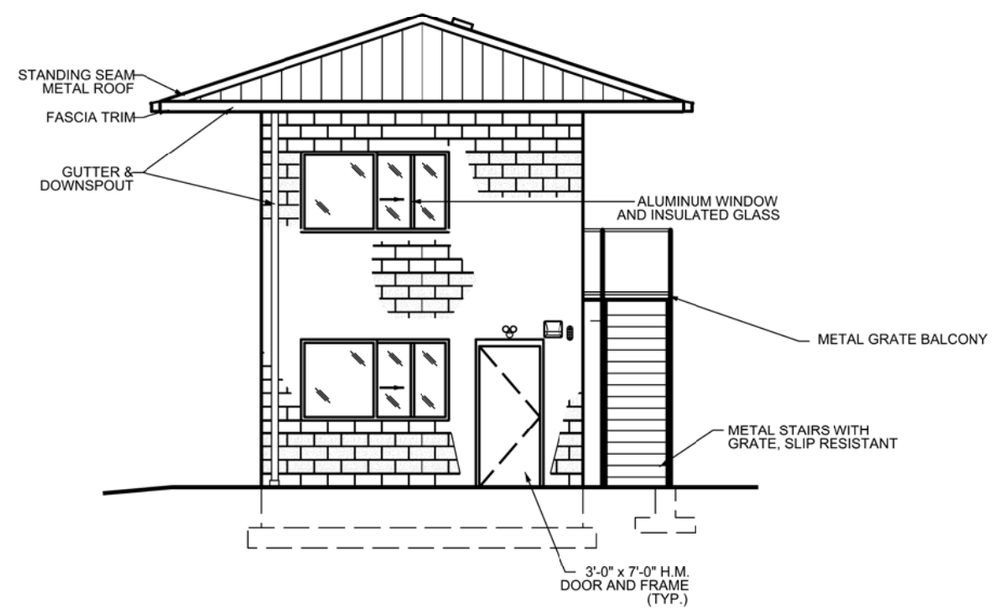
A
A-1
SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"



C
A-1
ELEVATION
SCALE: 1/4" = 1'-0"



B
A-1
FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"



D
A-1
ELEVATION
SCALE: 1/4" = 1'-0"

SEE SMALL ARMS CONTROL TOWER FOR NOTES AND DETAILS NOT SHOWN

4' 2' 0 4' 8' 12'
GRAPHIC SCALE: ¼"=1'-0"

US Army Corps of Engineers

Rev.	Description	Date	Approved
Rev. *			

Designed by: Dwn by: Ckd by: Reviewed by: Submitted by: Date: Rev. Design file no. Drawing code: File name: Plot date: Plot scale:

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

FEBRUARY 2011

RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
CONTROL TOWER
SMALL ARMS
CMU OPTION

Sheet reference number:
A–01A

Sheet of