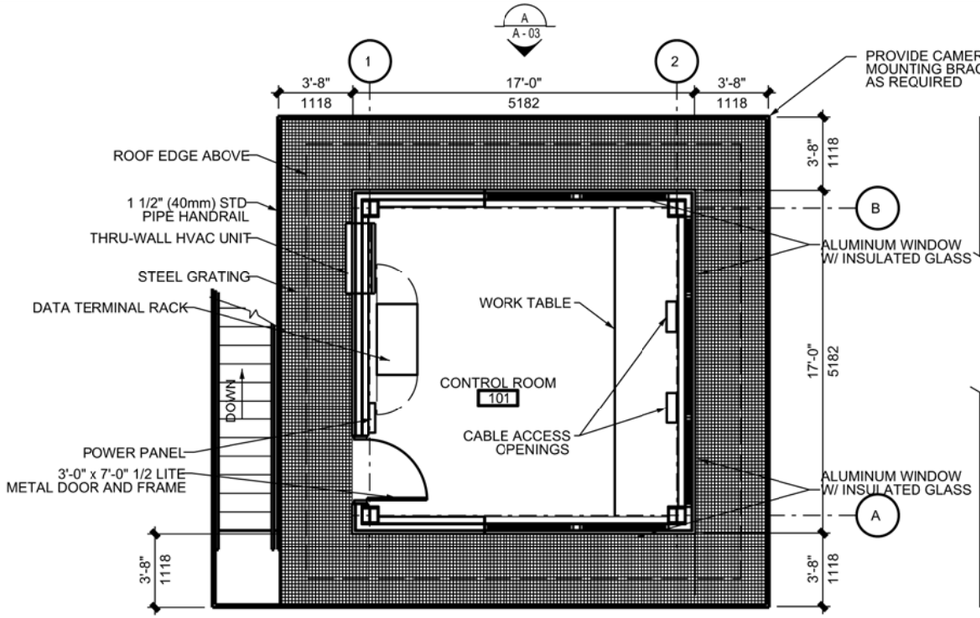
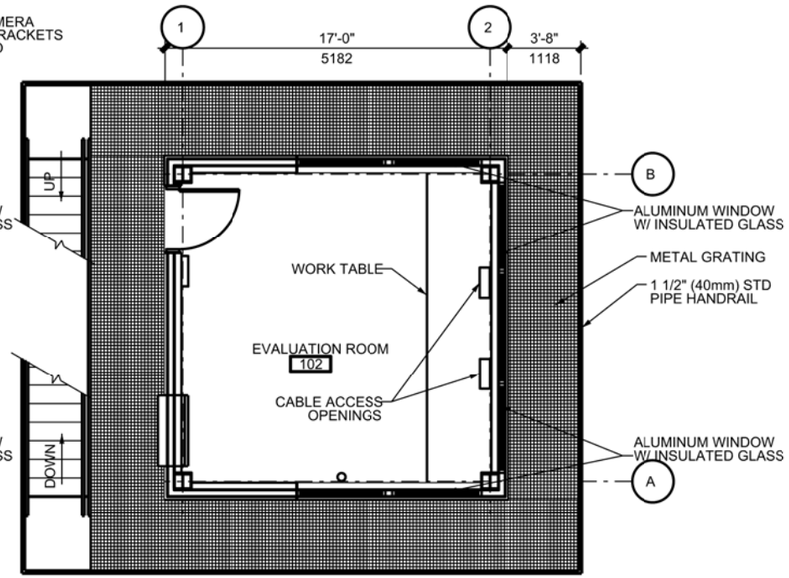


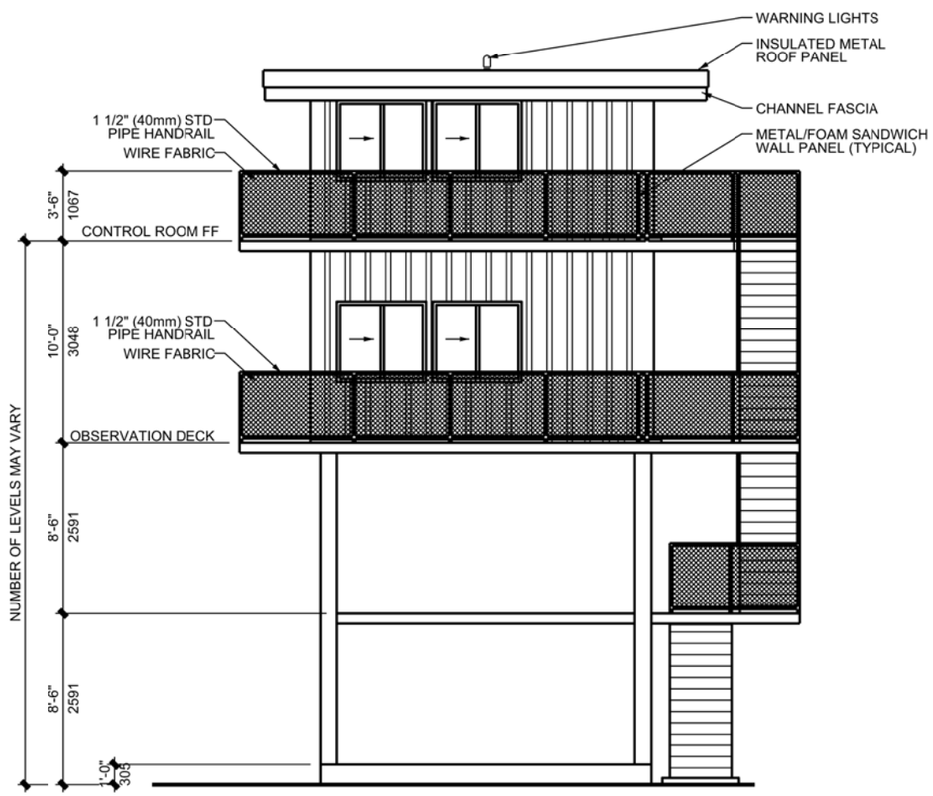
CONTROL ROOM PLAN

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



OBSERVATION DECK

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



A A-03 ELEVATION

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

General:
The Control Tower Non-Instrumented Ranges provides space for personnel conducting training exercises and space for the installation of the required electronics and communications equipment. This tower is standard on the non-digital mounted maneuver ranges; Scout/RECCE, MPTR, MPRC, and AGR. The control room has an enclosed area of 289 square feet (26.8 square meters), with an enclosed Evaluation Room of the same size is below. A metal grate walkway surrounds both levels. The facility is classified as Special-Purpose Industrial use. The tower location and height are based on providing line of sight to the baseline area and as much of the down range areas as practical. All feet and inches dimensions are labeled; dimensions not labeled are millimeters.

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:
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 normally require ADA compliance.

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. 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.
Provide 4 X 4"enclosed wireways approximately 20"above the finished floor completely around both the Control and Evaluation rooms. The wireways shall be connected to each other and to the DTR with 4 X 4"enclosed wireways. These wireways shall be left empty for use by the OPA funded target installer and may not be used for common user communication (telephone/data) or power cabling.
Provide two 4"conduits with pull wires from the control room near the DTR to the antenna tower.
Provide four receptacles on each floor for the targetry system provided workstations. Each receptacle must be on a dedicated 20amp circuit.

Telephone/Base Communication:
Telephone service is not a requirement for range operations. However, service should be provided to the tower if it available in the area.

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.

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

US Army Corps of Engineers

Rev.	Description	Date	Approved
Rev. -			

Designed by: | Date: | Rev.
Cost by: | Cost by: | Design file no.
Reviewed by: | Drawing code:
Submitted by: | File name: Plot scale: Plot size:

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

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RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL

CONTROL TOWER
NON-ISTRUMENTED RANGES

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