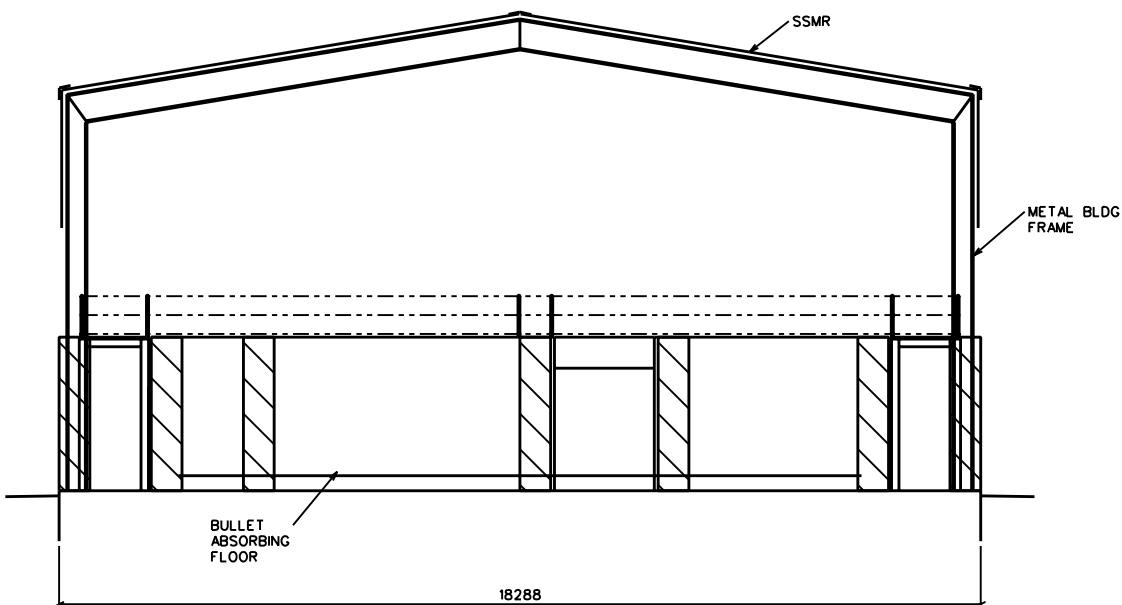
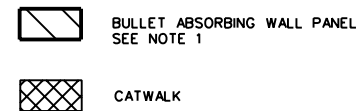


SHOOT HOUSE - FLOOR PLAN



BUILDING SECTION



NOTES

1. The standard shoothouse includes a minimum net training space of approximately 158 square meters (1700sf). The actual size of the facility depends on the thickness of the bullet absorbing material chosen. The standard depicts 610mm (24") thick walls. The gross area of the shoothouse should be kept to a maximum of 232 square meters (2500sf).
2. The shoothouse cover should be kept to a maximum of 418 square meters (4500sf).
3. Bullet absorbing wall may be SACON, sand filled wall section or other commercial product designed to stop and contain rounds and ricochets.
4. Separate bullet traps should be used behind targets to reduce the number of rounds impacting the walls.
5. Bullet absorbing wall system must be designed to be replaceable or repairable.
6. The shoot house is not designed for live fragmentation/concussion grenades.
7. The shoot house must be designed to accommodate the types of mechanical and explosive breaching techniques that will be used.
8. The SDZ of the facility is based on the locations of the firing points and targets, the weapon systems used and the ricochet characteristics of the bullet absorbing walls, a deviation is normally required.
9. The shoothouse must provide a means of stopping and containing rounds exiting through the exterior doors and blow holes in the shoothouse. This may be done using additional bullet absorbing wall material, earth berms, or other method.
10. The layout of the rooms may be changed from the standard in order to support a units particular training tasks.
11. The electrical room and catwalk should be designed so they are not supported by the shoothouse walls to allow panel replacement.
12. The catwalk may be extended over other areas of the shoothouse if needed.
13. The electrical room is 2.032m (6'-8") wide and 0.8128m (2'-8") deep with a 1.8288m (6'-0") wide doors on the front to provide required access to data enclosure and panelboard.

MECHANICAL

Ventilation cooling shall be provided for the electrical room. Provide exhaust fan with interlock to motorized louver/damper. Thermostat setpoint for activation of exhaust fan shall be 100 degrees F. Exhaust fan control sequence and thermostat setpoint of 100 degrees F shall be shown on design drawings. Locate fan and louver to optimize cross ventilation in the room.

FIRE PROTECTION

Fire Protection is NOT required per fire codes for this building. Consult local Fire Marshall for compliance with local laws.



Rev.	Date	Description

Designed by:	Date:	Rev.

Drawn by:	Design file no.

Reviewed by:	Drawing code:

Submitted by:	File name:	Plot date:	Plot scale:

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

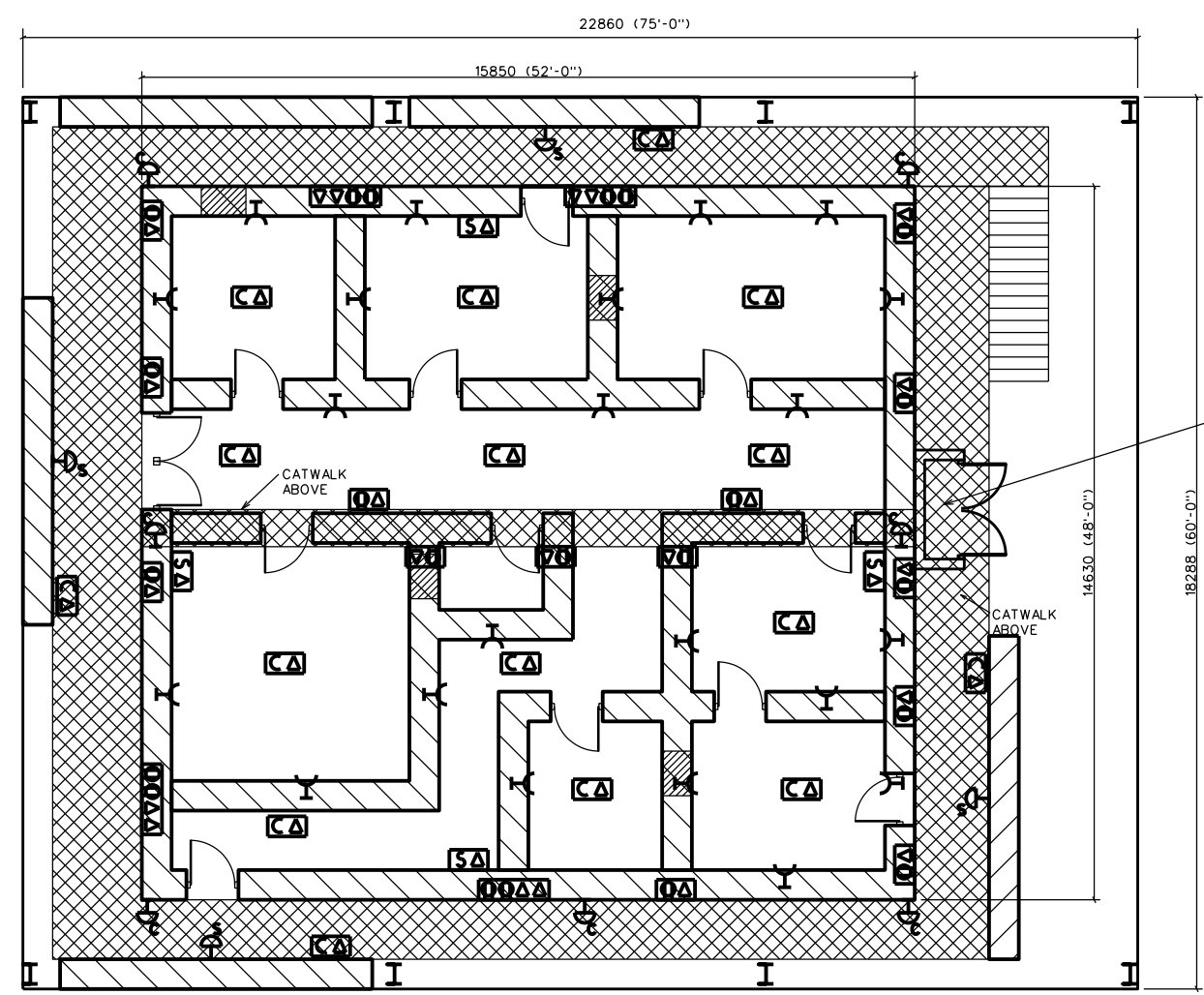
15 MAY 2007

RANGE AND TRAINING LAND PROGRAM STANDARD DESIGN MANUAL

SHOOT HOUSE FLOOR PLAN

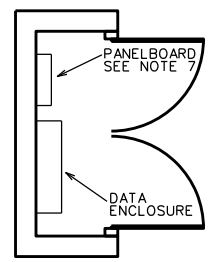
Sheet reference number:

SHH-A-1

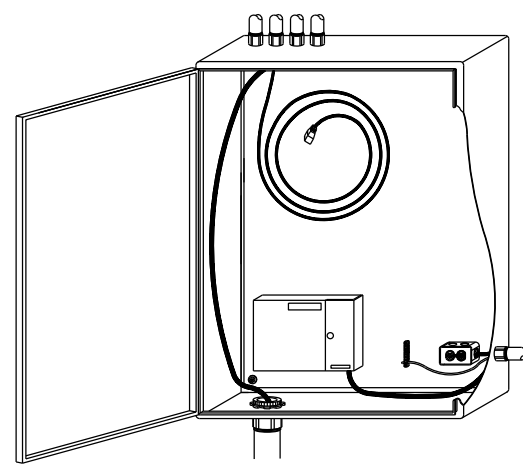


SHOOT HOUSE - TARGET OUTLET PLAN

- BULLET ABSORBING WALL PANEL
- CATWALK
- SINGLE TARGET OUTLET
- DOUBLE TARGET OUTLET
- CAMERA OUTLET
- SPEAKER OUTLET
- TARGET CABLE SUPPORT
- PANIC BUTTON BOX:
C = BOX INSTALLED 48" ABOVE CATWALK,
S = BOX INSTALLED 48" AFF IN SHOOTHOUSE

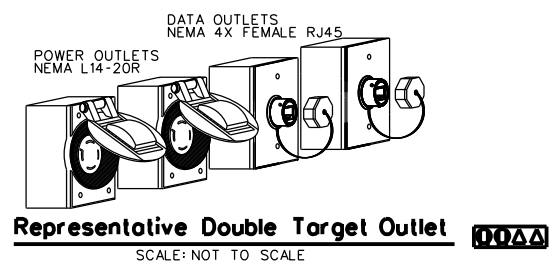
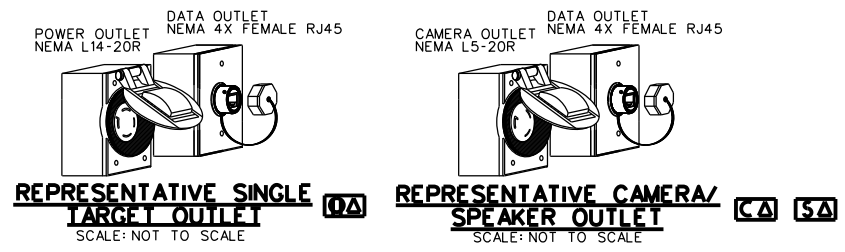


ELECTRICAL ROOM PLAN



DATA ENCLOSURE

- SHOOT HOUSE NOTES:
- ROUTE WIRE FOR POWER AND DATA TO UNIVERSAL TARGET OUTLETS UNDER THE CATWALK.
 - MOUNT THE CAMERA AND SPEAKER OUTLETS TO THE ROOF STRUCTURE AND MOUNT FOUR CAMERA OUTLETS UNDER THE CATWALK.
 - INSTALLATION OF TARGETS, CAMERAS, AND SPEAKERS BY OTHERS.
 - THE ELECTRICAL ROOM SHALL BE SEALED TO PREVENT WATER FROM ENTERING THE ROOM, AND SHALL BE CONSTRUCTED TO MINIMIZE DUST FROM ENTERING THE ROOM.
 - SAND FLOORS ARE NOT ALLOWED IN ELECTRICAL ROOM.
 - FIBER OPTIC CABLE ROUTED FROM THE AFTER ACTION REVIEW FACILITY SHALL BE TERMINATED IN THE DATA ENCLOSURE LOCATED IN THE ELECTRICAL ROOM.
 - LIGHTING PLAN NOT SHOWN ON THIS LAYOUT. TYPE OF LIGHTING FIXTURES USED SHALL BE DETERMINED BASED ON LOCAL ENVIRONMENTAL CONDITIONS AT THE SITE THE SHOOTHOUSE IS CONSTRUCTED. LIGHTS SHALL BE INSTALLED SUCH THAT THEY DO NOT INTERFERE WITH THE CAMERA SYSTEM THAT WILL BE MOUNTED TO THE ROOF STRUCTURE BY OTHERS. CONSIDERATION SHOULD BE GIVEN TO THE MOUNTING OF THE FIXTURES TO ALLOW FOR WINDY CONDITIONS THAT MAY BE PRESENT AT SOME LOCATIONS.
 - INSTALL LIGHTING CONTACTOR IN AN ENCLOSURE IN THE ELECTRICAL ROOM. THE INSTALLATION SHALL BE DONE IN ACCORDANCE WITH THE NEC. PROVIDE WITH A HAND-OFF-AUTO SWITCH TO ALLOW FOR BOTH LOCAL AND REMOTE CONTROL OF CONTACTOR.
 - LIGHTNING PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 780.



- DATA ENCLOSURE NOTES:
- DATA ENCLOSURE SHALL BE NEMA 4 RATED AND MAINTAIN NEMA RATING AFTER INSTALLATION.
 - DATA ENCLOSURE SHALL BE 4' HIGH X 3' WIDE X 10" DEEP.
 - FIBER OPTIC PATCH PANEL, MAXIMUM SIZE 9.5" HIGH X 13.5" WIDE.
 - 120V, 20A DUPLEX RECEPTACLE.
 - 2 METER SERVICE LOOP SHALL BE PROVIDED FOR ALL CABLES TERMINATING IN ENCLOSURE.
 - ROUTE SERVICE LOOP AROUND INSIDE PERIMETER OF ENCLOSURE.
 - ALL CABLES SHALL BE PERMANENTLY LABELED STATING CABLE DESTINATION.
 - METALLIC BACKPLATE SHALL BE INSTALLED THAT COMPLETELY COVER REAR OF ENCLOSURE. ALL COMPONENTS SHALL BE MOUNTED TO THIS BACKPLATE.
 - GROUND BACKPLATE WITH #6 AWG CU CONDUCTOR.
 - FIBER OPTIC TERMINATIONS SHALL BE MADE WITH SC CONNECTORS.
 - ENCLOSURE SHALL BE PROVIDED WITH A HINGED AND LOCKABLE DOOR.
 - REMAINING SPACE IN DATA ENCLOSURE SHALL BE USED FOR EQUIPMENT TO BE INSTALLED BY OTHERS.
 - 12 STRAND FIBER OPTIC CABLE INSTALLED BETWEEN DATA ENCLOSURE AND WALL MOUNTED FIBER PATCH PANEL IN AAR.
 - INSTALL CAT6 UTP CABLES FROM TARGET, SPEAKER, AND CAMERA OUTLETS INTO THE DATA ENCLOSURE. COIL 3FT AND TERMINATE WITH MALE RJ-45 CONNECTOR.

Rev.	Description	Date	Approved

Rev.	Date	Design	Drawn	Checked	Submitted

DESIGNED BY: []
 DRAWN BY: []
 CHECKED BY: []
 SUBMITTED BY: []

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

JANUARY 2015

RANGE AND TRAINING LAND PROGRAM
 STANDARD DESIGN MANUAL
 FCC-17879
 LIVE FIRE EXERCISE SHOOTHOUSE

Sheet reference number:
SHH-E-1