Part C

25-Meter Zero Firing Range

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CHAPTER 2

FUNCTIONAL AND AREA REQUIREMENTS

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FUNCTIONAL AND AREA REQUIREMENTS

2-1 GENERAL REQUIREMENTS

2-1.1 **Net area definition**. Net area is measured to the inside face of the room or space walls.

2-1.2 **Net Area Requirements**. Net area requirements for programmed spaces are included in this chapter. If net area requirements are not specified in the Statement of Work, the space shall be sized to: accommodate the required function, comply with code requirements, comply with overall gross area limitations and other requirements of the RFP (for example, area requirements for field latrines will be in accordance with the standard design manual.

2-1.3 **Functionality**. Rooms shall be sized and arranged for efficient use and circulation.

2-1.4 **Finish Requirements**. Room finishes stated in the following paragraphs are preferred minimums; finish selections are not limited to those listed.

Floors: Concrete with sealer.
Walls: Manufacturers standard liner panel.
Ceilings: Simple Saver System or approved equal.

2-1.5 **Furniture Requirements**. N/A.

2-2 OBSERVATION TOWER FUNCTIONAL AND AREA REQUIREMENTS.

The design of the Observation Tower design shall be in accordance with the enclosed concept drawing.

IMPROVEMENTS: The building shall be a one-story structure sitting atop a steel frame. The finished floor of the structure shall be a minimum of 8’-0” (2438mm) above the finished grade. The actual height of the Observation Tower shall be in accordance with the results of the Sight Line Analysis Study. The intermediate observation deck is deleted. The outside to outside dimensions are to be 3658mm by 3658mm. The building structure shall be painted steel, but unpainted galvanized steel should be considered for the exposed structure as long as it can be supplied within the budget. This would also include all exposed accessories such as but not limited to nuts, bolts, anchor bolts, washers, etc. The concrete floor slab shall be insulated with a minimum of R-30 rigid insulation applied to the exposed underside of the slab. Total net building area of Observation Tower shall be a minimum of 12.47 square meters.

2-3 AMMO BREAKDOWN BUILDING FUNCTIONAL AND AREA REQUIREMENTS.

The design of the Ammo Breakdown building design shall be in accordance with the enclosed concept drawing.

IMPROVEMENTS: Provide lightning protection for the Ammo Breakdown Building. The Ammo Breakdown building shall consist of one building with a

canopy. Provide a plywood counter 300 mm deep and 1050 mm from the finished floor to the counter top surface on three sides of the ammo issue room. The Building shall be designed in accordance with the enclosed concept drawing. Total net building area of Ammo Breakdown building shall be 8.91 square meters.

2-4 COVERED TRAINING AREA (BLEACHERS) FUNCTIONAL AND AREA REQUIREMENTS. (OPTIONAL) (SEE GENERAL DESIGN REQUIREMENTS)

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3. **Scope of work.** The following contains the civil design requirements for the 25 M Firing Zero Range. The designer will be required to prepare all specifications related to civil and sitework. Included are the minimum requirements for construction.

Range consists of 25 lanes with a lane width of 4 meters. Each firing lane has a foxhole firing position, machine target boots at a distance of 10 meters from the firing line and an E-type target at a distance of 25 meters from the firing line.

3.1. Site Development plan. Contract Drawing sheets C3.1 and C3.3 show the general layouts for the ranges.

3.2. Particular foxhole requirements shall be as shown on Contract drawing sheet C6.1. Foxholes should have plywood cover similar to detail on RETS standard design C-12. Foxholes shall be provided with subdrain system to drain water from foxholes. Foxholes shall be below grade as much as possible with 2% minimum grade away from foxhole itself in all directions. French drains are not acceptable for drainage of foxpits.

3.3. The number of the firing lane should be painted inside the front corner of the foxhole. In other words, as you look down the firing line from foxhole, you should be able to see both the number of the far marker at end of firing lane and the same number in the foxhole but along the same line of sight.

3.4. Target boots and E-type zero target base shall be similar to those on Ft. Riley ranges, trainfire 4 and 5.

3.5. Range lane markers are required between each lane as shown on drawings. Range limit markers are also required on each side (one each side) of the range approximately 21 meters from the firing position. Details for range lane markers and limit markers are on Contract Drawing Sheets C6.1.

3.6. Lane marker stumps are required as shown on the drawings. Stumps are essentially a 100 x 50 mm lumber with a plate with lane number on it. The number should be approximately 500 mm above grade.

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SURVEY REQUIREMENTS

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ARCHITECTURAL

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CHAPTER 8

ELECTRICAL

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ELECTRICAL

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NOTE: Any reference made to the “standard design” document in this chapter is referring to the U.S. Army Corps of Engineers Design Manual for Remoted Target System (RETS) Ranges.

8-1 **GENERAL REQUIREMENTS**. Electrical requirements for the 25M Firing Zero Range. Range shall closely follow what is described in chapter 8 of the General Design Requirements and the specific requirements of the other two ranges. The range will consist of the following facilities: 25M Firing Zero Range, Observation Tower, Ammo Breakdown Building, and the Covered Training Area.

8-2 **SITE ELECTRICAL.** The primary will be routed to the site as indicated on sheet C10.1 and will originate at transformer T2 at the Modified Record Firing Range. The primary circuits will be direct buried and terminate at transformer T3. All secondary circuits will for the range will be distributed from transformer T3 and will be in pvc conduit.

8-3 **SITE COMMUNICATIONS**. Twelve pair will be routed from the classroom of the Modified Record Firing Range to the 25M Firing Zero Range Observation tower.

8-4 **AMMO BREAKDOWN BUILDING**. Facility shall have a small distribution panelboard that is supplied by transformer T3. The lighting and receptacle requirements for the facility will be as specified in Chapter 8 of the General Design Requirements and as indicated in the standard design.

8-5 **OBSERVATION TOWER**. The observation tower power will originate in transformer T3. Lighting and receptacle requirements shall be as specified in Chapter 8 of the General Design Requirements and as indicated in the standard design. No downrange power panel is required at the base of the observation tower for this range.

8-6 **COVERED TRAINING AREA** No power or lighting required.

8-7 **RANGE EXTERIOR LIGHTING**. The range exterior lighting shall be as indicated in Chapter 8 of the General Design Requirements and the standard design. Power for the range lighting shall originate in the observation tower panelboard.

8-8 **25 METER FIRING ZERO RANGE**. Requirements for the range limit signs lighting, PA system, etc. shall be as described in Chapter 8 of the General Design Requirements. No power or control for targets is required at this range.

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CHAPTER 9

SUSTAINABLE DESIGN

NOT APPLICABLE

(Refer to Part B – General Design Requirements)