

**Report Date:** 30 Oct 2013

**Summary Report for Individual Task  
052-243-1513  
Perform Layout of a Construction Project  
Status: Approved**

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DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

DESTRUCTION NOTICE: None

**Condition:** In a field environment given, a Total Station surveying instrument with accessories, installed layout data, tripod, an individual to serve as rodman, and Technical Manual (TM) 3-34.55. This task should not be trained in MOPP.

**Standard:** Perform layout of a construction project using a Total Station. Set up the total station and lay out the project in accordance with the layout data.

**Special Condition:** This task should be trained simultaneously with individual task #052-243-1605, Install Survey Stakes for Horizontal Projects, or #052-243-1606, Install Survey Stakes for Vertical Projects.

**Safety Level:** Low

**MOPP:** Never

**Task Statements**

**Cue:** None

**DANGER**

None

**WARNING**

None

**CAUTION**

None

**Remarks:** None

**Notes:** None

### Performance Steps

1. Select a location on the job site that will provide maximum visibility to accurately layout the project site.
2. Set up the total station.
  - a. Input the administrative data using program 1.
  - b. Input the occupied station data using program 2.
3. Set out the project.
  - a. Select the stored Area file.
  - b. Enter the height of target (HT).
  - c. Determine a point code (P-CODE) or leave blank.
  - d. Determine a point number (Pno).
  - e. Verify the coordinates with the current occupied station.
  - f. Activate the track light function.
  - g. Select track light level.
  - h. Rotate the instrument until the screen shows "TURN: 0.0000."
  - i. Signal the rodman to face the instrument.
  - j. Signal the rodman to move in the direction needed.
    - (1) Signal the rodman to move towards the instrument if a negative number is displayed.
    - (2) Signal the rodman to move away from the instrument if a positive number is displayed.
  - k. Instruct the rodman to mark the spot with a stake when the correct position is indicated on the total station display.
  - l. Advise the rodman of a cut or fill for the stake.

Note: Cut/Fill will disappear when the REG key is pressed. Mark the stakes to remember this number.

    - (1) A negative number on the display represents a cut.
    - (2) A positive number on the display represents a fill.
  - m. Press REG to proceed to the next point.
  - n. Continue through the points of the project.

(Asterisks indicates a leader performance step.)

**Evaluation Preparation:** Setup: Provide the Soldier with the items that are listed in the condition statement. Ensure that all safety precautions are followed. Prepare the testing site and equipment in advance to ensure that the task standard can be met.

Briefing: Give the Soldier a safety briefing and read the task, condition, and standard before starting the test.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Selected a location that provided maximum visibility to accurately layout the project site.			
2. Set up the total station.			
3. Set out the project.			

**Supporting Reference(s):**

Step Number	Reference ID	Reference Name	Required	Primary
	TM 3-34.55	Construction Surveying	Yes	Yes

**Environment:** Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT. Conduct an Environmental Risk Assessment IAW FM 3-100.4. The assessment should be recorded on the Risk Management Worksheet found in Appendix F of FM 3-100.4. During the assessment, be on the lookout for environmental hazards, Environmental hazards include all activities that may pollute, create negative noise-related effect, degrade archaeological, cultural resources, negatively affect threatened or endangered species' habitats.

**Safety:** In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination. All operations will be performed to protect and preserve Army personnel and property against accidental loss. Procedures will provide for public safety incidental to Army operations and activities and safe and healthful work places, procedures, and equipment.

**Prerequisite Individual Tasks :** None

**Supporting Individual Tasks :**

Task Number	Title	Proponent	Status
052-243-1541	Produce Civil Engineering Drawings	052 - Engineer (Individual)	Analysis Completed
052-243-1248	Perform a Traverse Survey	052 - Engineer (Individual)	Analysis
052-243-1512	Establish Temporary Control Points	052 - Engineer (Individual)	Analysis
052-243-1601	Perform a Preliminary Site Survey (Topographic/Radial Survey) with a Total Station Survey Instrument	052 - Engineer (Individual)	Reviewed
052-243-1606	Install Survey Stakes for Vertical Projects	052 - Engineer (Individual)	Reviewed
052-243-1605	Install Survey Stakes for Horizontal Projects	052 - Engineer (Individual)	Reviewed
052-243-1546	Operate the Automated Integrated Surveying Instrument (AISI)	052 - Engineer (Individual)	Analysis

**Supported Individual Tasks :**

Task Number	Title	Proponent	Status
052-243-1605	Install Survey Stakes for Horizontal Projects	052 - Engineer (Individual)	Reviewed

052-243-3014	Inspect Survey Layouts	052 - Engineer (Individual)	Analysis
052-243-1606	Install Survey Stakes for Vertical Projects	052 - Engineer (Individual)	Reviewed
052-243-3419	Design Roadway Geometry	052 - Engineer (Individual)	Analysis

**Supported Collective Tasks :** None

**ICTL Data :**

<b>ICTL Title</b>	<b>Personnel Type</b>	<b>MOS Data</b>
12T10, Technical Engineer Specialist, Skill Level 1	Enlisted	MOS: 12T, Skill Level: SL1, Duty Pos: KIR