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## Chapter 5

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# Obstacle Planning at Task-Force Level and Below

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The goal of obstacle planning is to support the commander's intent through optimum obstacle emplacement and integration with fires. The focus at the corps, division, and brigade levels is to grant obstacle-emplacement authority and provide obstacle control. The focus at the TF level and below is the actual integration of fires and obstacles. At the TF level, obstacle planning is very directive and detailed and centers on obstacle groups. Below the TF level, obstacle planning deals with the actual siting and emplacement of individual obstacles.

### OBSTACLE PLANNING AT TASK-FORCE LEVEL

As with planning at higher levels, TF-level obstacle planning is part of the decision-making process. The following paragraphs provide techniques and considerations for obstacle planning integrated with the decision-making process.

#### MISSION ANALYSIS

The key activities during mission analysis are to—

- Determine the facts and develop assumptions.

- Analyze the higher HQ's mission and the commander's intent.
- Analyze the relative combat power.
- Issue the commander's guidance.

#### Determine Facts and Develop Assumptions

Obstacle planning begins with intelligence facts and assumptions, focused on the situation template (SITEMP). The SITEMP includes the modified combined obstacle overlay (MCOO). The MCOO is the basic product of the battlefield area evaluation, terrain analysis, and weather analysis from the IPB. It includes the combined obstacles overlay, AA overlay (with MCs), friendly operational graphic, key terrain, and known potential enemy objectives. Since tactical obstacles attack the enemy's maneuver and reinforce the existing terrain, the MCOO is vital to obstacle planning. It helps ensure that the obstacles correctly address the enemy AAs and MCs.

The SITEMP depicts an estimate of how the enemy will attack in terms of the size and the type of units and formations. The SITEMP should identify the probable locations where the enemy changes from a

march formation to a prebattle formation and finally to an attack formation. This information helps select how and what part of the enemy formation obstacles will attack and the effect the obstacles will have on the enemy's maneuver.

The SITEMP also may depict the likely routes for enemy reconnaissance elements. This helps determine requirements for R&S patrols that defeat enemy attempts to reconnoiter the obstacles and reduce their effectiveness before they attack.

The engineer provides information on current and projected engineer task organization and the capabilities of engineer units supporting the TF. In addition, he provides facts concerning SCATMINE systems that are available and specific information about his engineer equipment or obstacle materials that may not be known to the remainder of the staff,

The FSO provides information on artillery- or aircraft-delivered SCATMINEs that are available. The Supply Officer (US Army) (S4) identifies the quantity and location of obstacle material on hand, the transportation assets available for moving obstacle material, and the maintenance status of equipment that can contribute to the obstacle effort.

#### **Analyze Relative Combat Power**

The staff compares friendly and enemy combat power and identifies possible requirements for obstacles to help offset enemy advantages. The actual inclusion of obstacles normally occurs after COA development.

#### **Analyze Higher Headquarters' Mission and Commander's Intent**

The staff goes through each step of the analysis and identifies information that will impact on obstacle planning. The staff analyzes the brigade commander's intent to

determine how he wants to use obstacles to support his concept of the operation and achieve the desired end state. Normally, the brigade commander will have given each obstacle belt a specific effect; thus, the commander's obstacle intent is clear. If the commander does not provide the specific effects for each obstacle belt, the staff must determine his intent from the context of the order.

The TF must identify the tasks and limitations received from the brigade. These might include obstacle belts with or without a specified effect. They also include restricted areas or restrictions on types of obstacles. Also, the brigade may specify obstacle groups (situational, reserve, or directed).

The available assets determine the total obstacle capability in the TF. Available assets include engineer units, SCATMINE systems (artillery, air, or ground), infantry units that can provide more manpower for obstacle emplacement, and trucks and utility aircraft for moving obstacle materials. Although not considered an asset, time is an important resource that the staff must consider as it continues planning. Delays in completing a plan can have a major negative impact on the obstacle effort.

#### **Issue Commander's Guidance**

The commander's initial planning guidance on obstacles should be as specific as possible. If the commander narrows the number of COAs, or if some aspect of the different COAs remains unchanged, he may provide specific guidance on obstacles in certain areas. Any head start that the TF can get in emplacing obstacles is helpful.

#### **COURSE-OF-ACTION DEVELOPMENT**

After the staff develops a COA, the detailed obstacle planning begins. The staff focuses

on three specifics when developing the obstacle plan to support the COA.

- Fires analysis.
- Obstacle intent integration.
- Obstacle priorities.

### Fires Analysis

Fires analysis starts with reviewing the TF commander's intent. The staff examines how it can use obstacles integrated with maneuver in the COA to achieve the commander's intent.

The staff uses the COA that it normally depicts graphically on an overlay. The maneuver graphics include maneuver and fire-control measures. Fire-control measures indicate how and where combat forces will mass, shift, and lift fires to destroy the enemy. The staff should draw planning range fans for friendly weapon systems on the overlay. Combined with the fire-control measures, these range fans give the staff a feeling for where company teams can integrate obstacles with fires. Understanding the maneuver and fire plans and the organization of the EA are fundamental to integrating obstacles with fires.

### Obstacle Intent Integration

Based on the TF commander's intent and the fires analysis, the staff determines locations for directed obstacle groups. It starts by giving the obstacle groups a battlefield placement to support the maneuver plan. This location is for planning and is adjusted on the ground.

Each directed obstacle group targets a specific enemy element based on the SITEMP. The staff normally allocates groups against enemy battalion-size MCs just as they allocate a company team to defeat an enemy battalion. Company team fire responsibility, therefore, drives the placement of obstacle groups.

The staff decides which specific effect each directed obstacle group must achieve. It plans obstacle groups to—

- Disrupt the enemy.
- Turn the enemy into areas where friendly units can mass fires.
- Fix the enemy in the EA and enhance fires.
- Block the enemy along an AA.

The staff integrates these directed obstacle groups (location, target, and specific effect (intent)) with the COA. It shows the obstacle groups on the COA overlay using the obstacle effect graphics. The staff draws the graphic to reflect the location of the obstacle group as accurately as possible.

### Obstacle Priorities

The staff sets priorities for the directed obstacle groups that it placed on the COA overlay. The staff aligns the obstacle group priorities to support the TF direct-fire main effort. It numbers the obstacle effects graphics on the overlay starting with 1 and continuing in sequence. These priorities help to determine resource allocations and to ensure that units emplace the obstacles that are most critical to the overall plan first.

### COURSE-OF-ACTION ANALYSIS

The staff conducts war gaming to determine which COA it should recommend to the commander. The staff should consider obstacles within the total context of the COA. However, some specific considerations for the staff during war gaming are—

- Enemy reactions at obstacle groups versus the desired obstacle effect.
- Enemy breaching capability that may make one or more varieties of individual obstacles preferable (see *Appendix A*).
- Obstacle locations that inhibit friendly maneuver.

- Compatible obstacle effects and weapon system capabilities.
- Adequate fire-control measures to support obstacle effect.

After war gaming, the staff adjusts the COA to include the obstacle plan. These adjustments may include the following:

- Changes to locations of directed obstacle groups.
- Changes to the obstacle effect at a specific location.
- Addition of situational obstacle groups (see *Chapter 6* for specific considerations).
- Addition of reserve obstacle groups (see *Chapter 7* for specific considerations).
- Identification of other mobility requirements.

#### **Mobility Requirements**

The staff identifies mobility requirements to determine which obstacles need lanes or bypasses available for friendly forces. Lanes and bypasses are normally required for tactical repositioning, C2, and sustainment traffic. The staff identifies locations for lanes and bypasses based on tactical repositioning from the maneuver graphics, such as a route, axis, or subsequent position. It also identifies C2 mobility requirements, to include plans for rehearsals and physical placement of TRPs. Lastly, the staff identifies lanes and bypasses that are needed to support sustainment traffic. Considerations are the MSRs into and through the TF area, the TF logistics release point (LRP), the routes the company team takes from its position to the LRP, and the location of key TF logistics nodes.

#### **Obstacle Design and Resourcing**

After comparing the COAs and determining the COA for recommendation to the commander, the staff can conduct more detailed

planning for the obstacle plan that supports that COA. Specifically, the staff can determine the tentative design and resourcing for the obstacle plan. Final design and resourcing occurs after the commander approves the COA and any final changes. In fact, final design normally occurs at the company team and emplacing unit level. Nevertheless, the staff can develop a detailed concept that will require only minor modifications to support the final approved plan.

The staff begins by resourcing the groups based on the MC widths and the desired effect. It determines MC widths from the SITEMP. The total amount of linear obstacles required in a particular group is equal to the width of the MC multiplied by the resource factor for the obstacle effect, *Appendix C* explains resourcing in detail. The TF staff resources the obstacle groups according to the obstacle group priorities. Once the staff resources the obstacle groups, the engineer plans the individual obstacles.

Use of standard obstacles supports resource planning and obstacle group design. The plan for the individual obstacles, which make up a group, serves as a guide for the TF staff to adjust the resource allocation. If time is available for detailed reconnaissance, the design of the group may provide the company teams the actual obstacle design for each group. However, the design of the obstacle groups usually serves as a guide to company teams, and they conduct the actual design of the individual obstacles with the emplacing unit leader.

#### **DECISION AND EXECUTION**

Once the commander selects a COA, the staff completes the plan and publishes the order. The staff makes final adjustments to the plan and provides subordinate units with oral, written, and graphical information, with sufficient detail to allow the

subordinates to conduct the operation. The TF staff normally gives information concerning obstacles to subordinates using two tools. They are the—

- Scheme-of-obstacles overlay.
- Obstacle-execution matrix.

#### **Scheme-of-Obstacles Overlay**

The scheme-of-obstacles overlay depicts the location of obstacle belts, brigade obstacle groups (if any), and TF obstacle groups, within the TF sector. It also includes obstacle restrictions from any higher level (the staff annotates restrictions that it cannot show graphically). The overlay portrays obstacle groups using an obstacle-effect graphic. These obstacle graphics define the general location and the effect to be achieved by individual obstacles.

The obstacle overlay does not normally depict individual obstacle locations. However, the staff may depict individual obstacles if detailed reconnaissance has been done and exact obstacle locations are identified. Alternately, the staff may include individual proposed obstacle graphics with the obstacle-effect graphic to guide the emplacing unit and the owning unit on the general configuration of the obstacle group. Commanders must exercise caution if they use individual proposed obstacles on an overlay. They must ensure that inexperienced subordinates do not attempt to emplace obstacles exactly as depicted on an overlay, instead of properly siting the obstacle. The TF scenario that follows includes an example of a TF obstacle overlay.

#### **Obstacle-Execution Matrix**

The obstacle-execution matrix includes specific instructions and detailed information concerning the obstacles on the scheme of obstacle overlay. Normally, there is a separate execution matrix for each type of tactical obstacle. Chapters 6 and 7 describe

and provide examples of obstacle-execution matrices for reserve and situational obstacles respectively *Figure 5-1, page 5-6*, is an example of a directed obstacle-execution matrix.

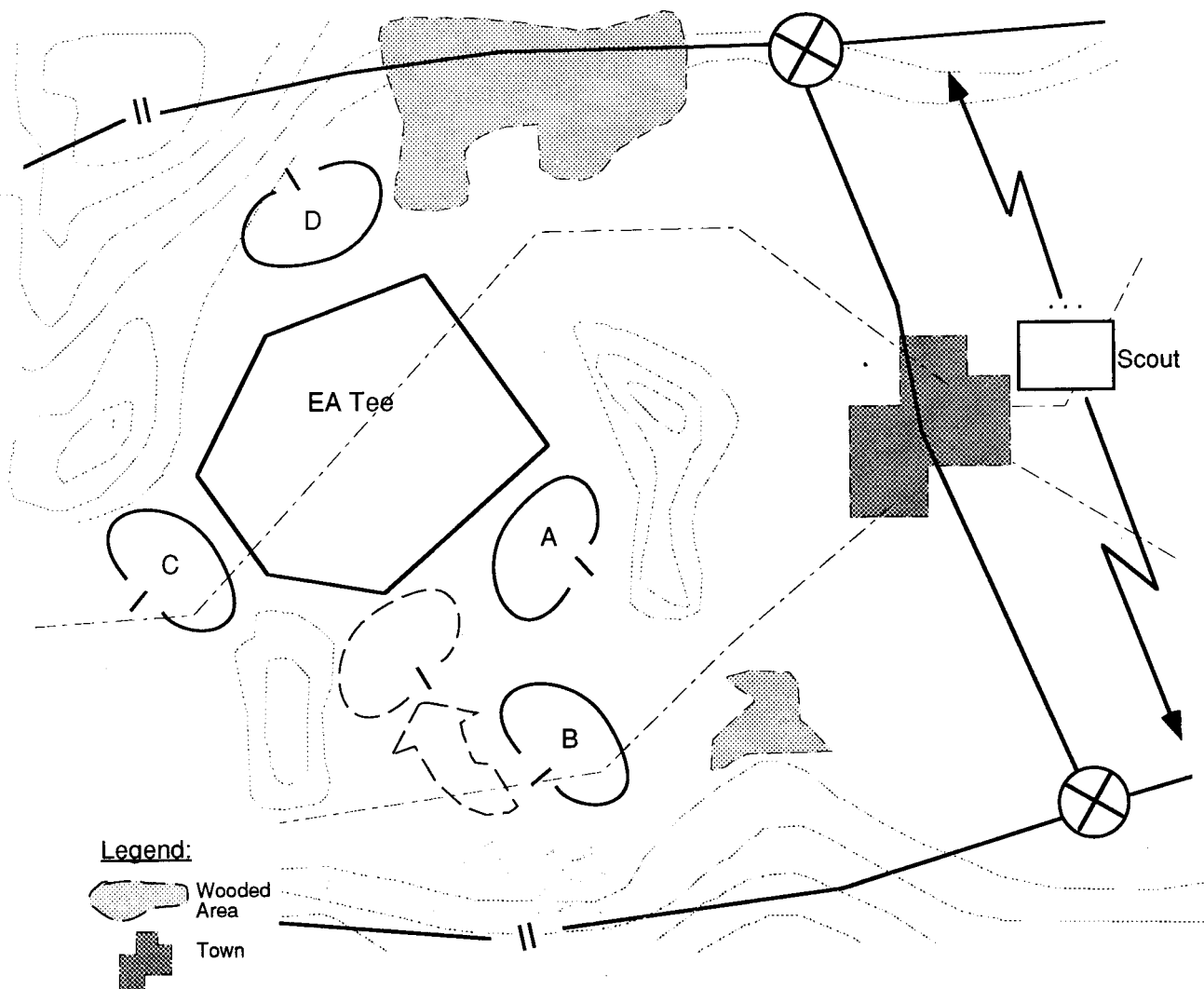
As a minimum, a directed obstacle-execution matrix should include the following:

- Zone/belt/group designation and individual obstacle numbers (see *Appendix B*).
- Location (grid coordinates appropriate to the detail of the plan. This may be a center of mass grid for the group, start and end points of the group trace, or grid coordinates for individual obstacles, if known).
- Obstacle effect for the group.
- Priority for the group.
- Emplacing and owning unit.
- Location of any lanes and closure instructions or reference to a reserve-obstacle matrix, if appropriate.
- Material or assets allocated for the group (possibly listed by number of standard obstacles. See *Appendix A*).
- Location of the obstacle materials (the Class IV and Class V point or other site. See *Appendix C*).
- Any special instructions for each group.

### **TASK-FORCE OBSTACLE SCENARIO**

The following scenario highlights some considerations for obstacle planning at the TF level. The TF commander has the mission to defend in sector to defeat an enemy regiment. Based on the TF mission, the commander directs the staff to develop the COA depicted in *Figure 5-2, page 5-7*. The scouts will screen forward. Teams A and C and Company D defend from BPs A, C, and D, respectively, to mass fires in EA Tee. Team B defends along a secondary AA in the south from BP B. On order, Team B





**Figure 5-2. TF defense course of action.**

repositions to a subsequent BP to support the fight in EA Tee.

The staff develops an obstacle plan to support the COA. First, it analyzes the fire plan to determine the areas where fires are massed to destroy the enemy. The staff sketches in rough range fans based on the probable weapon systems in each BP. These areas suggest locations where the staff can integrate obstacles with fires (see *Figure 5-3, page 5-8*). The staff selects locations for directed obstacle groups. It confines the obstacle group locations to obstacle belt A1,

which it identified during mission analysis. The staff uses obstacle-effect graphics to show the relative location of the obstacle groups and indicate the desired obstacle effect. The obstacle groups target enemy battalion-size formations (see *Figure 5-4, page 5-9*). Finally, the TF staff sets priorities for the obstacle groups based on the importance of the obstacle group to the success of the COA. *Figure 5-4* also shows the priorities that support the commander's desire to stop the enemy in the south, force it to piecemeal into the EA, and destroy it in the EA.

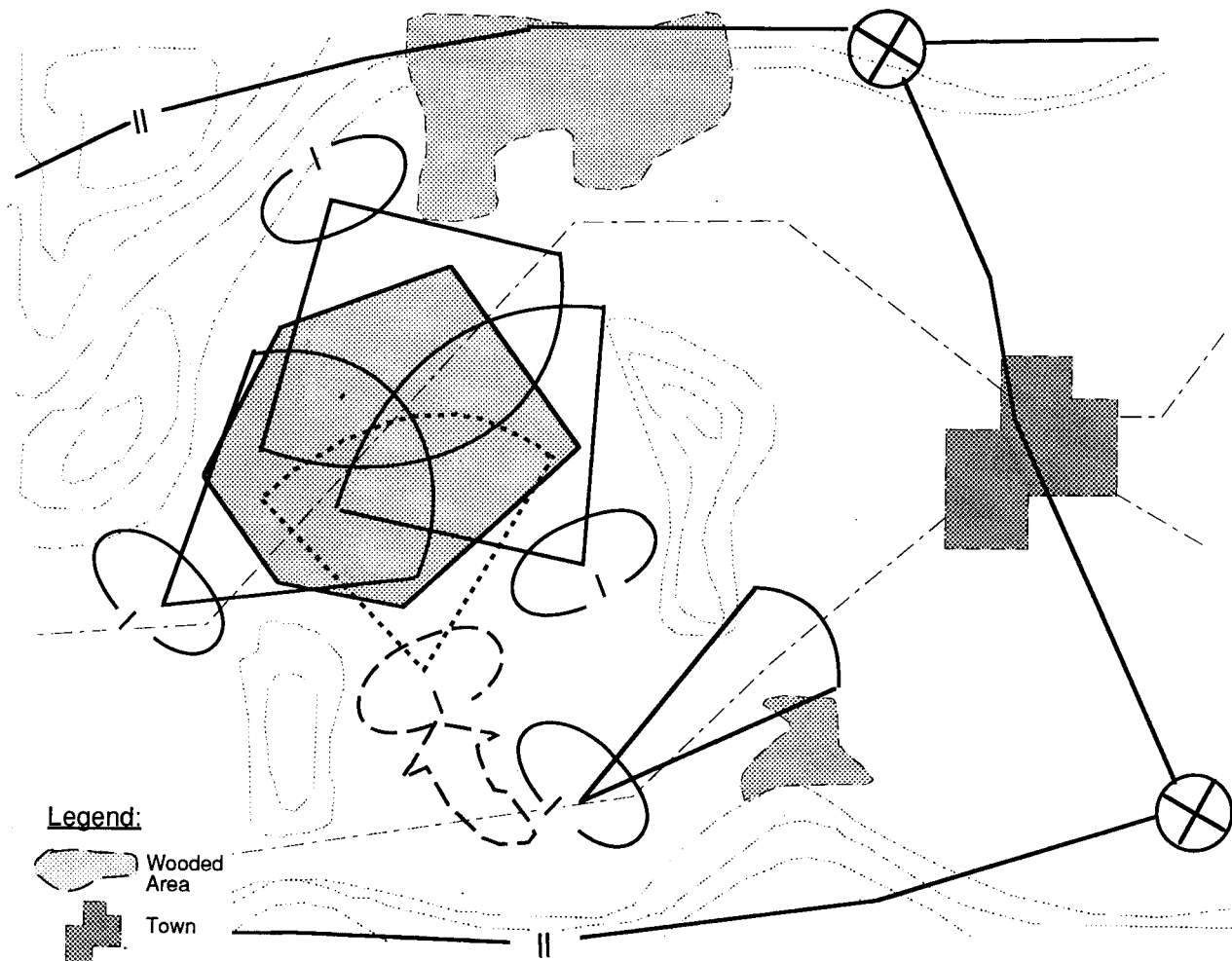


Figure 5-3. TF direct-fire analysis.

The staff analyzes the COA and makes adjustments based on the analysis. These adjustments include the addition of a situational obstacle group to support the withdrawal of the scouts. The staff also identifies mobility requirements. These requirements include lanes for passage of the TF scouts and marked bypasses in the EA to support EA rehearsals. *Figure 5-5, page 5-10*, shows the situational obstacle group and mobility requirements annotated on the obstacle plan.

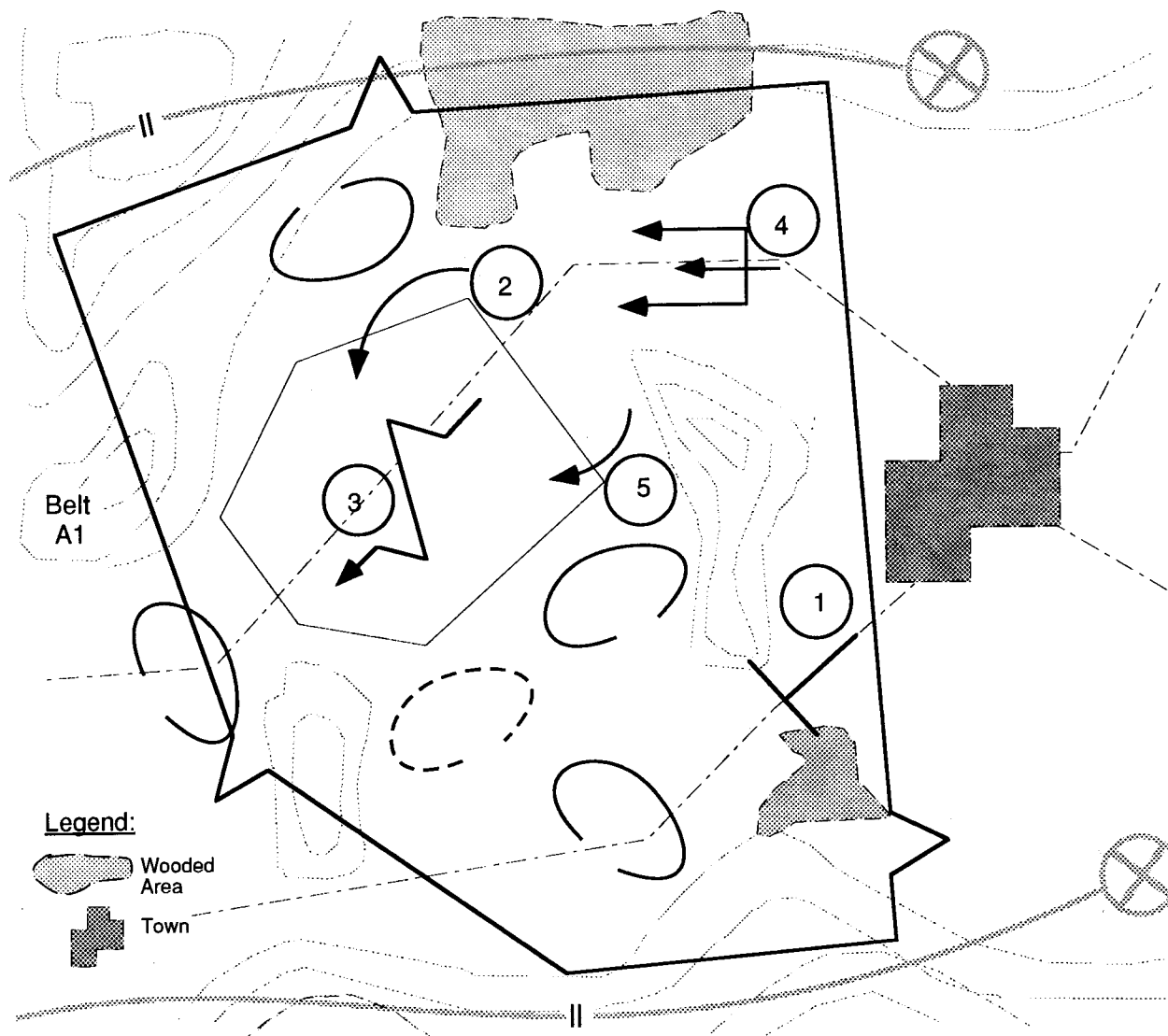
The staff conducts obstacle design and resourcing for the obstacle plan. Obstacle resourcing to support an obstacle plan is discussed in *Appendix C*. The design of obstacle groups is discussed in *Appendix A*.

Following the commander's decision to accept the COA as it is, the staff finalizes the obstacle plan. The final plan includes a scheme-of-obstacles overlay (see *Figure 5-6, page 5-11*) and obstacle execution matrices.

### OBSTACLE PLANNING BELOW TASK-FORCE LEVEL

The following paragraphs outlines principles for siting tactical obstacles to support the company team. The focal point is the coordination that must occur between the emplacing unit leader (normally an engineer platoon leader) and the company team commander. This coordination is perhaps





**Figure 5-4. Obstacle intent integration and priorities.**

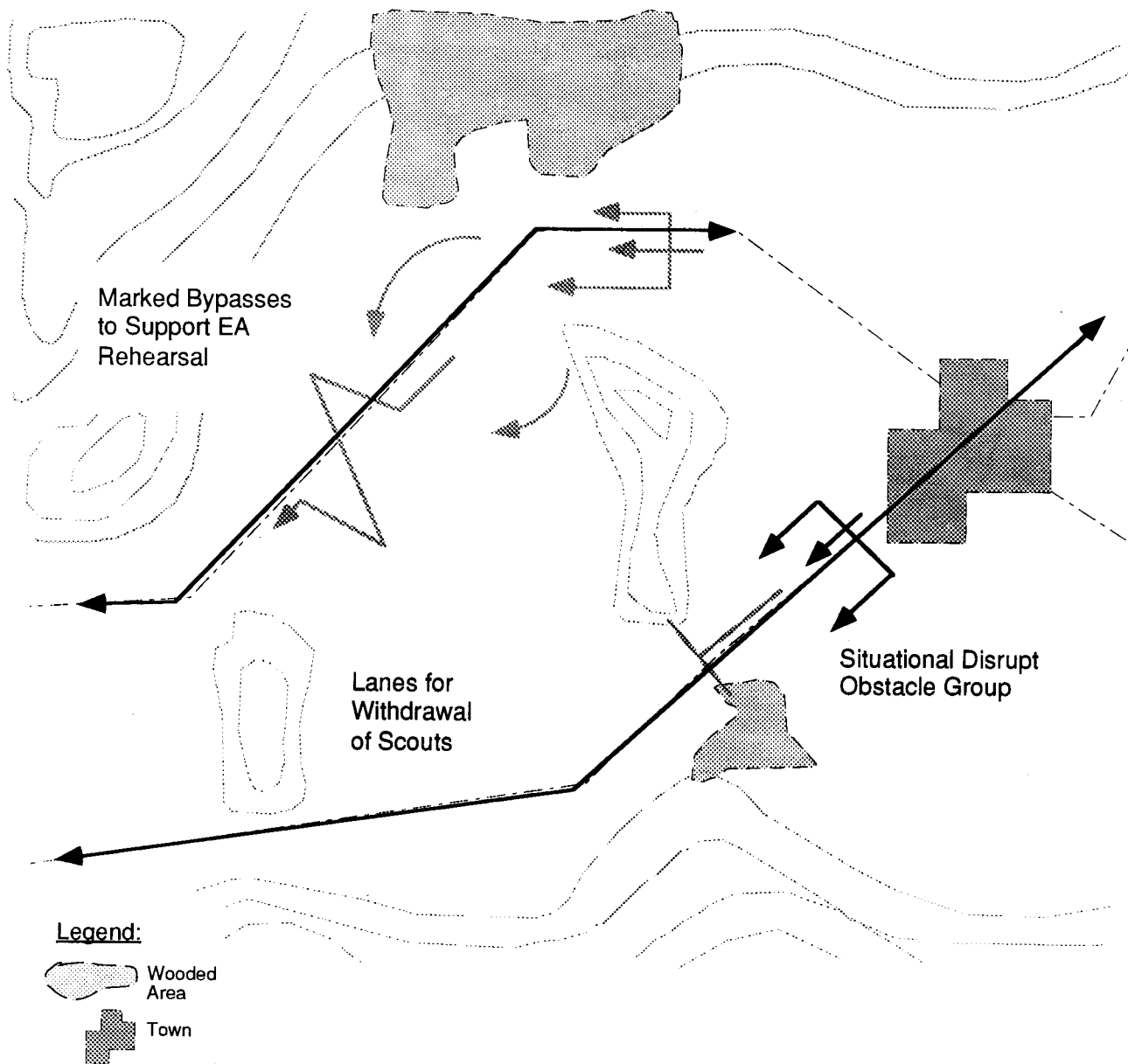
the most vital component of effective obstacle integration. It is at this level that units directly integrate obstacles with the effects and capabilities of weapons and the fire plan. Once the coordination is complete, the emplacing unit physically sites the obstacle with the company team.

#### **COORDINATION WITH THE MANEUVER COMMANDER**

Effective coordination with the company team commander who is responsible for

the obstacle group is essential to making the obstacles a combat multiplier. The emplacing engineer is the company team commander's team engineer for the mission. The engineer and the company team commander work closely to ensure complete integration of obstacles with the company team plan.

The emplacing engineer and company team commander use a common set of information when conducting coordination. The following tools or information will improve coordination:



**Figure 5-5. Obstacle plan refinement.**

- SITEMP.
- Commander's intent.
- Maneuver graphics and fire plan.
- Obstacle execution matrix/matrices.
- Scheme-of-obstacle overlay.
- Fire-support plan.
- CSS graphics.

During coordination, a checklist or framework is a useful tool for organizing thoughts and formulating questions. *Table 5-1, page 5-12*, provides a checklist of some considerations for use during coordination between the emplacing engineer and the company team commander. These considerations are organized using the BOSs to provide a logical framework.

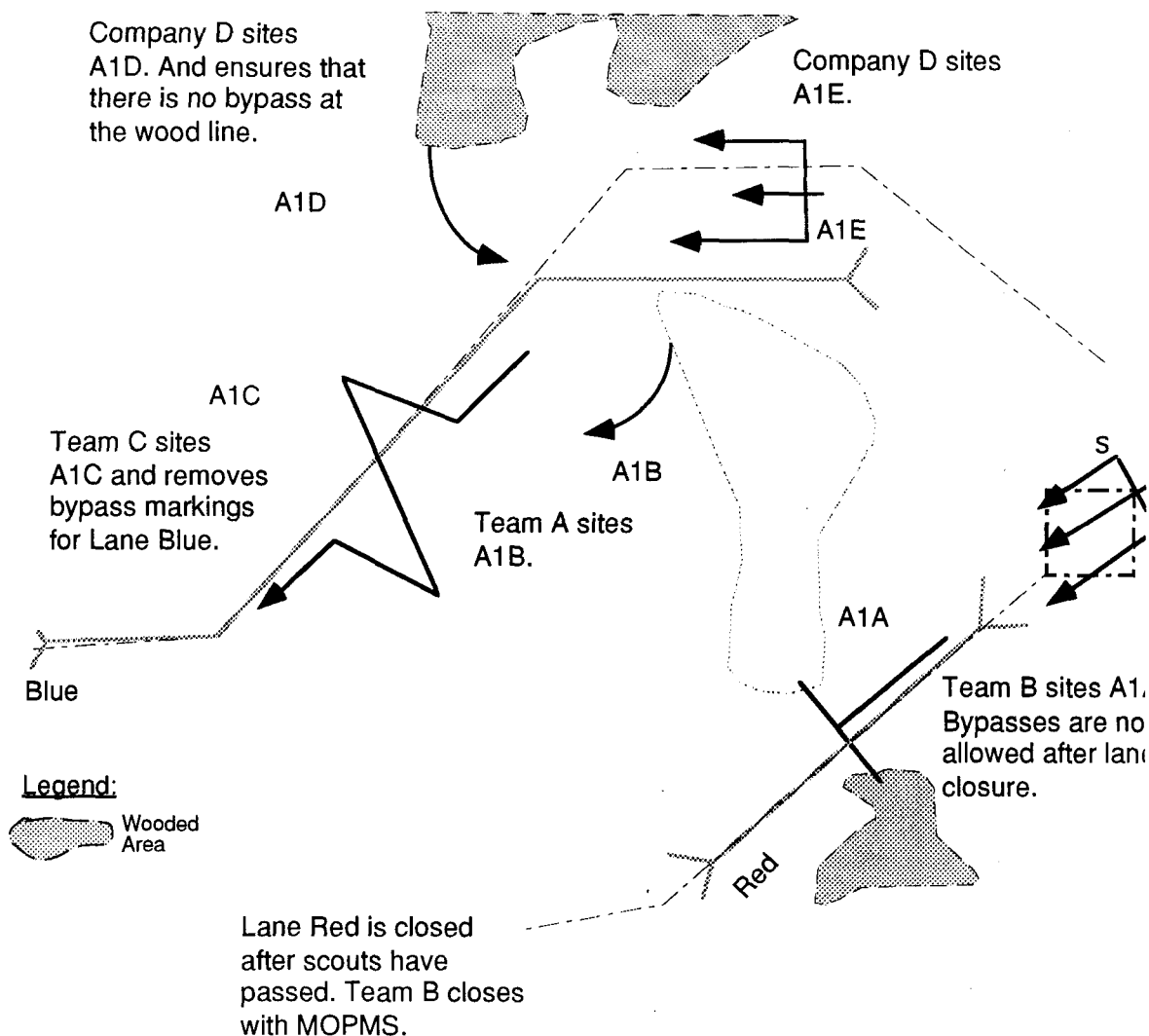


Figure 5-6. Scheme-of-obstacles overlay.

**SITING THE OBSTACLE**

The emplacing engineer and the company team commander site individual obstacles to achieve synchronization between the obstacle effect and fires. Both must devote sufficient time to the siting effort, since it represents the final adjustments to obstacle location and fire control before emplacement.

To site individual obstacles, certain preconditions are necessary. First, the company team commander decides where he plans to

mass fires and marks the necessary fire-control measures on the ground. The location of these control measures must be clear since they are the basis for obstacle siting. Second, the commander identifies tentative locations for his key weapons within his position or sector. Finally, he and the engineer must both understand the intent of the obstacle group.

Obstacle siting concentrates on marking the obstacle group as a whole instead of each

**Table 5-1. Obstacle-coordination checklist.**

<b>BOS</b>	<b>Considerations</b>
<b>Intelligence</b>	<ul style="list-style-type: none"> <li>• Enemy AAs and MCs (mounted and dismounted)</li> <li>• Likely enemy COAs and possible reactions to obstacles</li> <li>• Enemy breaching capability</li> <li>• Enemy reconnaissance routes, friendly counterreconnaissance or R&amp;S plans, and company-team-level patrols</li> <li>• Likely enemy formations and transitions between formations</li> </ul>
<b>Maneuver</b>	<ul style="list-style-type: none"> <li>• Higher HQ commander's intent</li> <li>• Type of weapons and locations</li> <li>• Sectors of fire/location of TRPs</li> <li>• Mobility requirements for adjacent units, CATK axis and routes for repositioning, employment of reserves, and passage of lines</li> <li>• Obstacle-protection measures</li> </ul>
<b>M/S</b>	<ul style="list-style-type: none"> <li>• Obstacle intents (target, location, and obstacle effect)</li> <li>• Integration of obstacles and fires</li> <li>• Obstacle-control measures and restrictions from higher HQ</li> <li>• Obstacle marking to prevent fratricide</li> <li>• TF mobility requirements (lanes and gaps)</li> <li>• Mutual support between obstacle location, fire plan, obstacle effects, and survivability positions</li> </ul>
<b>Fire</b>	<ul style="list-style-type: none"> <li>• Artillery or mortar targets</li> <li>• Type of priority targets and FPFs</li> <li>• Plan for covering obstacle effects with indirect fires</li> <li>• Indirect-fire control measures to synchronize direct and indirect fires and obstacles</li> <li>• Fire registration plan (deconflict with obstacle emplacement)</li> <li>• Fire support, if enemy contact occurs during emplacement</li> <li>• ADAM/RAAM use (lane closure, repair breached obstacles)</li> </ul>
<b>Air Defense</b>	<ul style="list-style-type: none"> <li>• Location of the enemy air AAs during emplacement</li> <li>• Update on changes to air-defense warning and weapons status</li> <li>• Location of air-defense systems that can cover engineers emplacing obstacles</li> <li>• Method of obtaining early air-defense warning</li> </ul>
<b>CSS</b>	<ul style="list-style-type: none"> <li>• Tentative location of Class IV and Class V supply point within the company team position, if used, and the routes from the supply point to the obstacles</li> <li>• Routes the company team plans to use to conduct logistical package (LOGPAC) operations</li> <li>• Manpower assistance and materials handling equipment (MHE) at the Class IV and Class V supply point</li> </ul>
<b>C2</b>	<ul style="list-style-type: none"> <li>• Location of commander during defensive preparation</li> <li>• Frequency modulated (FM) net of the supported company team and the means of communication</li> <li>• Unit boundaries affecting obstacle emplacement</li> <li>• Time and place of company team order</li> <li>• Coordination that must occur with adjacent units</li> <li>• Obstacle reporting and recording requirements</li> <li>• Time and method of obstacle turnover</li> <li>• Lane-closure responsibilities and procedures</li> </ul>

individual obstacle; however, in broken terrain, it may be easier to site individual obstacles. The company team commander and emplacing engineer use vehicles or soldiers from the company team, the engineer platoon, or both to simulate the enemy force and do the physical marking. The simulated enemy forces move into the EA to the enemy side of the obstacle group. The engineer platoon leader and the company team commander collocate near the weapons covering the obstacle. As a technique, one or all of the tanks, Bradleys or other crew-served weapons may occupy their position and contribute to the siting process. All participants in the siting process use a common FM net to communicate during siting.

The simulated enemy forces move into the EA simulating the enemy's attack. They deploy into a formation of similar frontage as the expected enemy formation. Once they are near the marked fire-control measures, they place markers at intervals as they drive the trace of the obstacle group effect (or individual obstacles in broken terrain). They remain oriented on key fire-control measures to ensure that the obstacle location and effect are synchronized with fires. During the process, each participant verifies that he can cover the obstacle, notes the location of fire-control measures and obstacles, and records the appropriate data on range cards. As the platoon drives the obstacle trace, siting participants also identify dead space and requirements to refine the location of the obstacle group and fire-control measures. The siting process also may identify the need for other fire-control measures. *Figure 5-7, page 5-15*, illustrates how the engineer and the company team commander work together to site a turn and a fix obstacle group respectively.

Once the company team marks the general limits and orientation of the obstacle group, the engineers can begin marking individual

obstacles (if this has not already been done). To mark individual obstacles, the engineer platoon uses the group markers as a guide. As shown in *Figure 5-7, page 5-15*, the group markers may lend themselves well as the start and end points of individual obstacles; however, this is not always the case. As the engineer platoon refines the group limits into the site of individual obstacles, the platoon can then begin the necessary site layout based on the method of obstacle emplacement.

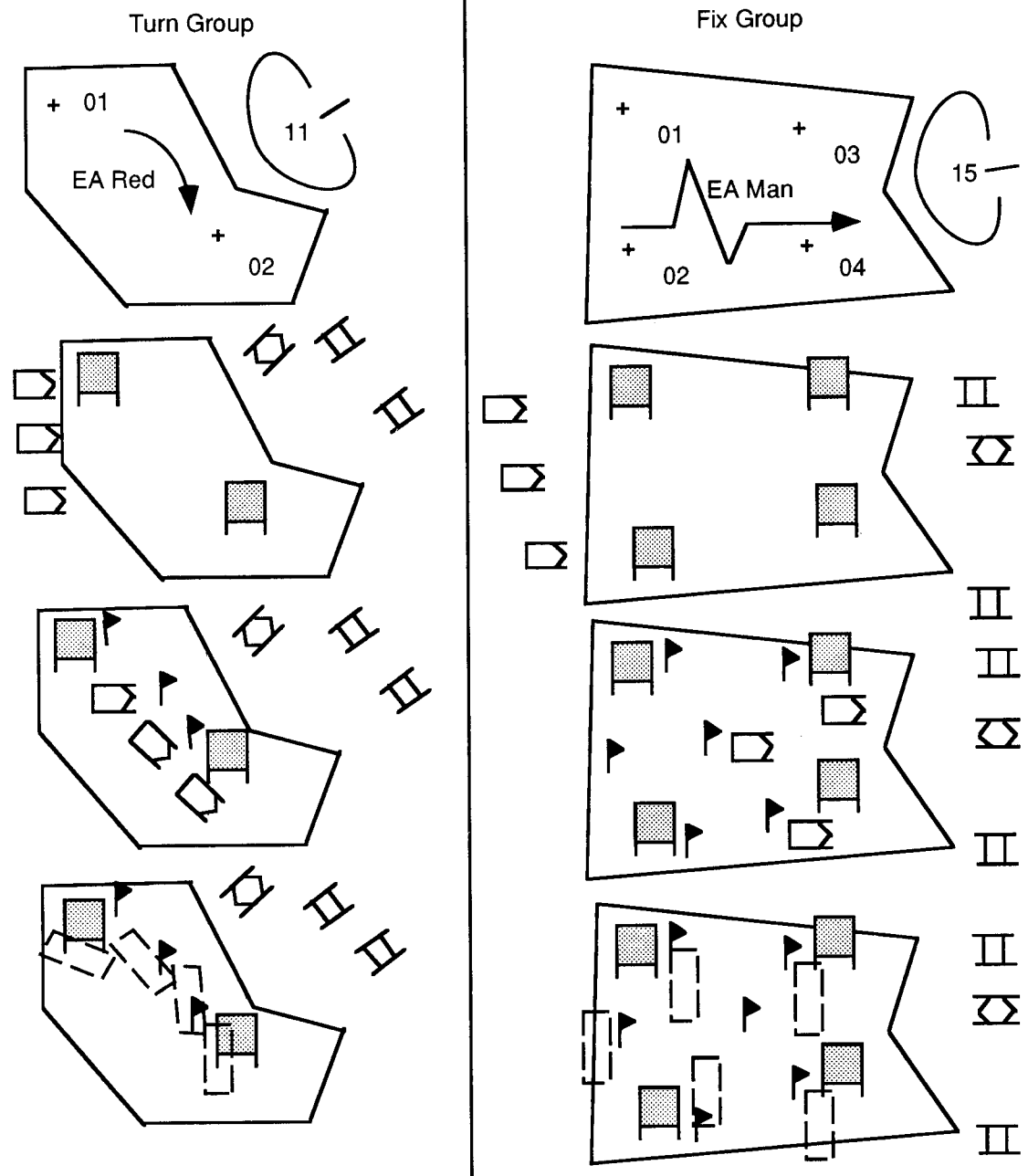
Siting is not the last thing done during preparations. The time and resources involved in emplacing tactical obstacles requires that siting begin concurrently with establishing the defensive position. It is imperative that the unit sites the obstacles as soon as the company team commander establishes the EA and identifies tentative positions for key weapons. It is not necessary that all weapons are in place and dug in before siting. Normally, well-marked fire-control measures and one known position per maneuver platoon (not dug in) are all that is required to effectively site the obstacles.

#### OBSTACLE TURNOVER AND TRANSFER

Once an obstacle group is completed, the emplacing unit conducts obstacle turnover with the owning unit. Occasionally, an owning unit will transfer responsibility for an obstacle to another unit. Obstacle turnover or transfer ensures that the commander of the owning unit is familiar with the obstacle and understands its responsibilities concerning the obstacle. Considerations for obstacle turnover and transfer are as follows:

- Mutual identity check (normally only for obstacle transfer).
- Briefing on local friendly and enemy situations.

- Description of the obstacle, to include location, type, marking, and composition.
  - Conventional- mine fields (types of mines, fuzing, and antihandling devices (AHDs)).
  - Scatterable minefield (types of mines, duration/SD time, and safety zone).
  - Other obstacles (booby traps and other hazards).
- Information on lanes, to include number, locations, marking, and closure plan or information on the reserve obstacle (if applicable).
- Coordination completed or still required with the FIST.
- Transfer of graphics and documentation (minefield records, demolition target folders, orders for the demolition guard, or other written records).
- Guidance on obstacle protection measures taken or required (counterreconnaissance, targeting enemy breachers, obstacle repair, or phony obstacles).



**LEGEND:**

- |   |             |  |                  |  |                      |
|---|-------------|--|------------------|--|----------------------|
| + | Planned TRP |  | Bradley Position |  | Group Marker         |
|   | Marked TRP  |  | Tank Position    |  | Individual Minefield |
|   |             |  | Engineer Vehicle |  |                      |

**Figure 5-7. Obstacle siting.**