

052-196-3008
Conduct a Bridge Reconnaissance
Status: Approved

Distribution Restriction: Approved for public release; distribution is unlimited.

Destruction Notice: None

Foreign Disclosure: FD1 - This training product has been reviewed by the training developers in coordination with the Fort LeonardWood, MO/Maneuver Support Center of Excellence (MSCOE) foreign disclosure officer. This training product can be used to instruct international military students from all approved countries without restrictions.

Condition: Given a mission in a field environment, an engineer squad with organic equipment, a bridge, a map of the area, a compass, measuring tape, ATP 3-34.81, TM 3-34.22 and DD 3011 Bridge Reconnaissance Report. Some iterations of this task should be performed in MOPP 4.

Standard: Reconnoiter the correct bridge and accurately complete the DD Form 3011, all measurements must be exact. All required bridge sections must be sketched on the back of the form, IAW ATP 3-34.81, Engineer Reconnaissance.

Special Condition: None

Safety Risk: Low

MOPP 4: Sometimes

Task Statements

Cue: None

DANGER

None

WARNING

None

CAUTION

None

Remarks: None

Notes: None

Performance Steps

1. Collect Bridge Reconnaissance Data on DD Form 3011 as shown in (Figure 052-196-3008-01 Front/02 Back).

BRIDGE RECONNAISSANCE REPORT <small>For use of this form, see ATP 3-34.1/1MCMF 3-17.4, the proponent agency is TRADOC.</small>								DATE (YYYYMMDD) 1 Jul 15		SIGNATURE SFC Gerald Smith			
TO (Headquarters ordering reconnaissance) Commander, ATTN: S-2, 21st Engineer Battalion								FROM (Name, grade and unit of officer or NCO conducting Reconnaissance) Gerald Smith, SFC, Company A, 21st Engineer Battalion					
1. MAPS (Country, scale and sheet number or name) USA, 1:50,000, AMS V7333 5561 IV, Quantico								2. DATE/TIME GROUP (Of signature) 011430ZJUL15					
3. ESSENTIAL BRIDGE INFORMATION								4. ADDITIONAL BRIDGE INFORMATION					
a. SERIAL NUMBER	b. LOCATION	c. CLEARANCE		d. SPANS				(Add columns as needed) (Military load class, overall length, roadway width, vertical clearance, bridge by-pass)					
		(1) HORIZONTAL	(2) UNDER BRIDGE	(1) NUMBER	(2) TYPE OF CONSTRUCTION	(3) TYPE OF CONSTRUCTION MATERIAL	(4) LENGTH AND CONDITION						
21	LA 07216874		9	N 1/6	3	h	4 m W	16	27.6 m	7.3 m		Easy, ford safe located next to bridge	
				2/6	3	h	4.2 m W						
				3/6	3	h	4.3 m W						
				4/6	3	h	4.3 m W						
				5/6	3	h	4.5 m W						
				6/6	3	h	4.3 m W						

DD FORM 3011, DEC 2015

REPLACES DA FORM 1249, WHICH IS OBSOLETE

Adobe Professional X

Figure 052-196-3008-01
DD Form 3011 (Front)

5. SKETCHES	
a. SIDE ELEVATION	SCALE 1 SQUARE = None
b. CROSS SECTION OF CRITICAL SPAN	SCALE 1 SQUARE = None
c. CROSS SECTION OF CRITICAL MEMBER	SCALE 1 SQUARE = None
d. SITE PLAN	SCALE 1 SQUARE = None
6. BRIDGE CLASS COMPUTATION	
None	

DD FORM 3011 (BACK), DEC 2015

Figure 052-196-3008-02
DD Form 3011 (Back)

a. Collect detailed technical information on selected bridges through bridge reconnaissance.

(1) Conduct the bridge reconnaissance as part of a route or road classification or as a separate mission focused on the selected bridge.

Note: Based on the situation, the reconnaissance may be conducted by an engineer reconnaissance team (ERT), an augmented ERT, an assessment team, or a survey team. The level of detail of the information collected will increase in the progression from ERT to survey team.

(2) Include a sketch as well as photographs when possible in the bridge reconnaissance report.

(3) Collect information to be used in determining the bridge load-carrying capacity.

(4) Estimate resources for repair or upgrade of the bridge.

Note: Engineer reconnaissance teams (ERTs) also conduct bridge reconnaissance to collect information to enable the planning and estimation of the materials required for a bridge demolition.

(5) Use DD Form 3011, Bridge Reconnaissance Report, to report the information collected from a bridge reconnaissance as shown in (Figure 052-196-3008-01).

(6) Show as much information as possible when sketching the bridge on the backside of DD Form 3011, or included details photographs of critical members as shown in (Figure 052-196-3008-02).

Note: For bridges that present a challenge to reconnaissance elements collecting information and/or determining a classification, USACE assistance is available through reach-back support as discussed in Appendix E of ATP 3-34.81, Engineer Reconnaissance.

b. Ensure the reconnaissance team collects general information and assesses the bridges general condition, paying particular attention to evidence of damage from the following:

- (1) Assess the bridge for any evidence of Rot.
- (2) Assess the bridge for any evidence of Rust.
- (3) Assess the bridge for any evidence of Deterioration.
- (4) Assess the bridge for any evidence of Combat action.

c. Ensure to use classification procedures to presume that a bridge is in good condition. If the bridge is in poor condition, the classification obtained from mathematical computations must be reduced according to the classifier's judgment. See TM 3-34.22/MCRP 3-17.1B for a complete discussion of bridge classification procedures and signing of a bridge. The bridge assessment provides the basic MLC information necessary for the commander to plan for the use of the bridge.

d. Collect specific bridge information necessary to fill out the full NATO bridge symbol on a map or overlay as shown in (Figure 052-196-3008-03). The information necessary for the full bridge symbol includes:

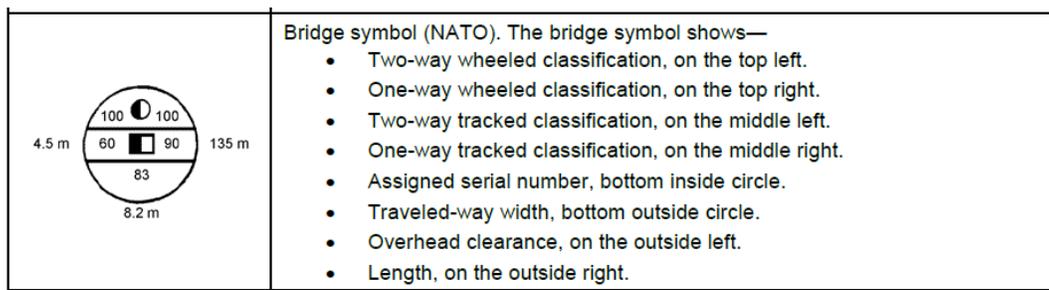


Figure 052-196-3008-03
Full NATO bridge symbol

- (1) Collect One-way wheeled classification, on the top right.
- (2) Collect Two-way wheeled classification, on the top left.
- (3) Collect Two-way tracked classification, on the middle left.
- (4) Collect One-way tracked classification, on the middle right.
- (5) Collect Assigned serial number, bottom inside circle.
- (6) Collect Traveled-way width, bottom outside circle.
- (7) Collect Overhead clearance, on the outside left.
- (8) Collect Length, on the outside right.

e. Ensure a bridge serial number is assigned for future reference, and it is recorded in the lower portion of the symbol (assign a number according to the unit SOP). For proper identification, do not duplicate serial numbers within any one map sheet, overlay, or document.

f. Ensure a telltale or other warning device is placed before the bridge to indicate overhead clearance limitations. (See Figure 052-196-3008-04.) A question mark is used to indicate information that is unknown or undetermined and is included as part of the bridge reconnaissance symbol.

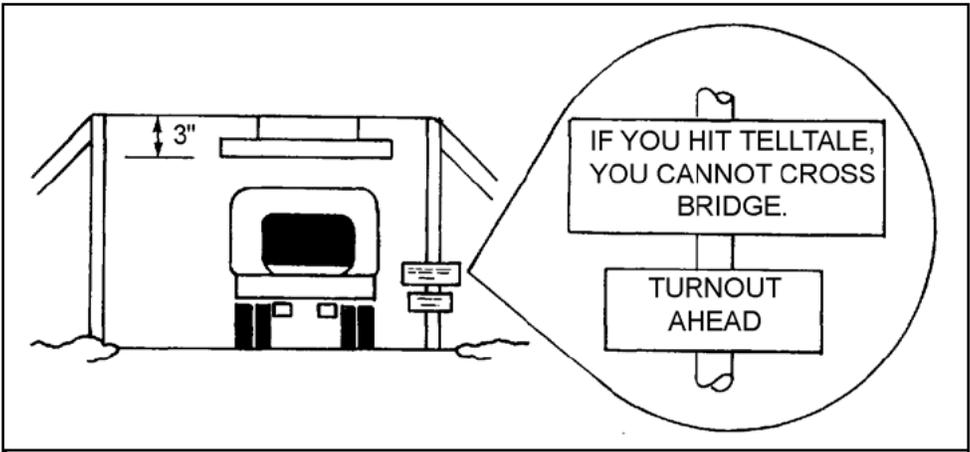


Figure 052-196-3008-04
Telltale

g. Ensure the reconnaissance team may be interested in railway bridges that could be used by other vehicles in an emergency. The team conducts a bridge reconnaissance and makes an overall assessment of the adaptability of the railway bridge for vehicle traffic indicating use easy or use difficult on the bridge symbol. A railroad bridge is considered easy to adapt for use if it can be adapted in less than 4 hours with 35 Soldiers and the appropriate resources.

2. Prepare a DD Form 3011, (Bridge Reconnaissance Report) as shown in (Figure 052-196-3008-01, Front).

a. Prepare header information.

- (1) Prepare Date block. Date the reconnaissance was conducted.
- (2) Prepare Signature block. Signature of officer or NCO conducting the reconnaissance.
- (3) Prepare To block. Headquarters ordering reconnaissance.
- (4) Prepare From, Name, grade and unit of officer or NCO block conducting the reconnaissance.
- (5) Prepare Maps block. Include country, scale, and sheet numbers or name.
- (6) Prepare Date/Time Group block. Date/time group of when the DD Form 3011, Bridge Reconnaissance Report was signed.

b. Prepare Column 1 and record the assigned serial number. This number matches the serial number used in the bridge symbol of the route classification overlay.

c. Prepare Column 2 and record the 8-digit grid coordinates, with the map identifier, of the actual bridge site.

d. Prepare Column 3 and record the horizontal clearance information in meters. The horizontal clearance is the clear distance between the inside edges of the bridge structure, measured at a height of 0.3 meters above the surface of the traveled way and upwards. However, horizontal clearance for truss bridges is measured 1.21 meters above the traveled way. Any horizontal clearance less than the minimum required for the bridge roadway width (Table 052-196-3008-01) is underlined. Unlimited clearance is indicated by the infinity (∞) symbol.

Roadway Width (meters)	Bridge Classification	
	One-Way	Two-Way
2.75–3.34	12	0
3.35–3.99	30	0
4–4.49	60	0
4.5–4.99	100	0
5–5.4	150	0
5.5–7.2	150	30
7.3–8.1	150	60
8.2–9.7	150	100
Over 9.8	150	150

Note. The minimum overhead clearance for all classes is 4.3 meters.

Table 052-196-3008-01
Minimum roadway widths

e. Prepare Column 4 and record under-bridge clearance, in meters. It is the clear distance between the underside of each span and the surface of the water. The height above the streambed and the height above the estimated normal water level (pertaining to the appropriate bridge type) are included in this column for each span.

f. Prepare Column 5 and if the bridge is oriented more north to south, start with the northern most span and work south. Place the letter N in column 5 before the first span in the sequence. If the bridge is oriented more east than west, start with the eastern most span and work west. Place the letter E in column 5 before the first span in the sequence. For each span, list a sequence number followed by a slash and the total number of spans. Columns 5, 6, 7, and 8 are completed for each span.

g. Prepare Column 6 and record the type of span construction. Refer to the numbers in (Table 052-196-3008-02), and the diagrams in (Figure 052-196-3008-05) for this information.

Span Type	Number
Truss	1
Girder (including steel multigirder and two girder spans)	2
Beam (including reinforced or prestressed concrete and steel box beam spans)	3
Slab	4
Arch (closed spandrel)	5
Arch (open spandrel)	6
Suspension	7
Floating	8
Swing	9 (specify type in additional information)
Bascule	10 (specify type in additional information)
Vertical lift	11
Other	12 (specify type in additional information)

Table 052-196-3008-02
Span construction types

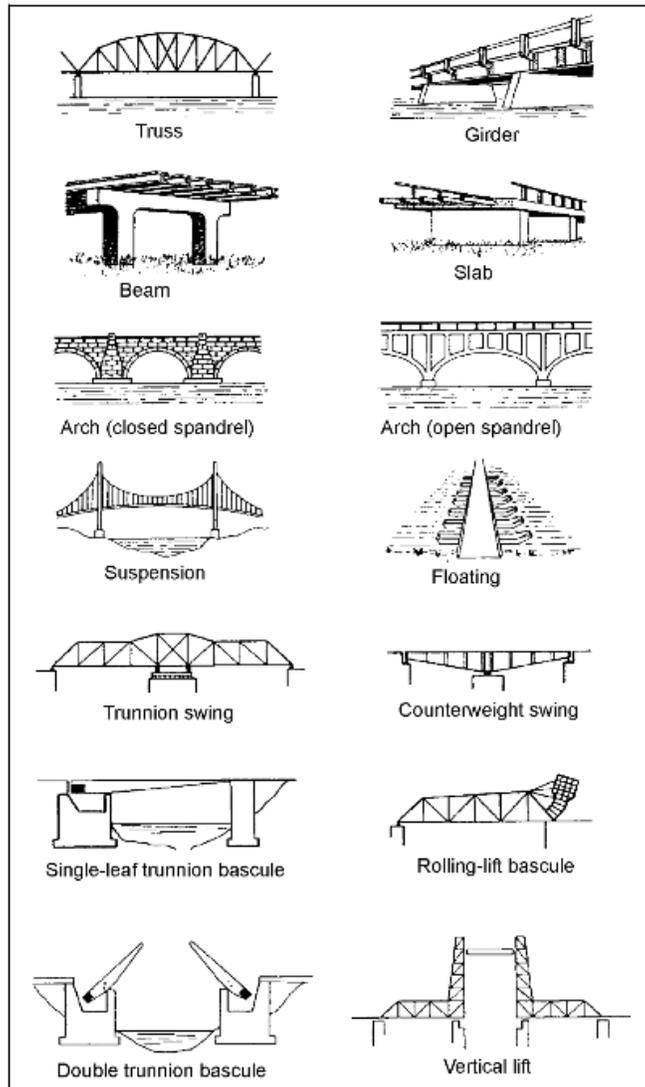


Figure 052-196-3008-05
Typical bridge spans

h. Prepare Column 7 and record the type of construction material as shown in (Table 052-196-3008-03).

<i>Material of Span Construction</i>	<i>Letter Symbol</i>
Steel or other metal	a
Concrete	k
Reinforced concrete	ak
Prestressed concrete	kk
Stone or brick	p
Wood	h
Other (to be specified by name)	o

Table 052-196-3008-03
Construction material

i. Prepare Column 8 and record the span length in meters. This is a center-to-center spacing between bearings. The sum of the span length may not equal the overall length. Spans that are not usable because of damage or destruction are indicated by the pound (#) symbol, placed after the dimension of the span length. Spans that are over water are indicated by placing the letter W after the dimension of the span length as shown in(Figure 052-196-3008-01).

j. Prepare and record Additional bridge Information block.

(1) Record Military Load Class.

(2) Record Overall Length.

(3) Record Traveled Way Width.

(4) Record Vertical Clearance.

(5) Record Bypass Condition.

k. Prepare and record Sketches (Pictures are acceptable) as shown in (Figure 052-196-3008-02, Back). For bridges that present a challenge to reconnaissance elements collecting information and determining a classification, reach back assistance is available through the U.S. Army Corps of Engineers and the Naval Facilities Engineering Command.

(1) Record Side Elevation.

(2) Record Cross Section of Critical Span.

(3) Record Cross Section of Critical Member.

(4) Record Site Plan.

l. Prepare and record Bridge class computation block.

3. Submit Complete DD Form 3011 to Higher Headquarters.

(Asterisks indicates a leader performance step.)

Evaluation Guidance: Score the Soldier GO if all steps are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier scores a NO-GO, show the Soldier what was done incorrectly and how to do it correctly.

Evaluation Preparation: Setup: Tell the Soldier to Conduct a Bridge Reconnaissance on the correct bridge and accurately complete the DD Form 3011 IAW ATP 3-34.81, Engineer Reconnaissance,

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Collected Bridge Reconnaissance Data on DD Form 3011.			
a. Collected detailed technical information on selected bridges through bridge reconnaissance.			
(1) Conducted the bridge reconnaissance as part of a route or road classification or as a separate mission focused on the selected bridge.			
(2) Included a sketch as well as photographs when possible in the bridge reconnaissance report.			
(3) Collected information to be used in determining the bridge load-carrying capacity.			
(4) Estimated resources for repair or upgrade of the bridge.			
(5) Used DD Form 3011, Bridge Reconnaissance Report, to report the information collected from a bridge reconnaissance.			
(6) Showed as much information as possible when sketching the bridge on the backside of DD Form 3011, or included details photographs of critical members.			
b. Ensured the reconnaissance team collected general information and assessed the bridges general condition, paying particular attention to evidence of damage from the following:			
(1) Assessed the bridge for any evidence of Rot.			
(2) Assessed the bridge for any evidence of Rust.			
(3) Assessed the bridge for any evidence of Deterioration.			
(4) Assessed the bridge for any evidence of Combat action.			
c. Ensured to use classification procedures to presume that a bridge was in good condition. If the bridge was in poor condition, the classification obtained from mathematical computations must be reduced according to the classifier's judgment. Researched TM 3-34.22/MCRP 3-17.1B for a complete discussion of bridge classification procedures and signing of a bridge. The bridge assessment provided the basic MLC information necessary for the commander to plan for the use of the bridge.			
d. Collected specific bridge information necessary to fill out the full NATO bridge symbol on a map or overlay. The information necessary for the full bridge symbol included:			
(1) Collected One-way wheeled classification, on the top right.			
(2) Collected Two-way wheeled classification, on the top left.			
(3) Collected Two-way tracked classification, on the middle left.			
(4) Collected One-way tracked classification, on the middle right.			
(5) Collected Assigned serial number, bottom inside circle.			
(6) Collected Traveled-way width, bottom outside circle.			
(7) Collected Overhead clearance, on the outside left.			
(8) Collected Length, on the outside right.			
e. Ensured a bridge serial number was assigned for future reference, and was recorded in the lower portion of the symbol (assigned a number according to the unit SOP). For proper identification, did not duplicate serial numbers within any one map sheet, overlay, or document.			
f. Ensured a telltale or other warning device was placed before the bridge to indicate overhead clearance limitations. A question mark was used to indicate information that was unknown or undetermined and was included as part of the bridge reconnaissance symbol.			
g. Ensured the reconnaissance team were interested in railway bridges that could be used by other vehicles in an emergency. The team conducted a bridge reconnaissance and made an overall assessment of the adaptability of the railway bridge for vehicle traffic indicating use easy or use difficult on the bridge symbol. A railroad bridge was considered easy to adapt for use if it was adapted in less than 4 hours with 35 Soldiers and the appropriate resources.			
2. Prepared a DD Form 3011, Bridge Reconnaissance Report.			
a. Prepared header information.			
(1) Prepared Date block. Date the reconnaissance was conducted.			
(2) Prepared Signature block. Signature of officer or NCO conducting the reconnaissance.			

(3) Prepared To block. Headquarters ordering reconnaissance.			
(4) Prepared From, Name, grade and unit of officer or NCO block conducting the reconnaissance.			
(5) Prepared Maps block. Include country, scale, and sheet numbers or name.			
(6) Prepared Date/Time Group block. Date/time group of when the DD Form 3011, Bridge Reconnaissance Report was signed.			
b. Prepared Column 1 and recorded the assigned serial number. This number matched the serial number used in the bridge symbol of the route classification overlay.			
c. Prepared Column 2 and recorded the 8-digit grid coordinates, with the map identifier, of the actual bridge site.			
d. Prepared Column 3 and recorded the horizontal clearance information in meters. The horizontal clearance was the clear distance between the inside edges of the bridge structure, measured at a height of 0.3 meters above the surface of the traveled way and upwards. The horizontal clearance for truss bridges was measured 1.21 meters above the traveled way. Any horizontal clearance less than the minimum required for the bridge roadway width was underlined. Unlimited clearance was indicated by the infinity (∞) symbol.			
e. Prepared Column 4 and recorded under-bridge clearance, in meters. It was the clear distance between the underside of each span and the surface of the water. The height above the streambed and the height above the estimated normal water level (pertaining to the appropriate bridge type) were included in this column for each span.			
f. Prepared Column 5 and if the bridge was oriented more north to south, started with the northern most span and worked south. Placed the letter N in column 5 before the first span in the sequence. If the bridge was oriented more east than west, started with the eastern most span and worked west. Placed the letter E in column 5 before the first span in the sequence. For each span, listed a sequence number followed by a slash and the total number of spans. Columns 5, 6, 7, and 8 were completed for each span.			
g. Prepared Column 6 and recorded the type of span construction.			
h. Prepared Column 7 and recorded the type of construction material.			
i. Prepared Column 8 and recorded the span length in meters. This was center-to-center spacing between bearings. The sum of the span length may not have equaled the overall length. Spans that were not usable because of damage or destruction were indicated by the pound (#) symbol, placed after the dimension of the span length. Spans that were over water are indicated by placing the letter W after the dimension of the span length.			
j. Prepared Section 9 and recorded additional bridge information block.			
(1) Recorded Military Load Class.			
(2) Recorded Overall Length.			
(3) Recorded Traveled Way Width.			
(4) Recorded Vertical Clearance.			
(5) Recorded Bypass Condition.			
k. Prepared and recorded Sketches.			
(1) Recorded Side Elevation.			
(2) Recorded Cross Section of Critical Span.			
(3) Record Cross Section of Critical Member.			
(4) Recorded Site Plan.			
l. Prepared and recorded Bridge class computation block.			
3. Submitted Completed DD Form 3011 to Higher Headquarters.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	ATP 3-34.81	ENGINEER RECONNAISSANCE	Yes	Yes
	DD Form 3011	BRIDGE RECONNAISSANCE REPORT (Formerly DA Form 1249)	Yes	No
	TM 3-34.22	MILITARY NONSTANDARD FIXED BRIDGING	Yes	No

TADSS : None

Equipment Items (LIN):

LIN	Name
T92446	Truck Utility: Expanded Capacity Up Armored HMMWV 4x4 W/E: M1114
B24592	Bridge: Fixed Rapidly

Material Items (NSN) :

Step ID	NSN	LIN	Title	Qty
	6605-00-151-5337	FG0500	Compass, Magnetic, Unmounted, Top Reading, Lensatic	1
	5210-00-243-2879	V22320	Tape, Measuring, Surveyors, Steel, Four Arm Reel, 5/16 Inch Wide, 300 Feet Long	1

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 the current Environmental Considerations manual and the current GTA Environmental-related Risk Assessment card. FM 3-34.5 has been replaced by ATP 3-34.5"

Safety: In a training environment, leaders must perform a risk assessment in accordance with ATP 5-19, Risk Management. Leaders will complete the current Deliberate Risk Assessment Worksheet in accordance with the TRADOC Safety Officer 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.

Prerequisite Individual Tasks : None

Supporting Individual Tasks :

Task Number	Title	Proponent	Status
052-197-2021	Direct Maintenance of Fixed Bridges	052 - Engineer (Individual)	Approved
052-197-1300	Maintain Fixed Bridges	052 - Engineer (Individual)	Approved
052-196-3150	Conduct a Route Reconnaissance	052 - Engineer (Individual)	Approved

Supported Individual Tasks :

Task Number	Title	Proponent	Status
052-196-4012	Conduct Platoon Reconnaissance Missions	052 - Engineer (Individual)	Approved

Supported Collective Tasks :

Task Number	Title	Proponent	Status
05-2-0410	Conduct Reconnaissance Planning (Company - Platoon)	05 - Engineers (Collective)	Approved
05-3-1020	Perform a Technical Reconnaissance	05 - Engineers (Collective)	Approved

ICTL Data :

ICTL Title	Personnel Type	MOS Data
12C30, Bridge Crewmember, skill level 3	Enlisted	MOS: 12C, Skill Level: SL3
Sapper Leader Course	Enlisted	MOS: 12B, Skill Level: SL4, ASI: S4
12B30, Combat Engineer, Skill Level 3	Enlisted	MOS: 12B, Skill Level: SL3, Duty Pos: ABY
Sapper Leader Course	Enlisted	ASI: S4
Created Ictl from: 12B30, Combat Engineer, Skill Level 3	Enlisted	MOS: 12B, Skill Level: SL3, Duty Pos: ABY