

APPENDIX B

EXAMPLE GUIDE FOR FORMULATING A BASE DEVELOPMENT PLAN

The following extract from USARSTRIKE Operation Plan (OPLAN) 0000 1971 is quoted for reference for base development planners. Beginning with figure B-4 this example follows the format prescribed by change 2 to JCS Pub 3.

1. APPENDIX ( ) TO ANNEX ( ) TO LOGPLAN ( )—CONCEPT OF OPERATION

a. This plan provides for the introduction of Army forces of a joint task force by airborne assault in OPHIR to secure an operating base to accomplish the assigned mission. The forces will prepare for parachute assault and will then deploy to a final staging base and/or the objective area. If the forces deploy to a final staging base, COMUSJTF may decide to commit one company from the assault battalion(s) separately and ahead of the main force, either by airdrop or airland. If the decision is made to airland in the objective area, a company-size force will be landed first, followed by USAF aerial port detachments which are manned and equipped to offload and derig the assault forces.

b. COMUSARFOR will secure Airport Tyonek establish an operating base, and conduct subsequent operations as directed.

(1) Phase I. Pre-assault operations. The USARFOR assault force rapidly deploys from Skwenta Air Force Base through the final staging base. COMUSJTF may airdrop or airland at Airport Tyonek.

(2) Phase II. Assault operations. At D-day, H-hour, USARFOR airdrops or airlands to secure Airport Tyonek and establish an operating base. If an airlanded operation is conducted, a company-size force will precede the main force to secure the airfield. The USAF aerial port detachments will land immediately after the company-size force and will expedite the offloading of the main force.

(3) Phase III. Subsequent operations. COMUSARFOR orders deployment of additional forces of the task organization necessary to accomplish the mission; secures key U.S. and Ophiran installation as directed; opens Port of MEDFRA by D+30.

2. APPENDIX ( ) TO ANNEX ( ) TO LOGPLAN ( )

a. Troop Requirements.

Army forces: Airborne brigade  
support forces  
Transportation terminal com-

b. Force Requirements List. This list is a time-phased arrival list by units and destination of the force. It is summarized as follows:

Destination	Strength	Close
TYONEK	5,058	D+30
MEDFRA	504	D+30

c. Logistics.

(1) Level of supply. A 15-day safety level and a 10-day operating level of supply will be established by D+60.

(2) Medical services. Medical evacuation. A 10-day evacuation policy will be established by D+60.

(3) Maintenance. Only organizational maintenance will be performed in the objective area. Direct support maintenance float will be called forward on order of COMARFOR.

3. SCOPE OF THE BASE DEVELOPMENT PLAN

a. General. The foregoing information determines the scope of the base development plan. In the example quoted, base development will consist of the bases shown in figure B-1.

Base	Location	Strength	Supported force
Operating base	TYONEK	5,058	Airborne brigade
Port	MEDFRA	504	Airborne brigade and port terminal company

Figure B-1. Bases for OPHIR.

The general logistic parameters of the base development plan are contained in their 25-day supply level, 10-day evacuation policy, and the direct exchange maintenance policy.

b. Comment. The following parameters have not been provided:

- (1) Standard of construction.
- (2) Duration of the OPLAN.

These factors are related, i.e., a longer duration of operations is supported by a higher standard of construction. Usually these factors will be indicated in the OPLAN in the following terms:

Logistics planning anticipates sustained operations for a period of 180 days. As the operation develops, the COMUSJTF will continually appraise the tactical situation to keep the BDP in reasonable balance. If there is assurance of a reasonable early termination at, say, D+120, then base development planning and execution should be curtailed to some degree. Conversely, if the tempo of military operations is on an increasing trend, base development activities assume greater importance and may be expanded and expedited accordingly; concurrent planning for projects may go beyond the scope of projects included in this BDP. Construction will be limited to austere and minimum construction necessary to support the operation.

These items are assumptions for this example; austere construction is further defined as standard 2 with selected facilities to standard 3.

#### 4. STATISTICS

OPLAN statistics are required for base development planning and are determined from FM 101-10-1; OPLAN 0000 statistics are shown in figure B-2.

#### 5. REQUIREMENTS

a. General planning factors are direct multipliers of the foregoing statistics that will produce construction requirements for each DOD category code. The calculations for these requirements are shown in figure B-3. The planning factors used in these calculations were developed by the Engineer Strategic Studies Group (ESSG), Office, Chief of Engineers. They are examples only and should be validated before being used.

#### STATISTICS BDP 0000 \*

<i>Item</i>	<i>Bde base</i>	<i>s/A/B Inf Bn</i>	<i>Support force</i>	<i>Port terminal co</i>	<i>Total</i>
<b>Strength</b>	<b>1,664</b>	<b>2,427</b>	<b>967</b>	<b>504</b>	<b>5,562</b>
<b>Aircraft:</b>					
OH-6	6	----	----	----	6
UH-1D	8	----	6	----	14
<b>Wheeled vehicles</b>	<b>348</b>	<b>809</b>	<b>193</b>	<b>100</b>	<b>950</b>
<b>Trailers</b>	<b>91</b>	<b>129</b>	<b>114</b>	<b>62</b>	<b>396</b>
<b>Tracked vehicles</b>	<b>9</b>	----	<b>2</b>	----	<b>11</b>
<b>Howitzer 105-mm</b>	<b>18</b>	----	----	----	<b>18</b>
<b>CONSUMPTION RATE</b>	<b>LB/MAN/DAY *</b>				
Supply class					
I	6.70				
II	7.04				
III	35.89				
IV	4.06				
V	24.00				
VI	4.50				
VII	2.97				
VIII	.30				
IX	3.27				
X	5.90				
<b>TOTAL</b>	<b>94.31</b>				
<b>CARGO</b>	<b>RATE/MAN/DAY *</b>				
Ammunition	24 lb/.012 STON				
POL	5.7 gal/.14 bbl				
Dry	34.42 lb/.017 STON				
Refrigerated	1.21 lb/.0006 STON				
<b>TOTAL</b>	<b>94.31 lb/.047 STON</b>				

\* Summary from the OPLAN and TOE.

\* FM 101-10-1.

\* Consumption rate transformed into standard units of measure for shipping.

**Figure B-2. BDP statistics.**

Number	BOD code	Unit of measure	Planning factor	Force estimate	TYTONK	MEDFZA	Remarks
111	Runway	sq yd	13,400	Each location	13,400	13,400	This provides one C-130 capable air-field runway at each location.
112	Taxiway	sq yd	8,100	Each location	8,100	8,100	
113	Aprons	sq yd	1,375	Per RWA/C (20)	27,500		
		sq yd	4,280	Per C-130	12,840	12,840	Three C-130 parking aprons
121	Fuel disp acft	bbl	1/25 acft	RWA/C (20)	1		
123	Fuel disp ldg veh	bbl	1/50 ldg cft	Land vehicles (950)	17	4	
124	Op fuel stor	gal	5.7 gal/man	Strength 5,562	144,153	14,364	This provides 5 days of storage at each location.
125	Pipeline	mi	Site		75	8	6-inch pipeline
141	Land op bldg	sq ft	100	Per/acft (20)	2,000		
151	Water front piers:						
	Dry cargo	STON	.017	Strength 5,562	-----	96	This is a daily requirement of .133 berths.
	POL	bbl	.14	Strength 5,562	-----	778	This is a daily requirement of .006 berths.
	Ammunition	STON	.012	Strength 5,562	-----	67	This is a daily requirement of .093 berths.
211	Aircraft maintenance	sq ft	4,200	Per aircraft	4,200	-----	This space provides a covered maintenance area for unit maintenance of one aircraft at a time or four to six aircraft per day. Twenty-five percent of the aircraft in maintenance at one time.
214	Tank automotive	sq yd	7.5	Per vehicle (1,375)	10,300	-----	This provides storage space for a maintenance float of 10 percent of the vehicles and trailers.
219	Maintenance post engineer	sq ft	2	Per man	10,000	1,000	
411	Liquid fuel storage	bbl	.14	Per man/day	-----	15,573	This provides 20 days of storage of POL in the area.
421	Ammunition storage	sq ft	.228	Per man/day	-----	25,363	This provides 20 days of storage of ammunition in the area; 5 days of supply is contained in the basic load.
431	Cold storage	cu ft	.23	Per man/day	-----	29,432	This provides 23 days of supply in storage with 2 days on hand in the units.
441	Covered storage	sq ft	.16	Per man/day	-----	20,468	This provides 23 days of supply in storage with 2 days on hand in the units.

Figure B-3. Calculations for base development requirements.

B-4

Number	DOD code	Unit of measure	Planning factor	Force statistic	TYONEK	MEDFRA	Remarks
451	Open storage	sq yd	.03	Per man/day	-----	4,042	This provides 23 days of supply in storage with 2 days on hand in the units.
510	Hospital	bed	.02	Bed/man	111	-----	This factor provides 10 days of hospitalization in the area.
550	Dispensary	sq ft	2,000	Per location not otherwise served	-----	2,000	Dispensaries are provided for isolated locations.
610	Administration	sq ft	6.2	Sq ft/man	31,359	3,124	This included 10 percent additional space for transients at TYONEK.
725	Troop housing	men	-----	Per individual	5,614	504	This provides lights in living quarters and administrative space.
810	Electricity source	kva	.7	Per man	3,930	353	This provides roads between troop camps.
840	Water supply	gal	50	Per man/day	280,700	25,200	Road between TYONEK and MEDFRA to be maintained by Ophiran Government.
850	Roads	mi	.0016	Per man	8.9	.8	
	Road maintenance	mi	75	-----	-----	-----	

Figure B-3. Calculations for base development requirements—continued.

b. Comment. This example is only for an Army force; since the Army has logistic responsibilities for the other Service, extra construction may be required. In this example, the POL projects include Air Force requirements.

(1) POL delivery. TYONEK is 75 miles by road from MEDFRA. The road is two-way bituminous surface with a capacity of 3,800 STON. Military traffic will be 262 STON per day to support this brigade. The USAF force located at TYONEK is one tactical fighter squadron (TFS) and three tactical airlift squadrons (TAS). The daily POL requirement for this force is—

$$\begin{aligned} \text{TFS 24 aircraft at 2,000 gal} &= 148,000 \\ \text{TAS 54 aircraft at 9,000 gal} &= 486,000 \\ \hline &534,000 \text{ gal} = 1,655 \text{ STON/day} \end{aligned}$$

Additional daily supply tonnage for the air unit is 100 STON.<sup>2</sup> The total military tonnage is 2,017 STON/day over this road. The total POL load is 1,755 STON/day, which requires 216 5-ton truck tractors and 5,000-gallon trailer trips daily. This indicates that a pipeline between two locations is desirable.

(2) The correct basic Army requirements for some facilities may not be identified. An example is runway length. Army helicopters require a 450-foot by 75-foot runway;<sup>3</sup> however, major installations must be capable of being resupplied by air. In this case, the port at MEDFRA and the operating base at TYONEK must be capable of receiving Air Force aircraft for resupply activities. If only emergency supplies (class I, III, V) are considered this requirement will be—

Class of supply	Daily tonnage
I	18.6
III	99.8
V	67.0
	185.4 STON

Air Force aircraft are assumed to be C—130 which require 3,000-foot by 75-foot runways. In addition, parking aprons for these aircraft must be provided for unloading the 185 STON/day. This is 12 C—130 loads, which at a 6-hour turnaround would require three cargo apron spaces at TYONEK. The force at MEDFRA would require less than one cargo apron.

## 6. REQUIREMENTS LESS ASSETS EQUALS CONSTRUCTION

a. The base development construction that will be necessary to support the OPLAN must be determined by comparison with existing facilities. The two areas of OPHIR that are the objectives of the OPLAN have some facilities that will be available to support military operations. TYONEK has an unused Ophir Army Station and a civil airport that have facilities suitable for use by the U.S. Army units. MEDFRA is a modern seaport with sufficient capacity to support this level of military operations. Details of these two locations are included in figures B-4 and B-5. (These are modified reproductions of sec I, tab A of JCS Pub 3 format for base development plans.)

b. The detailed tabulation of requirements, assets, and deficiencies is shown in figures B-6 and B-7. (These are from sec II, tab of A of JCS Pub 3.)

c. The construction projects from the above analysis are shown in figures B-8 and B-9. (These are from sec III, tab A of the JCS format.) Here, for the first time, the arrival times of the operating forces influence the BDP. In the case of OPLAN 0000, all the operating forces arrive prior to any construction work. Construction will start as soon as the engineer units arrive. This example has one engineer construction company available at D+30 and the complete battalion at D+90. Initial projects will be those with the highest priority to support the tactical force. Materials for the first projects must be available at the same time as the construction force begins work. The dates when the facilities are required in this example are as early as the construction force and material are available, consistent with their priorities. The time phase is the time when construction starts and it is consistent with the available labor force.

d. Comment. The pipeline between MEDFRA and TYONEK is included in the Tyonek section III for convenience. It could be a separate report.

## 7. MATERIEL DEFICIENCIES

The construction requirements may generate a need for special equipment or large volumes of common

<sup>1</sup> OPLAN.  
<sup>2</sup> TACM 400-12.  
<sup>3</sup> TM 5-803-4.

equipment. For this base development plan, there are two items of special equipment required; these are shown in figure B-10. (This fig. is in the form of sec IV, tab A.)

8. INTEGRATED TIME PHASED LIST OF CONSTRUCTION PROJECTS

This is tab B of the JCS format and represents an agreement on priorities of construction projects between the service components for each location. Figure B-11 is an example for the Ophir Operation. In general, the priorities O, I, D, and the location are significant in determining the overall priority.

9. CONSOLIDATED CONSTRUCTION MATERIAL REQUIREMENTS

The construction projects in figures B-8 and B-9 are summarized and aggregated by time periods to provide shipping information in figure B-12. (This is from tab C of the JCS format.) The values of STON and MTON and the costs and man-hours of figures B-8 and B-9 are from the individual facilities that are listed in the Army Facilities Components System, TM 5-301, TM 5-302, TM 5-303.

10. CONSTRUCTION FORCE ANALYSIS

Figure B-13 (JCS tab D) shows the analysis of the construction force. This figure is developed from figure B-11.

11. COST ESTIMATE

The cost estimate is developed from figures B-8, B-9, and B-12 and is shown in figure B-14.

*Note.* The following are examples of how to fill in the information required by the tabs in Change 2 to JCS Pub 3.

DATE: 1971  
HEADQUARTERS  
USARSTRIKE

ANNEX A TO BD PLAN 0000  
NAME OF BASE: TYONEK, U.S. ARMY  
1. ( ) GENERAL INFORMATION:  
NEAREST CITY: TYONEK  
LOCATION:  
LATITUDE 76°0'N  
LONGITUDE 66°30'W  
LATITUDE 76°0'N  
2. ( ) PRINCIPAL FUNCTION: Airbase and support area.  
3. ( ) SCOPE:  

	REQUIRED	PRESENT
ACREAGE	2,940	8,425
DOLLAR VALUE		
MILITARY OFFICERS	500	
MILITARY ENLISTED	5,008	
U.S. CIVILIANS		
NON-U.S. CIVILIANS	----	390

  
4. ( ) NARRATIVE DESCRIPTION: The base at TYONEK will support a brigade, a tactical fighter squadron, and three airlift quadrons. This is the major supply base for the surface line of communication. The base will be developed in three areas: The civil airfield, the Ophiran Army area (for the initial hospital), and a supply cantonment area.

Figure B-4. Base summary information—TYONEK.

DATE: 1971  
HEADQUARTERS  
USARSTRIKE

**ANNEX A TO BD PLAN 7843**

**NAME OF BASE: MEDFRA**

**1. ( ) GENERAL INFORMATION:**

NEAREST CITY: MEDFRA

COUNTRY: OPHIR      COMPLEX: MEDFRA  
RIGHTS:                      STATUS:

LOCATION:  
LATITUDE 76°10'N

LONGITUDE 67°0'W

**2. ( ) PRINCIPAL FUNCTION: Port and storage.**

**3. ( ) SCOPE:**

**REQUIRED**

**PRESENT**

ACREAGE

1,200

none

DOLLAR VALUE

MILITARY OFFICERS

50

MILITARY ENLISTED

454

U.S. CIVILIANS

NON-U.S. CIVILIANS

**4. ( ) NARRATIVE DESCRIPTION:** MEDFRA is a civilian port, the largest in OPHIR. General military forces agreement of 1953 permits U.S. ships free entry as required into Ophiran ports. The base is planned as a port complex, with a logistic airfield. The majority of the supplies will move directly to TYONEK by truck. Storage at the port is planned for 2 days. The POL line to TYONEK would utilize existing civilian tankage for the necessary port terminal.

*Figure B-5. Base summary information—MEDFRA.*

ANNEX A TO BD PLAN 0000  
ASSETS—NAME OF BASE TYONEK

DOD cat	Description	Unit of measure	Quantity required	Quantity assets	Quantity deficiency	Remarks
110	Airfield pavement	sq yd	13,400	137,160	0	
111	Runway	sq yd	8,100	50,000	0	
112	Taxiway	sq yd	40,300	144,600	0	
113	Apron					
120	Liquid fueling					
121	Aircraft	bbl	1	0	1	
123	Land vehicle	bbl	17	0	17	
124	Operational fuel storage	bbl	3,600	0	3,600	
125	POL pipeline	mi	75	0	75	6-inch line required.
140	Land operations					
	Land operations buildings	sq ft	2,000	15,000	0	Utilize civil airfield facilities.
210	Maintenance facilities					
211	Aircraft	sq ft	4,200	11,000	0	
214	Tank automotive	sq ft	10,300	24,000	0	Hardstand only.
219	Post engineer	sq ft	10,000		10,000	
500	Hospital	bed	110	100	10	No construction is planned for this deficiency.
	Hospital buildings					
600	Administrative					
	Administrative buildings	sq ft	31,400	20,000	11,400	
725	Housing					
	Troop housing emerg	men	5,614	1,500	4,114	500-man transient camp included.
800	Utilities					
811	Electricity source	kva	3,900	0	3,900	
841	Water supply and storage	gal/day	230,000	2,100,000		
851	Roads	mi	9	2	7	Intertroop camp roads.
900	Land	acres	2,940	0	2,940	

Figure B-6. Base requirements, assets, and deficiencies—TYONEK.



HEADQUARTERS: USARSTRIKE  
DATE: 1971

ANNEX A TO BD PLAN 0000  
ASSETS—NAME OF BASE MEDFRA

DOD no.	Description	Unit of measure	Quantity required	Quantity assets	Quantity deficiency	Remarks
110	Airfield pavement					
111	Runway	sq yd	13,400	0	13,400	
112	Taxiway	sq yd	8,100	0	8,100	
113	Apron	sq yd	12,800	0	12,800	
120	Liquid fueling					
123	Land vehicle	bbl	4	0	4	
124	Operational fuel storage	bbl	360	0	360	
150	Water front					
151	Piers	berth	2 (1 POL)	10 (2 POL)	0	
210	Maintenance facilities					
219	Post engineer	sq ft	1,000	0	1,000	
400	Supply					
411	Liquid fuel storage	bbl	15,600	69,500	0	
421	Ammunition storage	sq ft	25,000	0	25,000	
431	Cold storage	sq ft	29,500	74,000	0	
441	Storage covered	sq ft	20,500	0	20,500	
451	Storage open	sq ft	4,000	0	4,000	
500	Hospital					
550	Dispensary	sq ft	2,000	0	2,000	
600	Administrative					
610	Administrative buildings	sq ft	3,000	3,700	0	
700	Housing					
725	Troop housing emerg	men	504	0	504	
800	Utilities					
811	Electricity source	kva	353	7,300	0	
841	Water supply	gal/day	25,000	See remarks	0	
851	Roads	mi	1	0	1	
900	Land	acre	1,200	0	1,200	

Source estimated to be adequate.

Figure B-7. Base requirements, assets, and deficiencies—MEDFRA.

HEADQUARTERS: USARSTRIKE  
DATE: 1971

OPLAN: USARSTRIKE 0000  
NAME OF BASE: TYONEK  
PLANNING AGENT: USARSTRIKE

Proj no	Using Sec	Op pri code	Time phase	DOD cat	Description	Qty	Unit of meas	Man- hours	Date for	Cost (\$000)	Const by	Remarks
1	A	O	D+30	121	Aircraft refueling	1	bbl	10	D+30	1	Trp	
2	A	O	D+30	123	Land vehicle refueling	17	bbl	170	D+30	17	Trp	
3	A	O	D+30	124	Op fuel storage	3,600	bbl	120	D+60	57	Trp	
4	AF	O	D+90	125	Pipeline	75	mi	53,000	D+180	963	Trp	
5	A	I	D+150	219	Post engr shop	10,000	sq ft	3,100	D+180	90	Trp	
6	A	D	D+150	610	Administration	11,400	sq ft	7,400	D+180	30	Trp	
7	A	D	D+90	725	Troop camp	4,100	men	115,300	D+180	527	Trp	
8	A	D	D+90	811	Electrical power	3,900	kva	3,600	D+180	482	Trp	
9	A	D	D+90	851	Roads	7	mi	82,500	D+180	21	Trp	

Figure B-8. Base construction projects—TYONEK.

HEADQUARTERS: USARSTRIKE  
DATE: 1971

OPLAN: USARSTRIKE 0000  
NAME OF BASE: MEDFRA  
PLANNING AGENT: USARSTRIKE

Proj no	Using Sec	Op pri code	Time phase	DOD cat	Description	Qty	Unit of meas	Man- hours	Date for	Cost (\$000)	Const by	Remarks
1	AF	O	D+60	111	Runways	13,400	sq yd	783	D+90	673	Trp*	
2	AF	O	D+60	112	Taxiway	8,100	sq yd	473	D+90	406	Trp	
3	AF	O	D+60	113	Approach	12,800	sq yd	748	D+90	643	Trp	
4	A	O	D+60	123	Liquid refueling land vehicle	4	bbl	40	D+90	4	Trp	
5	A	O	D+60	124	Operational fuel storage	360	bbl	12	D+90	6	Trp	
6	A	O	D+150	219	Post engineer shop	1,000	sq ft	310	D+180	9	Trp	
7	A	O	D+30	421	Ammo storage	25,000	sq ft	17,500	D+90	4	Trp	
8	A	O	D+30	441	Covered storage	20,500	sq ft	6,000	D+90	57	Trp	
9	A	O	D+30	451	Open storage	4,000	sq ft	2,400	D+90	2	Trp	
10	A	O	D+150	550	Dispensary	2,000	sq ft	1,500	D+180	4	Trp	
11	A	D	D+150	725	Troop camp	500	men	1,400	D+180	66	Trp	
12	A	D	D+150	851	Roads	1	mi	9,000	D+180	3	Trp	

Figure B-9. Base construction projects—MEDFRA.

**HEADQUARTERS: USARSTRIKE**  
**DATE: 1971**

**OPLAN: USARSTRIKE 0000**

Proj no	Material/equipment identification	Quantity	Unit of meas	Time period for	Cost (\$000)	Remarks
4	Base TYONEK POL pipeline	75	mi	D+30	963	6-inch pipeline
1	Base MEDFRA Runway	13,400	sq yd	D+30	673	Expedient airfield mat required for projects 1, 2, 3
2	Taxiway	8,100	sq yd	D+30	406	
3	Apron	12,800	sq yd	D+30	643	

*Figure B-10. Base construction material deficiencies.*

**HEADQUARTERS: USARSTRIKE**  
**DATE: 1971**

**OPLAN:**

Time-phase and	Name of base or location	Proj no	Using Svc	Op pri	DOD cat	Description	Qty	Unit of meas	Man-hours	Date for	Cost (\$000)	Cost by	Remarks
D+30	TYONEK	1	A	O	121	Aircraft refueling	1	bbl	10	D+30	1	Trp	
		2	A	O	123	Land vehicles refueling	17	bbl	170	D+30	17	Trp	
		3	A	O	124	Operational fuel storage	3,600	bbl	120	D+60	57	Trp	
	MEDFRA	7	A	O	421	Ammunition storage	25,000	sq ft	17,500	D+90	4	Trp	
		8	A	O	441	Covered storage	20,500	sq ft	6,000	D+90	57	Trp	
		9	A	O	451	Open storage	4,000	sq yd	2,400	D+90	2	Trp	
D+60	MEDFRA	1	A	O	111	Runways	13,400	sq yd	783	D+90	673	Trp	
		2	A	O	112	Taxiway	8,100	sq yd	473	D+90	406	Trp	
		3	A	O	113	Aprons	12,800	sq yd	748	D+90	643	Trp	
		4	A	O	123	Liquid refueling land vehicles	4	bbl	40	D+90	4	Trp	
		5	A	O	124	Operational fuel storage	360	bbl	12	D+90	6	Trp	
D+90	TYONEK	4	A	O	125	Pipeline	75	mi	53,000	D+180	963	Trp	
		6	D	O	610	Administration	11,400	sq ft	7,400	D+180	30	Trp	
		7	D	O	725	Troop camp	4,100	men	115,300	D+180	527	Trp	
		8	D	O	811	Electrical power	3,900	KVA	3,600	D+180	482	Trp	
		9	D	O	851	Roads	9	mi	82,500	D+180	21	Trp	
D+180	MEDFRA	10	A	D	550	Dispensary	2,000	sq ft	1,500	D+180	4	Trp	
		11	A	D	725	Troop camp	500	men	14,000	D+180	66	Trp	
		12	A	D	851	Roads	1	mi	9,000	D+180	3	Trp	
		6	A	I	219	Post engineer shop	1,000	sq ft	310	D+180	9	Trp	
	TYONEK	5	A	I	219	Post engineer shop	10,000	sq ft	3,100	D+180	90	Trp	

*Figure B-11. Integrated time-phased listing of construction projects.*

HEADQUARTERS: USARSTRIKE  
DATE: 1971

OPLAN: USARSTRIKE 0000

Time period	See map for zone	Material/equipment identification	No. req.	Unit of meas.	STON	MTON	Remarks
D+30	A	Aircraft refueling	1	bbl	0.4	3.0	
		Land vehicle refueling	17	bbl	6.8	51.0	
		Operational fuel store	3,600	bbl	21.6	42.9	
		Ammunition storage	25,000	sq ft	13.5	13.5	
		Covered storage	20,500	sq ft	94.0	93.0	
		Open storage	4,500	sq yd	7.2	6.3	
D+60	A				143.5	209.7	
		Airfield paving	34,300	sq yd	720.6	1,234.0	
		Land vehicle refueling	4	bbl	1.6	12.0	
D+90	A	Operational fuel store	360	bbl	2.7	4.3	
					723.8	1,250.3	
		Pipeline	75	mi	2,519.0	3,873.0	
		Administration	11,400	sq ft	80.0	118.0	
		Troop camp	4,100	men	1,209.0	1,713.0	
		Electrical power	3,900	kva	834.0	1,686.0	
D+150	A	Roads	9	mi	89.0	63.0	
					4,731.0	7,453.0	
		Dispensary	2,000	sq ft	220.0	31.0	
		Troop camp	500	men	150.0	215.0	
		Roads	1	mi	9.9	7.0	
		Shops	1,100	sq ft	105.0	110.0	
					286.0	363.0	

Figure B-12. Consolidated construction material requirements.

Time period	Location	Man-hours	Unit
<b>Requirements:</b>			
D+30-D+60	TYONEK	300	
	MEDFRA	25,900	
D+60-D+90	MEDFRA	2,056	
D+90-D+120	TYONEK	98,000	
D+120-D+150	TYONEK	98,000	
D+150-D+180	TYONEK	98,300	
	MEDFRA	24,800	
<b>Available:</b>			
D+30-D+60	TYONEK	36,000	1 engr const co
	MEDFRA		
D+60-D+90	MEDFRA	36,000	1 engr const co
D+90-D+120	TYONEK	108,000	1 engr const battalion
D+120-D+150	TYONEK	108,000	1 engr const battalion
D+150-D+180	TYONEK	108,000	1 engr const battalion
	MEDFRA		
<b>Deficiency:</b>			
D+30-D+60	TYONEK	0	
	MEDFRA	0	
D+60-D+90	MEDFRA	0	
D+90-D+120	TYONEK	0	
D+120-D+150	TYONEK	0	
D+150-D+180	TYONEK	0	
	MEDFRA	15,100	

Remarks: The D+150 work at MEDFRA can be started at D+90 and completed on time with the extra effort available (10,000 man-hours time period for D+90 to D+180).

*Figure B-13. Construction force analysis.*

Cost of material	\$4,061,000.00 <sup>a</sup>
Cost of labor	( <sup>b</sup> )
Shipping cost	
5,883 STON at \$130	= 765,000.00
<b>TOTAL</b>	<b>\$4,826,000.00</b>

<sup>a</sup> The material costs are from the Army Facilities Components System.

<sup>b</sup> Labor costs for troop construction are not a cost for base development.

*Figure B-14. Cost estimate.*

	<i>Format heading</i>	<i>Data element</i>	<i>Descriptions</i>	<i>Remarks</i>
1.	Requirements:			
	Time period	Time period	Indicates approximate time facility maintenance forces are required at facility.	Described in days, appropriate time period related to D-day (+ or -).
	Location	Location	Identifies the base or location where facilities maintenance personnel are/or should be assigned.	GEOLA code if different from base.
	Army	Army	Identifies number and type of Army facilities maintenance personnel.	
	Navy	Navy	Identifies number and type of Navy facilities maintenance personnel.	
	Air Force	Air Force	Identifies number and type of AF facilities maintenance personnel.	
	Local aug	Local aug	Identifies number of local nationals to augment U.S. maintenance personnel listed in preceding column.	
	Contract	Contract	Identifies number of contract facilities maintenance personnel.	Number of personnel identified: U-U.S.; L-Local; T-Third Country.
2.	Available	(Same data elements as above)		
3.	Differences	(Same data elements as above)		
4.	Remarks	Remarks	Provides for explanation of data when required.	

*Figure B-15. Real property maintenance forces format.*