محاضرات المهندس / نصرت حبيب

والمهندسة : أمل اسماعيل

Project Planning & Control Definitions

A Project

1- A Project is Finite

- has a start date.
- has an End date.
- goals

2- A Project is Complex

- The operations are a mixture of series & paraller activities.
- The operations needs human skills.
- The need of resources, materials...

3- A Project is Homogeneous.

- The individual activities can definitely be identified as belonging to it.
- few activities depend upon the sorroune

4- A Project is Non-Repetative.

- One time effort → Unique.

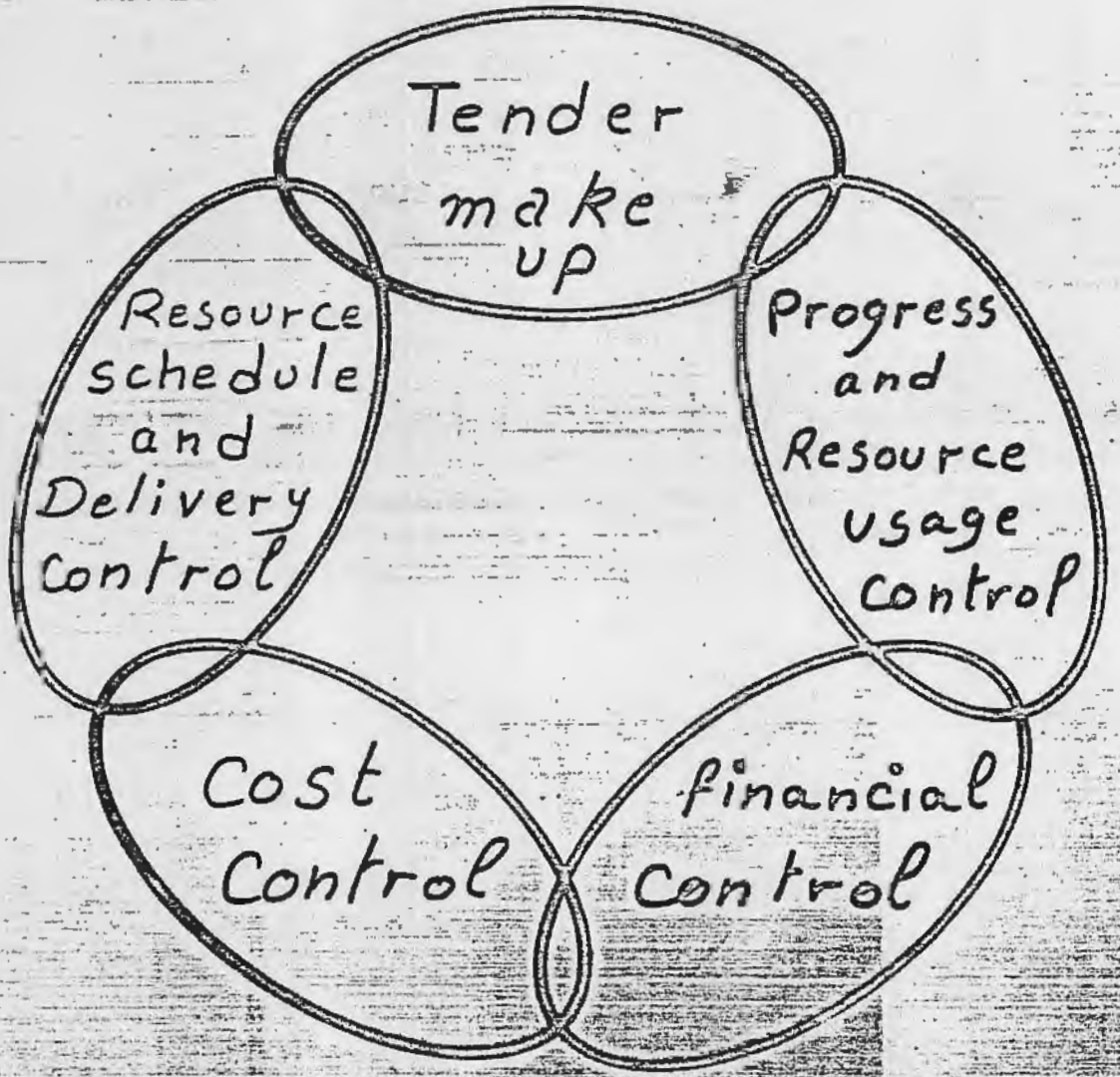
The major stages of a project

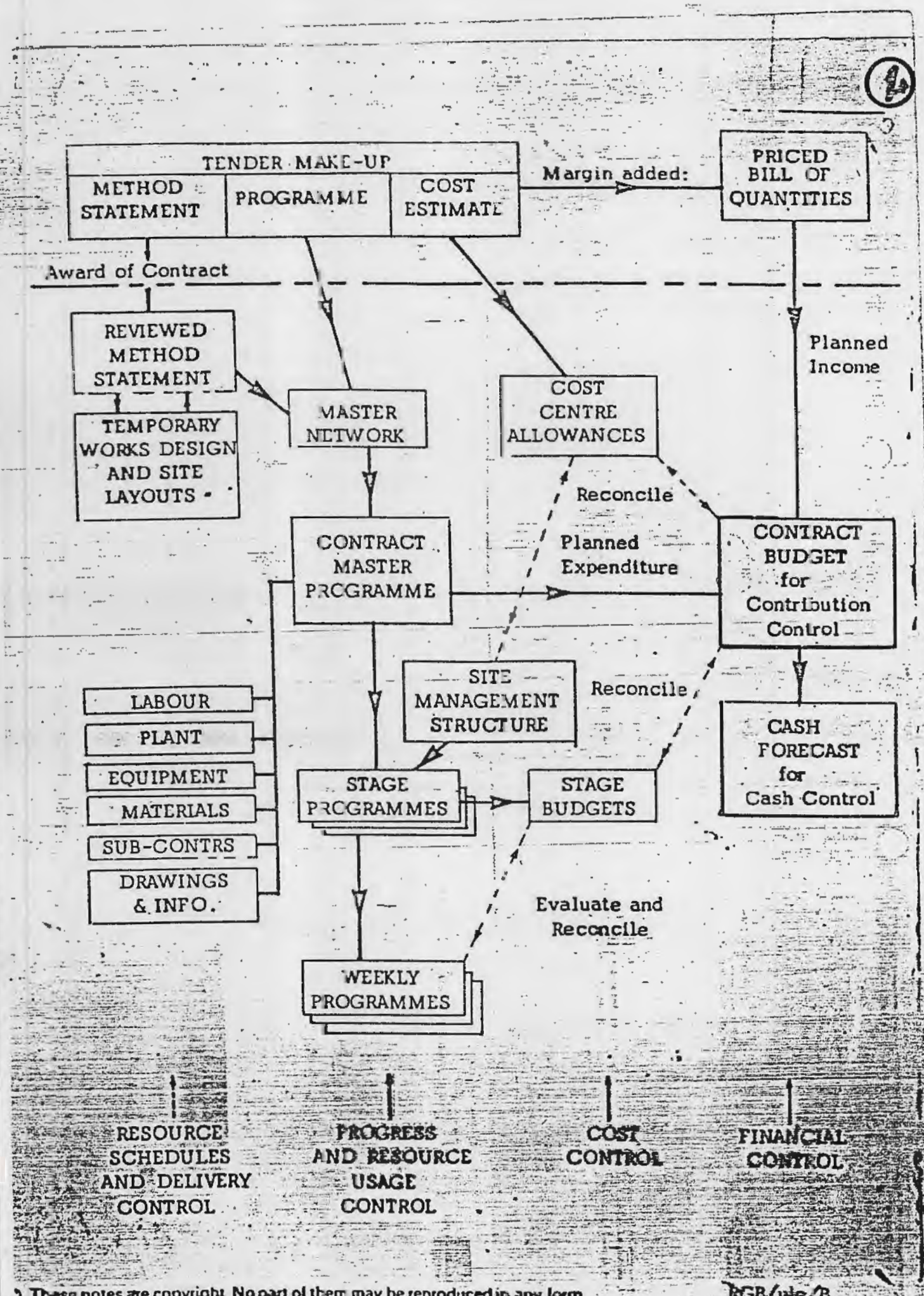
Stage / Activities	1 Briefing stage	2 Designing stage	3 Construct. stage	4 Commiss. stage
nctional spects	→	→	→	→
ation & te pects	→	→	→	→
struction pects	→	→	→	→
rational pects	→	→	→	→

To reach a conclusion on each aspect, is preferable to follow a formal

survey → analysis → recommendations process.

Features of framework for Project Planning & Control





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RGB/ple/B

N.W 1
2

When any Contract is aworded the following information are known:-

1- the Price.

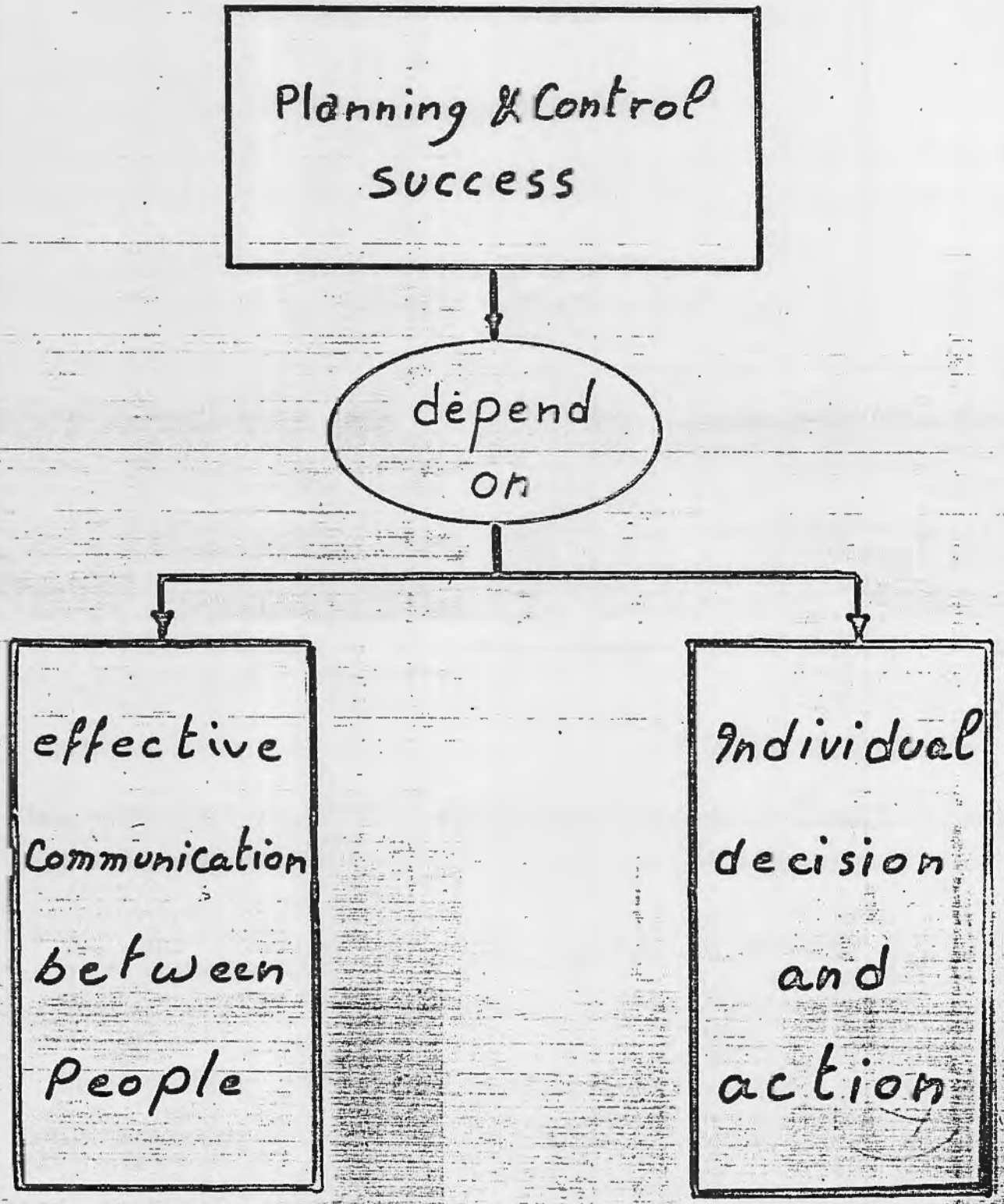
2- The agreed Time.

3- The Cost [estimated].

4- The Contribution :-

which is:-

Contract Price — Contract Cost


Planning & Control success
depend on
effective Communication between People
Individual decision and action

Planning is

:tting Clear objectives
- what
- How
- when
- who

Measuring performance against these objectives

Taking action as a result of Comparison

Stages Of Planning

stage I: Network Analysis
" Branch T.O Planning Dep. "

stage II: Master programme.
" Branch T.O Planning Dep. "

stage III: stage programme.
" site T.O "

stage III: weekly Programme.
" site T.O. + site Eng.

stage IV: Daily check.
" site Eng. "

Weekly Programme needs To.

- list of jobs that need To or Could be done

  1- Jobs behind Programme.

  2- Jobs to be Cont. according to Programme.

  3- Work to be corrected.

  4- Temperary Works.

  5- Hospital jobs.

3- list of Resources

  1- Plants

  2- Equuipments

  3- labours

  4- Sub-Contractors

  5- ———

  6- ———

Financial Planning & Control

1- Budget

Income Entitlements

Expenditure Commitments

2- Cash Forcast

Cash Receipt

Cash payment

3- Follow up

Actual against

Planned

Cost Planning & Control

[redacted]

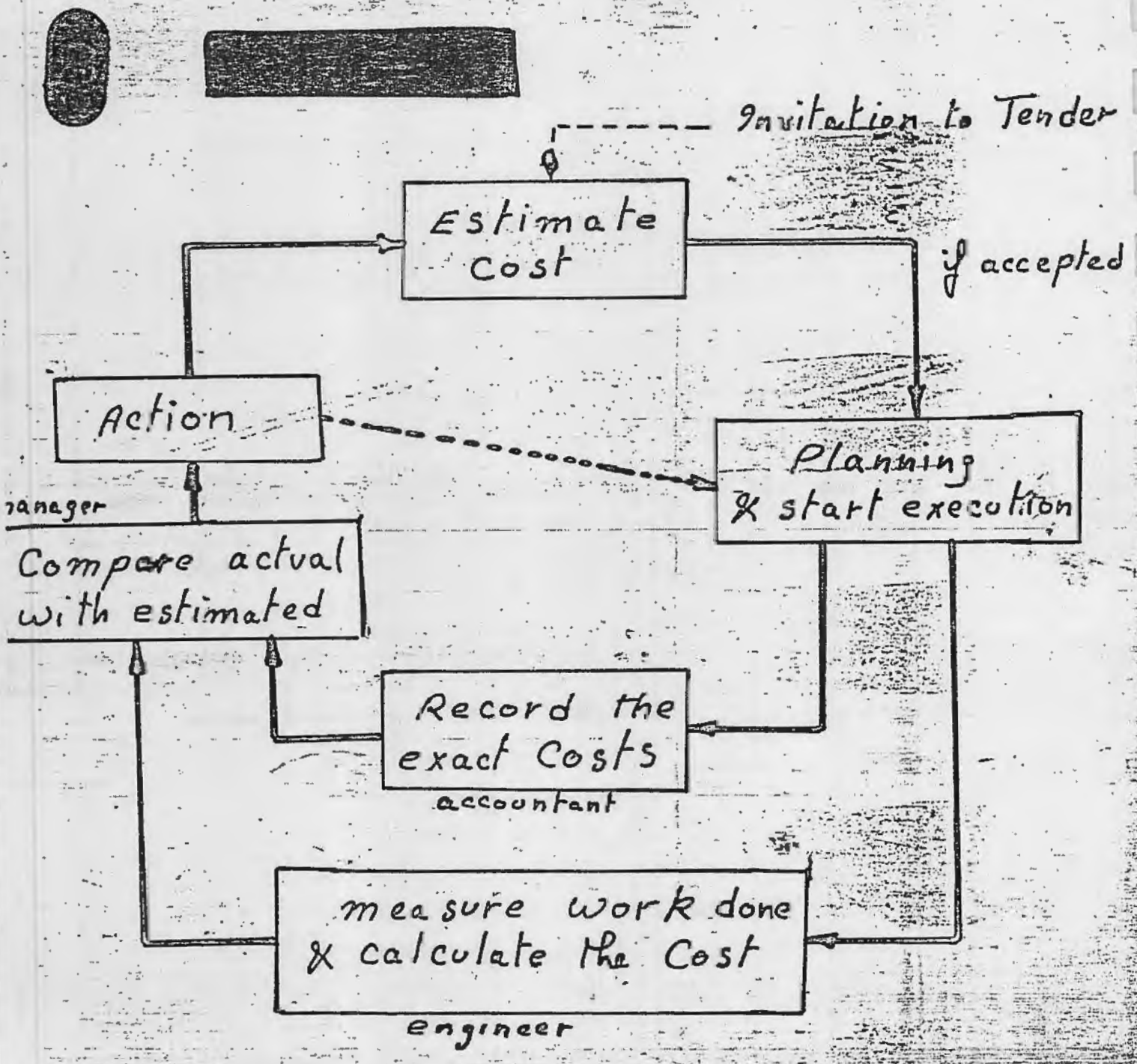
Contract Control

1- Budget
   - Income Entitlements
   - Expenditure Commitments

2- Cash Forecast
   - Cash Receipts
   - Cash Payments

3- Cost statement
   - Actual Costs
   - planned Costs - (estimated)

Cost Planning & Control



Management is Required to

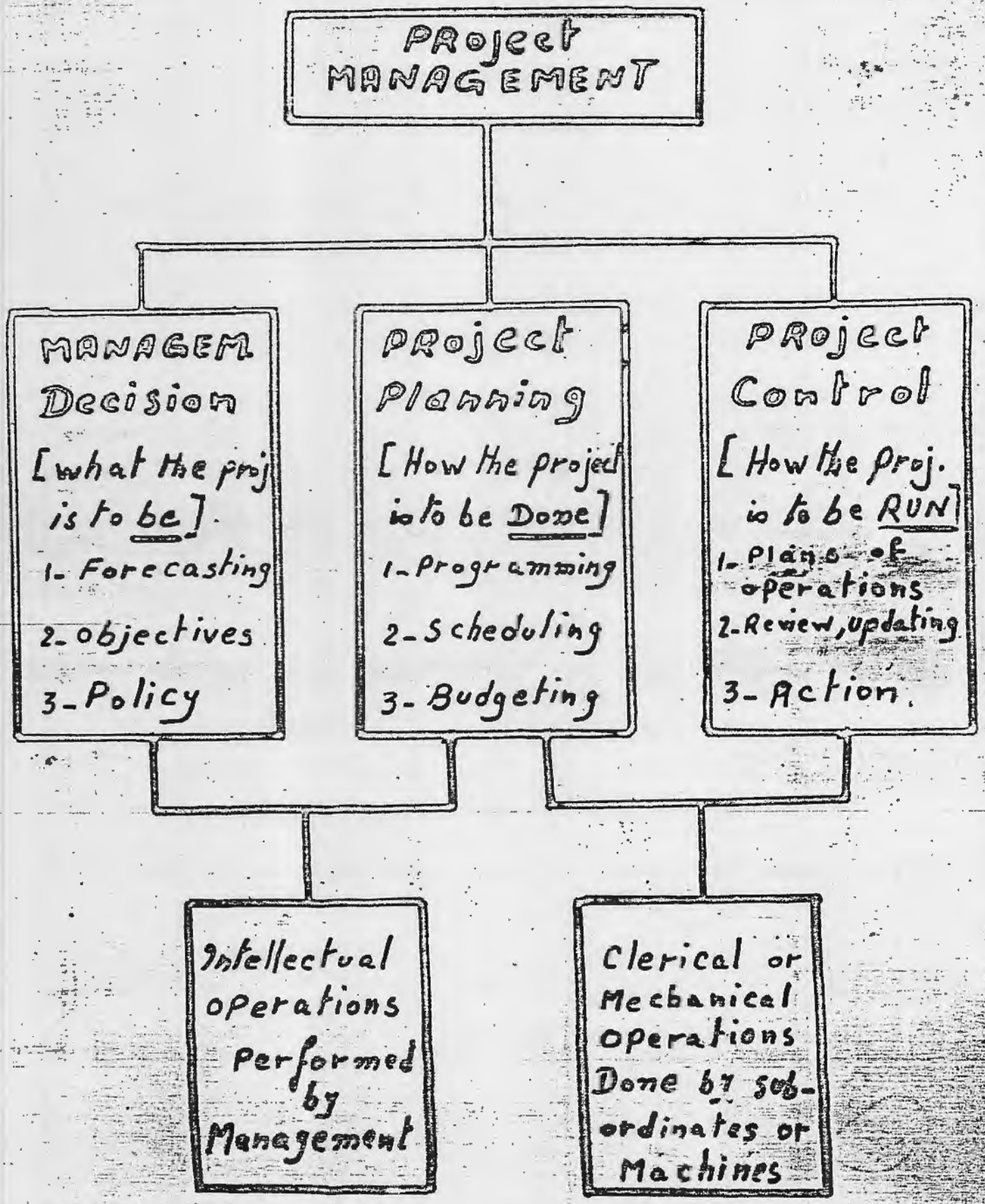
- Complete the work within agreed time
  Limited Cost
  standard Quality
- Achieve the budgeted contribution
3- Minimizing financial Commitments and achieving smooth progress.

4- Obtaining full entitlement certifications as soon as posible.

5- Answering the basic question:-
   How much am I going to earn.
   and
   How much will I spend in earning it

6- Make sure that the project is Solvent and not only profitable.

The Nature of Project Management



C.A

* Definitions. *

- **C.M.-5 :**
  Construction Management, version 5.

- **C.P.M. :**
  Critical Path Method of Project Management

- **Activity :**
  Any portion of a project that :
  1 * is homogeneous
  2 * consumes time and resources.
  3 * has a definite start and finish.

- **Duration:**
  The time needed to complete an activity.

- **Connector:**
  line indicating time relationship between the start and finish of activities.

- **Lag :**
  The amount of time in project days between the start and finish of connector.

- **Logic NetWork:**
  The order in which activities are to be executed on the project.

- **Milestone:**
  Any event that has special significance to the project planner.

- **Input Sheets:**
  Forms on which input data is recorded.

- **Edit:**
  To change any input informations.

- **Resource library:**
  The collection or pool of resources for activities.

- **Ranking:**
  The process of determining the rank for each activity in the NetWork.

- **Report:**
  A print out of certain date.

— * * * * * —

CM-5 is a tool that provides the capability to plan and control a project using N.W. techn.

The Basic Steps in proj. planning & control include:

* Input : Activities - Costs - Resources - Durations - connectors & lags.
* Display: Input may be reviewed on screen and any errors detected.
* Edit : N.W. may be reviewed and checked.
* Processing : Computation of C.P.M. schedules and production of Cost and Resources calendar.
* Print : Reports may be printed by the syste
* Save : A target N.W. can be saved on diskettes.

Important Features of CM-5:

- **Activity:**
- 5 digit activity number.
- 5 character activity code.

- **Calender:**
- Unlimited number of non-work days and holidays.
- Calender until 1999.
- Output with dates or days.
- 1-7 day work week, beginning any day of the week for each activity.

- **Data procedures:**
- Allowing review of data before processing of printout.
- Extensive edit facilities.

- Updating:
- Actual starts and finishes.
- Remaining durations and percent complete.

- Cost and Resource processor:
- 99 resources for a project; max. of 6 per activity
- 6 digit resource number.
- Daily, weekly or monthly plots and reports.
- Critical, early, and late schedule plots and reports.
- Progress payments.
- Percent complete.
- Job costing by resources.

&

Wide Selection of Different Types of Reports.

Summary Network Statistics.

- Maximum length of project in days: .....
- Maximum number of activities. .....
- " " of resources. .....
- " " of milestones. .....
- " " of Connectors. .....

* * * *

- Title of Project .....
- Title of NetWork .....
- Any errors in the above ? .....
- Are you sure ? .....

C.4

- Date Format: 1 * DD/MM/YY

  2 * MM/DD/YY

- Data Supplied by : .....
  - Operated by : .....
  - Approved by : .....

- 1 * PDM. 2 * ADM.

- Enter Holidays ....

  ....

- Any errors in the above ? .....
- Are you sure ? .....

Functions Available :

1 * Inputs to NetWork.

2 * Edit data on NetWork.

3 * Process NetWork.

4 * Display data on Screen.

5 * Print out Reports.

6 * Reprint previously stored reports.

7 * Print Input Forms.

0 * End Program.

* * * * *

Enter Function Desired .....

1 * Inputs to Network.

1 * Resources.

2 * Activities.

3 * Milestones.

4 * Connectors.

• Enter Function Desired: .....

1 * Resources :

* Description : .....
* Code : .....
* Unit of Measure : .....
* Unit Cost : .....
* Max. units available / day : .....
* Resource type : .....

- Any errors in the above ? .....
- Are you sure ? .....

2* Activities :

- Do you want to enter Cost ? ....

* Activity number : .....
* Activity code : .....
* Activity Description : .....
* Estimated duration : .....
* Estimated Cost : .....

- Any errors in the above ? ....
- Are you sure ? .....

Selections of attributes can be made repeatedly, narrowing down the selected information to the desired level.

```
*****************************************************************
*                    COMMAND NUMBER 2                           *
*   SELECTION AVAILABLE BY ACTIVITY ATTRIBUTES:                 *
*                                                               *
*   1. ACTIVITY NUMBER                 16. LATE START           *
*   2. ESTIMATED DURATION              17. LATE FINISH          *
*   3. LATEST REV. EST. DURATION       18. RANGE OF DAYS        *
*   4. REMAINING DURATION              19. ACTIVITY STATUS      *
*   5. ESTIMATED COST                  20.                      *
*   6. ACTUAL COST                     21. % COMPLETE (TIME)    *
*   7. EST. COST TO COMPLETE           22. % COMPLETE (COST)    *
*   8. WORK IN PLACE                   23. % COMPLETE (PAYMENTS) *
*   9. OBLIGATION                      24. DEVIATION % (TIME)   *
*  10. PAYMENTS MADE                   25. DEVIATION % (COST)   *
*  11. ACTIVITY CODE                   26. DEVIATION (COST)     *
*  12. FREE FLOAT                      27.                      *
*  13. TOTAL FLOAT                     28.                      *
*  14. EARLY START                     29. EST. RESOURCE TYPE   *
*  15. EARLY FINISH                    30. ACT. RESOURCE TYPE   *
*                                                               *
*  ENTER SELECT DESIRED (0 TO END SELECTS)                      *
*                                                               *
*****************************************************************
```

SELECT OPTIONS

10.5A AVAILABLE REPORTS

The available reports may be divided into five distinct groups:

* TIME RELATED REPORTS
* COST RELATED REPORTS
* RESOURCE RELATED REPORTS
* MANAGEMENT COMPOSITE REPORTS
* NETWORK RELATED REPORTS

```
*****************************************************************************
*                                                                           *
*                  COMMAND NUMBER 6                                         *
*                                                                           *
*                  REPORTS AVAILABLE:                                       *
*                                                                           *
*   1 CUT AND PASTE                          15 MILESTONE REPORT            *
*   2 CASH FLOW PLOT                         16 TRADE SCHEDULE              *
*   3 WORK STATUS & COST REPORT              17 UPDATE INPUT REPORT         *
*   4 CASH FLOW REPORT                       18 PROJECT CALENDAR            *
*   5 ACTIVITY COSTING REPORT                19 NETWORK STATISTICS          *
*   6 TARGET REPORT (COMPARISON)             20 NETWORK LISTING             *
*   7 CONNECTOR LISTING                      21 FIELD REPORTS               *
*   8 PREDICTED STATUS REPORT                22 NETWORK LOGIC REPORT        *
*   9 RESOURCE TYPE LIST BY ACTIVITY         23 BAR CHART                   *
*  10 RESOURCE USAGE REPORT                  24 JOB PROGRESS OV             *
*  11 RESOURCE USAGE BY ACTIVITY             25 TIME ANALYSIS RE            *
*  12 RESOURCE USAGE BY RESOURCE             26 EXCESS RESOURCE             *
*  13 RESOURCE USAGE PLOT                    27 REPEAT LAST SEC             *
*  14 RESOURCE LIBRARY                       28 DELETE LAST SECT            *
*                                                                           *
*     ** LAST REPORT SELECTED: WORK STATUS & COST REPORT **                 *
*                                                                           *
*     ENTER REPORT DESIRED (0 TO END REPORTS)                               *
*****************************************************************************
```

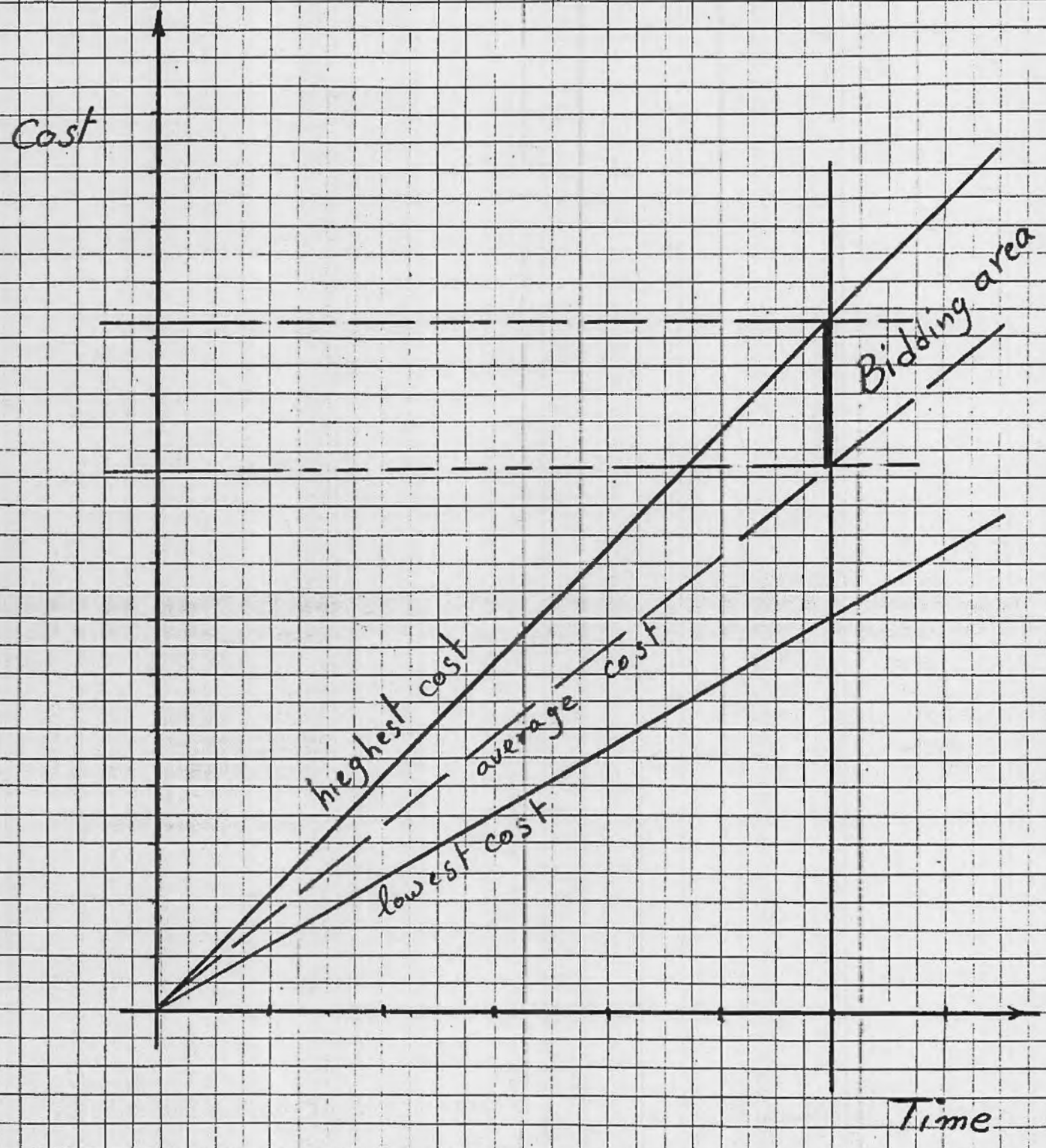
The following pages gives a brief description of each [illegible] grouped according to the five catagories [illegible] above.

3_ Macro Planning

a_ Problem Matrix

b_ Computer input sheets

a. Problem Matrix



History of Cost for a Type of Construction during the last 5 – 7 years, showing the lowest, hieghest and average Cost and the bidding area.

b- Computer input sheets

THE ARAB CONTRACTORS PAGE OF 8-NOV-84
MANAGEMENT DEVELOPMENT DEP. CM-5 PROJECT MANAGEMENT SYSTEM

PROJECT ACTIVITY INPUT DATE / /

PREPARED BY :
CHECKED BY :

1	NUMBER	DESCRIPTION	CODE	EST DUR	EST COST	WORK WEEK	START DATE	START OPTION	FINISH DATE	FINISH OPTION
2	#	QUANTITY	#	QUANTITY	#	QUANTITY	#	QUANTITY	#	QUANTITY
1										
2										
1										
2										
1										
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2										

THE ARAB CONTRACTORS　　PAGE　　OF　　8-NOV-84
MANAGEMENT DEVELOPMENT DEP.　　CM-5 PROJECT MANAGEMENT SYSTEM

PROJECT　　RESOURCE LIBRARY　　DATE　/　/

PREPARED BY :
CHECKED BY :

NUMBER	DESCRIPTION	CODE	UNIT OF MEASURE	UNIT COST	MAX QUANT AVAIL/DAY	RESOURCE TYPE

THE ARAB CONTRACTORS
MANAGEMENT DEVELOPMENT DEP.

PAGE OF

8-NOV-84

CM-5 PROJECT MANAGEMENT SYSTEM

PROJECT

CONNECTOR INPUT DATE / /

PREPARED BY :
CHECKED BY :

NUMBER	FROM	TO	TYPE	LAG	***	NUMBER	FROM	TO	TYPE	LAG
					***					
					***					
					***					
					***					
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THE ARAB CONTRACTORS PAGE OF 8-NOV-84
MANAGEMENT DEVELOPMENT DEP. CM-5 PROJECT MANAGEMENT SYSTEM

PROJECT ACTIVITY INPUT DATE / /

PREPARED BY :
CHECKED BY :

	NUMBER	DESCRIPTION	CODE	EST DUR	EST COST	WORK WEEK	START DATE	START OPTION	FINISH DATE	FINISH OPTION
1										
2	# QUANTITY	# QUANTITY	# QUANTITY	# QUANTITY	# QUANTITY	# QUANTITY	# QUANTITY			
1										
2										
1										
2										
1										
2										
1										
2										
1										
2										
1										
2										

THE ARAB CONTRACTORS
MANAGEMENT DEVELOPMENT DEP.

8-NOV-84

CM-5 PROJECT MANAGEMENT SYSTEM

PROJECT

PROJECT INFORMATION

DATE / /

PREPARED BY :
CHECKED BY :

NETWORK TYPE : PDM / ADM

ACTIVITIES / CONNECTORS / RESOURCES

DATE FORMAT : MM/DD/YYYY OR DD/MM/YYYY
FIRST DAY OF WEEK: PROJECT START DATE:

HOLIDAYS AND NON-WORKDAYS

NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE

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RUN DATE 15/10/1983

LAST UPDATE 1/ 7/1983

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

** RESOURCE LIBRARY LISTING **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES 1014
TIME = 18.10

PROJ. STARTS 2/ 7/1983

LAST ACCESS 15/10/1983

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER
FOR RESOURCES NO. 1 TO 11
SELECTS AND SORTS IGNORED

RES. NO.	RESOURCE DISCRIPTION	RESOURCE CODE	QUANTITY AVAILABLE	UNIT OF MEASURE	UNIT COST	RESOURCE TYPE
1	SURVEYING GROUP	SG	1.00	NO	10.00	LABOUR
2	LABOURS	LB	5.00	NO	5.00	LABOUR
3	CARPENTERS	CP	2.00	NO	7.00	LABOUR
4	STEEL FIXERS	SF	2.00	NO	9.00	LABOURS
5	TRANS-MIXER	TR	1.00	NO	150.00	EQUIPMENT
6	ERECTING GROUP	EG	1.00	NO	700.00	LABOURS
7	KARAWAN	KR	4.00	NO	4.00	LABOURS
8	KARAK	KK	4.00	NO	4.00	LABOUR
9	FORMAGY	FR	4.00	NO	5.00	LABOURS
10	RAYECE TABLIA	RT	2.00	NO	15.00	LABOURS
11	CONCRETE	CC	40.00	M3	50.00	MATERIALS

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CAIRO, EGYPT

RUN DATE 30/ 8/1983

LAST UPDATE 1/ 7/1983

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

** TIME ANALYSIS REPORT **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES 1025
TIME = 20.44

PROJ. STARTS 2/ 7/1983

LAST ACCESS 31/ 7/1983

ALL ACTIVITY NUMBER ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER

ACT. NO.	ACT. CODE	ACTIVITY DESCRIPTION	L.R.E. DUR.	EARLY SCHEDULE START	EARLY SCHEDULE FINISH	LATE SCHEDULE START	LATE SCHEDULE FINISH	FLOAT TOTAL	FLOAT FREE	CRIT **
10	MB010	MOBILIZATION & SURVEYING	4.0	2JUL83 1.0	5JUL83 4.9	2JUL83 1.0	5JUL83 4.9	0.0	0.0	**
20	EX020	EXCAVATION	6.0	6JUL83 5.0	14JUL83 13.9	6JUL83 5.0	14JUL83 13.9	0.0	0.0	**
30	PC030	P.C.FOOTINGS	2.0	15JUL83 14.0	16JUL83 15.9	15JUL83 14.0	16JUL83 15.9	0.0	0.0	**
40	ST040	ST.FIX.(WORKSHOP*FOOTINGS)	1.0	2JUL83 1.0	2JUL83 1.9	16JUL83 15.0	16JUL83 15.9	11.0	0.0	
50	RC050	R.C.FOOTINGS	4.0	17JUL83 16.0	20JUL83 19.9	17JUL83 16.0	20JUL83 19.9	0.0	0.0	**
60	ST060	ST.FIX.(WORKSHOP*COL.+SEMELLS)	3.0	3JUL83 2.0	5JUL83 4.9	18JUL83 17.0	20JUL83 19.9	12.0	12.0	
70	RC070	RC.(COL.+SEMELLS)	5.0	21JUL83 20.0	26JUL83 25.9	21JUL83 20.0	26JUL83 25.9	0.0	0.0	**
80	IS080	ISOLATING LAYER	1.0	31JUL83 30.0	31JUL83 30.9	31JUL83 30.0	31JUL83 30.9	0.0	0.0	**
90	BC090	BACKFILLING+COMPACTION	3.0	3AUG83 33.0	5AUG83 35.9	3AUG83 33.0	5AUG83 35.9	0.0	0.0	**
100	RC100	COMPL.OF RC.FOR SHED	5.0	6AUG83 36.0	10AUG83 40.9	6AUG83 36.0	10AUG83 40.9	0.0	0.0	**
110	PC110	P.C. LAYER AT G.L.	2.0	11AUG83 41.0	12AUG83 42.9	11AUG83 41.0	12AUG83 42.9	0.0	0.0	**
120	DL120	DELIVERY OF ROOF PARTS	7.0	24JUL83 23.0	30JUL83 29.9	6AUG83 36.0	12AUG83 42.9	13.0	13.0	
130	ER130	ERECTION OF ROOF PARTS	5.0	13AUG83 43.0	17AUG83 47.9	13AUG83 43.0	17AUG83 47.9	0.0	0.0	**
140	DL140	DELIVERY OF POSTER	14.0	24JUL83 23.0	6AUG83 36.9	4AUG83 34.0	17AUG83 47.9	11.0	11.0	
150	ER150	ERECTION OF POSTER	3.0	18AUG83 48.0	20AUG83 50.9	18AUG83 48.0	20AUG83 50.9	0.0	0.0	**
160	DM160	DEMOBILIZATION & CLEAN UP	3.0	21AUG83 51.0	23AUG83 53.9	21AUG83 51.0	23AUG83 53.9	0.0	0.0	**

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PROJECT MANAGEMENT SYSTEM
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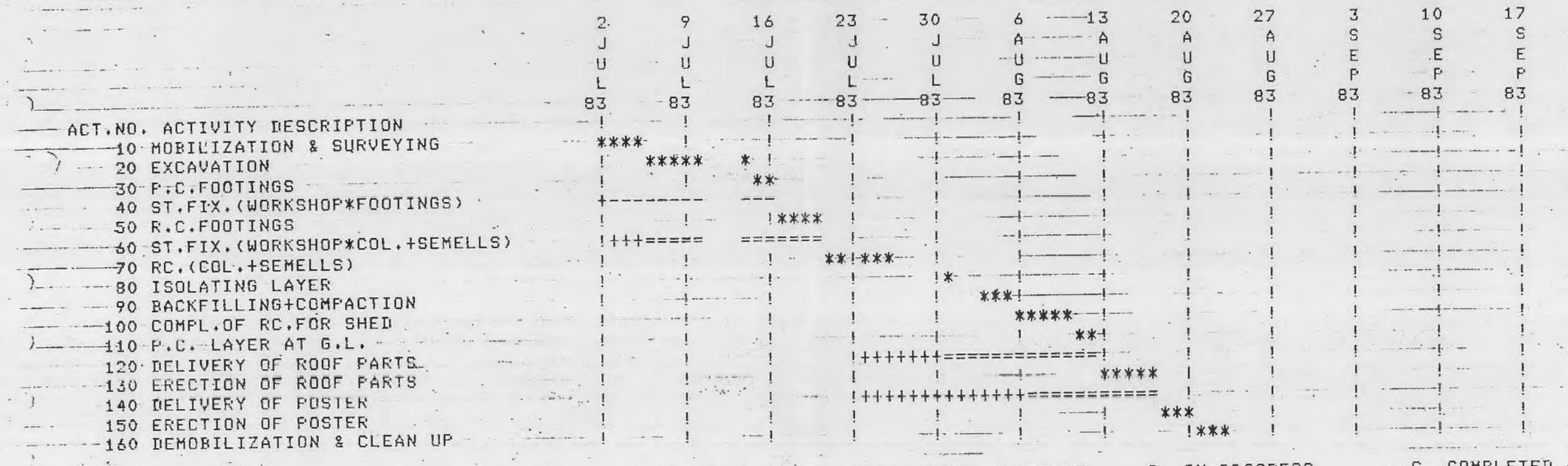
** BAR CHART **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES 1023
TIME = 18.10

PROJ. STARTS 2/ 7/1983

LAST ACCESS 15/10/1983

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER
RANGE: FROM PROJECT DAY 1 INTERVAL: DAILY

PROJECT END = 53



\+ NON-CRITICAL SCHED. - LATE SCHEDULE = FREE FLOAT * CRITICAL SCHEDULE P IN PROGRESS C COMPLETED

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CAIRO, EGYPT

RUN DATE 30/ 8/1983
LAST UPDATE 1/ 7/1983

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

** WORK STATUS AND COST REPORT **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES 1003
TIME = 19.52

PROJ. STARTS 2/ 7/1983
LAST ACCESS 31/ 7/1983

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER

ACT. NO.	ACTIVITY DESCRIPTION	CODE	START	FINISH	EST. DUR.	DAYS WORKED TO DATE	DAYS REM. TO COMPL.	% COMPL.		
	TIME ---------->				EST.					
	COSTS ---------->									
10	MOBILIZATION & SURVEYING	MB010	2-JUL-83	5-JUL-83	4.0	0.0	4.0	0.0%		
					500		0	500	0.0%	0.0%
20	EXCAVATION	EX020	6-JUL-83	14-JUL-83	6.0	0.0	6.0	0.0%		
					138		0	138	0.0%	0.0%
30	P.C.FOOTINGS	PC030	15-JUL-83	16-JUL-83	2.0	0.0	2.0	0.0%		
					160		0	160	0.0%	0.0%
40	ST.FIX.(WORKSHOP*FOOTINGS)	ST040	2-JUL-83	2-JUL-83	1.0	0.0	1.0	0.0%		
					72		0	72	0.0%	0.0%
50	R.C.FOOTINGS	RC050	17-JUL-83	20-JUL-83	4.0	0.0	4.0	0.0%		
					288		0	288	0.0%	0.0%
60	ST.FIX.(WORKSHOP*COL.+SEMELLS)	ST060	3-JUL-83	5-JUL-83	3.0	0.0	3.0	0.0%		
					285		0	285	0.0%	0.0%
70	RC.(COL.+SEMELLS)	RC070	21-JUL-83	26-JUL-83	5.0	0.0	5.0	0.0%		
					475		0	475	0.0%	0.0%
80	ISOLATING LAYER	IS080	31-JUL-83	31-JUL-83	1.0	0.0	1.0	0.0%		
					40		0	40	0.0%	0.0%
90	BACKFILLING+COMPACTION	BC090	3-AUG-83	5-AUG-83	3.0	0.0	3.0	0.0%		
					48		0	48	0.0%	0.0%
100	COMPL.OF RC.FOR SHED	RC100	6-AUG-83	10-AUG-83	5.0	0.0	5.0	0.0%		
					500		0	500	0.0%	0.0%
110	P.C. LAYER AT G.L.	PC110	11-AUG-83	12-AUG-83	2.0	0.0	2.0	0.0%		
					1400		0	1400	0.0%	0.0%
120	DELIVERY OF ROOF PARTS	DL120	24-JUL-83	30-JUL-83	7.0	0.0	7.0	0.0%		
					2000		0	2000	0.0%	0.0%
130	ERECTION OF ROOF PARTS	ER130	13-AUG-83	17-AUG-83	5.0	0.0	5.0	0.0%		
					600		0	600	0.0%	0.0%
140	DELIVERY OF POSTER	DL140	24-JUL-83	6-AUG-83	14.0	0.0	14.0	0.0%		
					600		0	600	0.0%	0.0%
150	ERECTION OF POSTER	ER150	18-AUG-83	20-AUG-83	3.0	0.0	3.0	0.0%		
					160		0	160	0.0%	0.0%
160	DEMOBILIZATION & CLEAN UP	DM160	21-AUG-83	23-AUG-83	3.0	0.0	3.0	0.0%		
					600		0	600	0.0%	0.0%

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

RUN DATE 30/ 8/1983

PROJ. STARTS 2/ 7/1983

** CASH FLOW REPORT **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES 1004
TIME = 20.34

LAST UPDATE 1/ 7/1983

LAST ACCESS 31/ 7/1983

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER
RANGE: FROM PROJECT DAY 1 TO 53 INTERVAL: DAILY

PROJ. DAY	DATE	CRITICAL $ THIS DAY	CRITICAL CUMULATIVE $	EARLY SCHEDULE $ THIS DAY	EARLY SCHEDULE CUMULATIVE $	LATE SCHEDULE $ THIS DAY	LATE SCHEDULE CUMULATIVE $
1	2-JUL-83	125	125	197	197	125	125
2	3-JUL-83	125	250	220	417	125	250
3	4-JUL-83	125	375	220	637	125	375
4	5-JUL-83	125	500	220	857	125	500
5	6-JUL-83	23	523	23	880	23	523
6	7-JUL-83	23	546	23	903	23	546
7	8-JUL-83	23	569	23	926	23	569
8	9-JUL-83	23	592	23	949	23	592
9	10-JUL-83	23	615	23	972	23	615
10	11-JUL-83	0	615	0	972	0	615
11	12-JUL-83	0	615	0	972	0	615
12	13-JUL-83	0	615	0	972	0	615
13	14-JUL-83	23	638	23	995	23	638
14	15-JUL-83	80	718	80	1075	80	718
15	16-JUL-83	80	798	80	1155	152	870
16	17-JUL-83	72	870	72	1227	72	942
17	18-JUL-83	72	942	72	1299	167	1109
18	19-JUL-83	72	1014	72	1371	167	1276
19	20-JUL-83	72	1086	72	1443	167	1443
20	21-JUL-83	95	1181	95	1538	95	1538
21	22-JUL-83	95	1276	95	1633	95	1633
22	23-JUL-83	0	1276	0	1633	0	1633
23	24-JUL-83	95	1371	423	2056	95	1728
24	25-JUL-83	95	1466	423	2480	95	1823
25	26-JUL-83	95	1561	423	2903	95	1918
26	27-JUL-83	0	1561	328	3232	0	1918
27	28-JUL-83	0	1561	328	3560	0	1918
28	29-JUL-83	0	1561	328	3889	0	1918
29	30-JUL-83	0	1561	328	4218	0	1918
30	31-JUL-83	40	1601	82	4300	40	1958
31	1-AUG-83	0	1601	42	4343	0	1958
32	2-AUG-83	0	1601	42	4386	0	1958
33	3-AUG-83	16	1617	58	4445	16	1974
34	4-AUG-83	16	1633	58	4504	58	2032
35	5-AUG-83	16	1649	58	4563	58	2091
36	6-AUG-83	100	1749	142	4706	428	2520
37	7-AUG-83	100	1849	100	4806	428	2948
38	8-AUG-83	100	1949	100	4906	428	3377
39	9-AUG-83	100	2049	100	5006	428	3806
40	10-AUG-83	100	2149	100	5106	228	4034

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

RUN DATE 30/ 8/1983

PROJ. STARTS 2/ 7/1983

** CASH FLOW REPORT **
PARKING SHED EXERCISE
P.CH.EX.
REPORT SERIES 1004
TIME = 20.39

LAST UPDATE 1/ 7/1983

LAST ACCESS 31/ 7/1983

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER
RANGE: FROM PROJECT DAY 1 TO 53 INTERVAL: DAILY

PROJ. DAY	DATE	CRITICAL		EARLY SCHEDULE		LATE SCHEDULE	
		$ THIS DAY	CUMULATIVE $	$ THIS DAY	CUMULATIVE $	$ THIS DAY	CUMULATIVE $
41	11-AUG-83	700	2849	700	5806	1028	5263
42	12-AUG-83	700	3549	700	6506	1028	6291
43	13-AUG-83	120	3669	120	6626	162	6454
44	14-AUG-83	120	3789	120	6746	162	6617
45	15-AUG-83	120	3909	120	6866	162	6780
46	16-AUG-83	120	4029	120	6986	162	6943
47	17-AUG-83	120	4149	120	7106	162	7106
48	18-AUG-83	53	4202	53	7159	53	7159
49	19-AUG-83	53	4255	53	7212	53	7212
50	20-AUG-83	53	4309	53	7266	53	7266
51	21-AUG-83	200	4509	200	7466	200	7466
52	22-AUG-83	200	4709	200	7666	200	7666
53	23-AUG-83	200	4909	200	7866	200	7866

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CAIRO, EGYPT

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

RUN DATE 30/ 8/1983

PROJ. STARTS 2/ 7/1983

LAST UPDATE 1/ 7/1983

** COST FLOW PLOT **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES 1002
TIME = 20.28

LAST ACCESS 31/ 7/1983

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER
RANGE: FROM PROJECT DAY 1 TO 53 INTERVAL: DAILY

A ACTUAL * CRITICAL SCHEDULE E EARLY SCHEDULE L LATE SCHEDULE

DATE	PROJ. DAY	0	1967	3933	5900	7866
2-JUL-83	1	!*E	!	!	!	!
3-JUL-83	2	!***EE	!	!	!	!
4-JUL-83	3	!****EEEE	!	!	!	!
5-JUL-83	4	!******FFFF	!	!	!	!
6-JUL-83	5	!******EEEEE	!	!	!	!
7-JUL-83	6	!******EEEEE	!	!	!	!
8-JUL-83	7	!*******EEEE	!	!	!	!
9-JUL-83	8	!*******EEEEE	!	!	!	!
10-JUL-83	9	!*******EEEEE	!	!	!	!
11-JUL-83	10	!*******EEEEE	!	!	!	!
12-JUL-83	11	!*******EEEEE	!	!	!	!
13-JUL-83	12	!*******EEEEE	!	!	!	!
14-JUL-83	13	!********EEEE	!	!	!	!
15-JUL-83	14	!**********CCCC	!	!	!	!
16-JUL-83	15	!**********LEEE	!	!	!	!
17-JUL-83	16	!***********EEEE	!	!	!	!
18-JUL-83	17	!***********LLLEE	!	!	!	!
19-JUL-83	18	!************LLLLE	!	!	!	!
20-JUL-83	19	!************LLLLL	!	!	!	!
21-JUL-83	20	!*************LLLL	!	!	!	!
22-JUL-83	21	!*************LLLL	!	!	!	!
23-JUL-83	22	!*************LLLL	!	!	!	!
24-JUL-83	23	!*************LLLLEEEEE	!	!	!	!
25-JUL-83	24	!*************LLLLLEEEEEEE	!	!	!	!
26-JUL-83	25	!*************LLLLLEEEEEEEEEE	!	!	!	!
27-JUL-83	26	!*************LLLLLEEEEEEEEEEEEE	!	!	!	!
28-JUL-83	27	!*************LLLLLEEEEEEEEEEEEEEEE	!	!	!	!
29-JUL-83	28	!*************LLLLLEEEEEEEEEEEEEEEEEE	!	!	!	!
30-JUL-83	29	!*************LLLLLEEEEEEEEEEEEEEEEEEEE	!	!	!	!
31-JUL-83	30	!*************LLLLEEEEEEEEEEEEEEEEEEEEE	!	!	!	!
1-AUG-83	31	!*************LLLLEEEEEEEEEEEEEEEEEEEEE	!	!	!	!
2-AUG-83	32	!*************LLLLEEEEEEEEEFEEEEEEEEEEE	!	!	!	!
3-AUG-83	33	!*************LLLLEEEEEEEEEEFEEEEEEEEEE	!	!	!	!
4-AUG-83	34	!*************LLLLEEEEEEEEEEEEEEEEEEEEE	!	!	!	!
5-AUG-83	35	!*************LLLLLEEEEEEEEEEEEEEEEEEEE	!	!	!	!
6-AUG-83	36	!*************LLLLLLLLLEEEEEEEEEEEEEEEE	!	!	!	!
7-AUG-83	37	!*************LLLLLLLLLLLLEEEEEEEEEEEEE	!	!	!	!
8-AUG-83	38	!*************LLLLLLLLLLLLLLLEEEEEEEEEE	!	!	!	!
9-AUG-83	39	!*************LLLLLLLLLLLLLLLLLEEEEEEEE	!	!	!	!
10-AUG-83	40	!*************LLLLLLLLLLLLLLLLLLLEEEEEE	!	!	!	!

MANAGEMENT INSTITUTE
CAIRO, EGYPT

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

RUN DATE 30/ 8/1983
LAST UPDATE 1/ 7/1983

PROJ. STARTS 2/ 7/1983
LAST ACCESS 31/ 7/1983

** COST FLOW PLOT **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES 1002
TIME = 20.33

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER
RANGE: FROM PROJECT DAY 1 TO 53 INTERVAL: DAILY

DATE	PROJ. DAY	0	A ACTUAL 1967	* CRITICAL SCHEDULE 3933	E EARLY SCHEDULE 5900	L LATE SCHEDULE 7866
11-AUG-83	41	!	**********	**********	LLLLLLLLLL	EEEEEEE.!
12-AUG-83	42	!	**********	**********	LLLLLLLLLL	LLLLEEE.!
13-AUG-83	43	!	**********	**********	LLLLLLLLLL	LLLLLLEE.!
14-AUG-83	44	!	**********	**********	LLLLLLLLLL	LLLLLLLLF.!
15-AUG-83	45	!	**********	**********	LLLLLLLLLL	LLLLLLLLLE.!
16-AUG-83	46	!	**********	**********	LLLLLLLLLL	LLLLLLLLLL.!
17-AUG-83	47	!	**********	**********	LLLLLLLLLL	LLLLLLLLLL.!
18-AUG-83	48	!	**********	**********	LLLLLLLLLL	LLLLLLLLLL.!
19-AUG-83	49	!	**********	**********	LLLLLLLLLL	LLLLLLLLLL.!
20-AUG-83	50	!	**********	**********	LLLLLLLLLL	LLLLLLLLLL.!
21-AUG-83	51	!	**********	**********	!!!!!!!!!!	LLLLLLLLLL.!
22-AUG-83	52	!	**********	**********	LLLLLLLLLL	LLLLLLLLLL..!
23-AUG-83	53	!	**********	**********	LLLLLLLLLL	LLLLLLLLLL!

MANAGEMENT INSTITUTE
CAIRO, EGYPT

RUN DATE 15/10/1983

LAST UPDATE 1/ 7/1983

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

** RESOURCE USAGE REPORT **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES-1010
TIME = 18.01

PROJ. STARTS 2/ 7/1983

LAST ACCESS 15/10/1983

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER
RANGE! FROM PROJECT DAY 1 TO 53 INTERVAL! DAILY NON-CUMULATIVE

PROJ. DAY	DATE	CARPENTERS ! MAX. AVAIL. ! CRITICAL	EARLY	2 LATE	STEEL FIXERS ! MAX. AVAIL. ! CRITICAL	EARLY	2 LATE	CONCRETE ! MAX. AVAIL. ! CRITICAL	EARLY	40 LATE
1	2JUL83	0	0	0	0	2	0	0	0	0
2	3JUL83	0	0	0	0	2	0	0	0	0
3	4JUL83	0	0	0	0	2	0	0	0	0
4	5JUL83	0	0	0	0	2	0	0	0	0
5	6JUL83	0	0	0	0	0	0	0	0	0
6	7JUL83	0	0	0	0	0	0	0	0	0
7	8JUL83	0	0	0	0	0	0	0	0	0
8	9JUL83	0	0	0	0	0	0	0	0	0
9	10JUL83	0	0	0	0	0	0	0	0	0
10	11JUL83	0	0	0	0	0	0	0	0	0
11	12JUL83	0	0	0	0	0	0	0	0	0
12	13JUL83	0	0	0	0	0	0	0	0	0
13	14JUL83	0	0	0	0	0	0	0	0	0
14	15JUL83	2	2	2	0	0	2	4	4	4
15	16JUL83	2	2	2	0	0	2	4	4	4
16	17JUL83	2	2	2	2	2	2	3	3	3
17	18JUL83	2	2	2	2	2	4	3	3	3
18	19JUL83	2	2	2	2	2	4	3	3	3
19	20JUL83	2	2	2	2	2	2	5	5	5
20	21JUL83	2	2	2	2	2	2	5	5	5
21	22JUL83	2	2	2	0	0	0	0	0	0
22	23JUL83	0	0	0	0	0	0	5	5	5
23	24JUL83	2	2	2	2	2	2	5	5	5
24	25JUL83	2	2	2	2	2	2	5	5	5
25	26JUL83	2	2	2	2	2	2	0	0	0
26	27JUL83	0	0	0	0	0	0	0	0	0
27	28JUL83	0	0	0	0	0	0	0	0	0
28	29JUL83	0	0	0	0	0	0	0	0	0
29	30JUL83	0	0	0	0	0	0	0	0	0
30	31JUL83	0	0	0	0	0	0	0	0	0
31	1AUG83	0	0	0	0	0	0	0	0	0
32	2AUG83	0	0	0	0	0	0	0	0	0
33	3AUG83	0	0	0	0	0	0	0	0	0
34	4AUG83	0	0	0	0	0	0	0	0	0
35	5AUG83	0	0	0	0	0	0	4	4	4
36	6AUG83	2	2	2	2	2	2	4	4	4
37	7AUG83	2	2	2	2	2	2	4	4	4
38	8AUG83	2	2	2	2	2	2	4	4	4
39	9AUG83	2	2	2	2	2	2	4	4	4

MANAGEMENT INSTITUTE
CAIRO, EGYPT

RUN DATE 15/10/1983

LAST UPDATE 1/ 7/1983

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

** RESOURCE USAGE REPORT **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES 1010
TIME = 18.06

PROJ. STARTS 2/ 7/1983

LAST ACCESS 15/10/1983

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER
RANGE: FROM PROJECT DAY 1 TO 53 INTERVAL: DAILY NON-CUMULATIVE

PROJ. DAY	DATE	CARPENTERS MAX. AVAIL.			STEEL FIXERS MAX. AVAIL.			CONCRETE MAX. AVAIL.		
		CRITICAL	EARLY	LATE 2	CRITICAL	EARLY	LATE 2	CRITICAL	EARLY	LATE 40
40	10AUG83	2	2	2	2	2	2	4	4	4
41	11AUG83	0	0	0	0	0	0	35	35	35
42	12AUG83	0	0	0	0	0	0	35	35	35
43	13AUG83	0	0	0	0	0	0	0	0	0
44	14AUG83	0	0	0	0	0	0	0	0	0
45	15AUG83	0	0	0	0	0	0	0	0	0
46	16AUG83	0	0	0	0	0	0	0	0	0
47	17AUG83	0	0	0	0	0	0	0	0	0
48	18AUG83	0	0	0	0	0	0	0	0	0
49	19AUG83	0	0	0	0	0	0	0	0	0
50	20AUG83	0	0	0	0	0	0	0	0	0
51	21AUG83	0	0	0	0	0	0	0	0	0
52	22AUG83	0	0	0	0	0	0	0	0	0
53	23AUG83	0	0	0	0	0	0	0	0	0

MANAGEMENT INSTITUTE
CAIRO, EGYPT

RUN DATE 15/10/1983

LAST UPDATE 1/ 7/1983

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

** RESOURCE USAGE REPORT **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES 1010
TIME = 19.11

PROJ. STARTS 2/ 7/1983

LAST ACCESS 15/10/1983

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER
RANGE: FROM PROJECT DAY 1 TO 53 INTERVAL: WEEKLY NON-CUMULATIVE

PROJ. DAY	DATE	CARPENTERS MAX. AVAIL. 2			STEEL FIXERS MAX. AVAIL. 2			CONCRETE MAX. AVAIL. 40		
		CRITICAL	EARLY	LATE	CRITICAL	EARLY	LATE	CRITICAL	EARLY	LATE
7	8JUL83	0	0	0	0	8	0	0	0	0
14	15JUL83	2	2	2	0	0	0	4	4	4
21	22JUL83	14	14	14	12	12	20	26	26	26
28	29JUL83	6	6	6	6	6	6	15	15	15
35	5AUG83	0	0	0	0	0	0	0	0	0
42	12AUG83	10	10	10	10	10	10	90	90	90
49	19AUG83	0	0	0	0	0	0	0	0	0
53	23AUG83	0	0	0	0	0	0	0	0	0

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

RUN DATE 30/ 8/1983

** RESOURCE USAGE BY RESOURCE **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES 1012
TIME = 19.60

PROJ. STARTS 2/ 7/1983

LAST UPDATE 1/ 7/1983

LAST ACCESS 31/ 7/1983

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER
FOR RESOURCES NO. 1 TO 12

RES.NO	RESOURCE NAME / ACT.NO	CODE	ACTIVITY DESCRIPTION	MAX. QUANT	UNITS	UNIT COST / DUR.	TYPE / USE/DAY	R.COST/DAY	TOTAL
1	SURVEYING GROUP			1	NO	10	LABOUR		
	10	MB010	MOBILIZATION & SURVEYING			4.0	1.00	10	40
			TOTAL (USED X COST X # DAYS)						40
2	LABOURS			5	NO	5	LABOUR		
	20	EX020	EXCAVATION			6.0	5.00	25	150
	80	IS080	ISOLATING LAYER			1.0	1.00	5	5
	90	BC090	BACKFILLING+COMPACTION			3.0	3.00	15	45
			TOTAL (USED X COST X # DAYS)						200
3	CARPENTERS			5	NO	7	LABOUR		
	30	PC030	P.C.FOOTINGS			2.0	2.00	14	28
	50	RC050	R.C.FOOTINGS			4.0	2.00	14	56
	70	RC070	RC.(COL.+SEMELLS)			5.0	2.00	14	70
	100	RC100	COMPL.OF RC.FOR SHED			5.0	2.00	14	70
			TOTAL (USED X COST X # DAYS)						224
4	STEEL FIXERS			5	NO	9	LABOURS		
	40	ST040	ST.FIX.(WORKSHOP*FOOTINGS)			1.0	2.00	18	18
	50	RC050	R.C.FOOTINGS			4.0	2.00	18	72
	60	ST060	ST.FIX.(WORKSHOP*COL.+SEMELLS)			3.0	2.00	18	54
	70	RC070	RC.(COL.+SEMELLS)			5.0	2.00	18	90
	100	RC100	COMPL.OF RC.FOR SHED			5.0	2.00	18	90
			TOTAL (USED X COST X # DAYS)						324
5	TRANS-MIXER			1	NO	150	EQUIPMENT		
	30	PC030	P.C.FOOTINGS			2.0	1.00	150	300
	50	RC050	R.C.FOOTINGS			4.0	1.00	150	600
	70	RC070	RC.(COL.+SEMELLS)			5.0	1.00	150	750
	100	RC100	COMPL.OF RC.FOR SHED			5.0	1.00	150	750
			TOTAL (USED X COST X # DAYS)						2400
6	ERECTING GROUP			1	NO	700	LABOURS		
	130	ER130	ERECTION OF ROOF PARTS			5.0	1.00	700	3500
	150	ER150	ERECTION OF POSTER			3.0	1.00	700	2100
			TOTAL (USED X COST X # DAYS)						5600
7	KARAWAN			4	NO	4	LABOURS		
	110	PC110	P.C. LAYER AT G.L.			2.0	4.00	16	32
			TOTAL (USED X COST X # DAYS)						32

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

RUN DATE 30/ 8/1983

PROJ. STARTS 2/ 7/1983

LAST UPDATE 1/ 7/1983

** RESOURCE USAGE BY RESOURCE **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES 1012
TIME = 19.60

LAST ACCESS 31/ 7/1983

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER
FOR RESOURCES NO. 1 TO 12

RES.NO	RESOURCE NAME / ACT.NO	CODE	ACTIVITY DESCRIPTION	MAX. QUANT	UNITS	UNIT COST / DUR.	TYPE / USE/DAY	R.COST/DAY	TOTAL
8	KARAK			4	NO	4	LABOUR		
	110	PC110	P.C. LAYER AT G.L.			2.0	2.00	8	16
			TOTAL (USED X COST X # DAYS)						16
9	FORMAGY			4	NO	5	LABOURS		
	110	PC110	P.C. LAYER AT G.L.			2.0	1.00	5	10
			TOTAL (USED X COST X # DAYS)						10
10	RAYECE TABLIA			2	NO	15	LABOURS		
	110	PC110	P.C. LAYER AT G.L.			2.0	1.00	15	30
			TOTAL (USED X COST X # DAYS)						30
11	CONCRETE			40	M3	50	MATERIALS		
	30	PC030	P.C.FOOTINGS			2.0	4.00	200	400
	50	RC050	R.C.FOOTINGS			4.0	3.00	150	600
	70	RC070	RC.(COL.+SEMELLS)			5.0	5.00	250	1250
	100	RC100	COMPL.OF RC.FOR SHED			5.0	4.00	200	1000
	110	PC110	P.C. LAYER AT G.L.			2.0	35.00	1750	3500
			TOTAL (USED X COST X # DAYS)						6750
12	PRICE			225	L.E.	1	L.E.		
	20	EX020	EXCAVATION			6.0	30.00	30	180
	30	PC030	P.C.FOOTINGS			2.0	100.00	100	200
	50	RC050	R.C.FOOTINGS			4.0	113.00	113	452
	70	RC070	RC.(COL.+SEMELLS)			5.0	158.00	158	790
	80	IS080	ISOLATING LAYER			1.0	50.00	50	50
	90	BC090	BACKFILLING+COMPACTION			3.0	20.00	20	60
	100	RC100	COMPL.OF RC.FOR SHED			5.0	158.00	158	790
	110	PC110	P.C. LAYER AT G.L.			2.0	875.00	875	1750
	120	DL120	DELIVERY OF ROOF PARTS			7.0	358.00	358	2506
	130	ER130	ERECTION OF ROOF PARTS			5.0	150.00	150	750
	140	DL140	DELIVERY OF POSTER			14.0	54.00	54	756
	150	ER150	ERECTION OF POSTER			3.0	67.00	67	201
	160	DM160	DEMOBILIZATION & CLEAN UP			3.0	250.00	250	750
			TOTAL (USED X COST X # DAYS)						9235

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

RUN DATE 15/10/1983

PROJ. STARTS 2/ 7/1983

** EST RESOURCE USAGE BY ACTIVITY **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES 1011
TIME = 18.09

LAST UPDATE 1/ 7/1983

LAST ACCESS 15/10/1983

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER

ACT. NO.	ACT. CODE	ACTIVITY DESCRIPTION	EST. DUR.	START DATE	FINISH DATE	RES. NO.	RES. CODE	RESOURCE DESC.	ESTIMATED UNIT QUANT/DAY	OF MEASURE
10	MB010	MOBILIZATION & SURVEYING	4.0	2JUL83	5JUL83	1	SG	SURVEYING GROUP	1.00	NO
20	EX020	EXCAVATION	6.0	6JUL83	14JUL83	2	LB	LABOURS	5.00	NO
						12			30.00	
30	PC030	P.C.FOOTINGS	2.0	15JUL83	16JUL83	3	CP	CARPENTERS	2.00	NO
						5	TR	TRANS-MIXER	1.00	NO
						11	CC	CONCRETE	4.00	M3
						12			100.00	
40	ST040	ST.FIX.(WORKSHOP*FOOTINGS)	1.0	2JUL83	2JUL83	4	SF	STEEL FIXERS	2.00	NO
50	RC050	R.C.FOOTINGS	4.0	17JUL83	20JUL83	3	CP	CARPENTERS	2.00	NO
						4	SF	STEEL FIXERS	2.00	NO
						5	TR	TRANS-MIXER	1.00	NO
						11	CC	CONCRETE	3.00	M3
						12			113.00	
60	ST060	ST.FIX.(WORKSHOP*COL.+SEMELLS)	3.0	3JUL83	5JUL83	4	SF	STEEL FIXERS	2.00	NO
70	RC070	RC.(COL.+SEMELLS)	5.0	21JUL83	26JUL83	3	CP	CARPENTERS	2.00	NO
						4	SF	STEEL FIXERS	2.00	NO
						5	TR	TRANS-MIXER	1.00	NO
						11	CC	CONCRETE	5.00	M3
						12			158.00	
80	IS080	ISOLATING LAYER	1.0	31JUL83	31JUL83	2	LB	LABOURS	1.00	NO
						12			50.00	
90	BC090	BACKFILLING+COMPACTION	3.0	3AUG83	5AUG83	2	LB	LABOURS	3.00	NO
						12			20.00	
100	RC100	COMPL.OF RC.FOR SHED	5.0	6AUG83	10AUG83	3	CP	CARPENTERS	2.00	NO
						4	SF	STEEL FIXERS	2.00	NO
						5	TR	TRANS-MIXER	1.00	NO
						11	CC	CONCRETE	4.00	M3
						12			158.00	
110	PC110	P.C. LAYER AT G.L.	2.0	11AUG83	12AUG83	8	KK	KARAK	2.00	NO
						7	KR	KARAWAN	4.00	NO
						9	FR	FORMAGY	1.00	NO
						10	RT	RAYECE TABLIA	1.00	NO
						11	CC	CONCRETE	35.00	M3
						12			875.00	

ACT. NO.	ACT. CODE	ACTIVITY DESCRIPTION	EST. DUR.	START DATE	FINISH DATE	RES. NO.	RES. CODE	RESOURCE DESC.	ESTIMATED QUANT/DAY	UNIT OF MEASURE
120	DL120	DELIVERY OF ROOF PARTS	7.0	24JUL83	30JUL83	12			358.00	
130	ER130	ERECTION OF ROOF PARTS	5.0	13AUG83	17AUG83	6	EG	ERECTING GROUP	1.00	NO
						12			150.00	
140	DL140	DELIVERY OF POSTER	14.0	24JUL83	6AUG83	12			54.00	
150	ER150	ERECTION OF POSTER	3.0	18AUG83	20AUG83	6	EG	ERECTING GROUP	1.00	NO
						12			67.00	
160	DM160	DEMOBILIZATION & CLEAN UP	3.0	21AUG83	23AUG83	12			250.00	

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

PROJ. STARTS 2/ 7/1983

** ACTIVITY COSTING REPORT **
PARKING SHED EXERCISE
P.SH.EX.
REPORT SERIES 1005
TIME = 18.00

LAST ACCESS 15/10/1983

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER

ACT. NO.	ACTIVITY DESCRIPTION	ACT. CODE	EST. DUR.	RES. NO.	RESOURCE DESCRIPTION	ESTIMATED QUANT/DAY	UNIT COST	ESTIMATED TOTAL
10	MOBILIZATION & SURVEYING	MB010	4.0					
				1	SURVEYING GROUP	1.00	10	40.00
					* TOTAL *			40.00
20	EXCAVATION	EX020	6.0					
				2	LABOURS	5.00	5	150.00
				12		30.00	0	0.00
					* TOTAL *			150.00
30	P.C.FOOTINGS	PC030	2.0					
				3	CARPENTERS	2.00	7	28.00
				5	TRANS-MIXER	1.00	150	300.00
				11	CONCRETE	4.00	50	400.00
				12		100.00	0	0.00
					* TOTAL *			728.00
40	ST.FIX.(WORKSHOP*FOOTINGS)	ST040	1.0					
				4	STEEL FIXERS	2.00	9	18.00
					* TOTAL *			18.00
50	R.C.FOOTINGS	RC050	4.0					
				3	CARPENTERS	2.00	7	56.00
				4	STEEL FIXERS	2.00	9	72.00
				5	TRANS-MIXER	1.00	150	600.00
				11	CONCRETE	3.00	50	600.00
				12		113.00	0	0.00
					* TOTAL *			1328.00
60	ST.FIX.(WORKSHOP*COL.+SEHELLS)	ST060	3.0					
				4	STEEL FIXERS	2.00	9	54.00
					* TOTAL *			54.00
70	RC.(COL.+SEMELLS)	RC070	5.0					
				3	CARPENTERS	2.00	7	70.00
				4	STEEL FIXERS	2.00	9	90.00
				5	TRANS-MIXER	1.00	150	750.00
				11	CONCRETE	5.00	50	1250.00
				12		158.00	0	0.00
					* TOTAL *			2160.00
80	ISOLATING LAYER	IS080	1.0					
				2	LABOURS	1.00	5	5.00
				12		50.00	0	0.00
					* TOTAL *			5.00
90	BACKFILLING+COMPACTION	BC090	3.0					
				2	LABOURS	3.00	5	45.00
				12		20.00	0	0.00
					* TOTAL *			45.00

PROJECT MANAGEMENT SYSTEM
OSMAN A OSMAN COMPANY

RUN DATE 15/10/1983

PROJ. STARTS 2/ 7/1983

** ACTIVITY COSTING REPORT **
PARKING SHED EXERCISE

LAST UPDATE 1/ 7/1983

LAST ACCESS 15/10/1983

P.SH.EX.
REPORT SERIES 1005
TIME = 18.00

ALL ACTIVITY NUMBER
SORT ON: ACTIVITY NUMBER

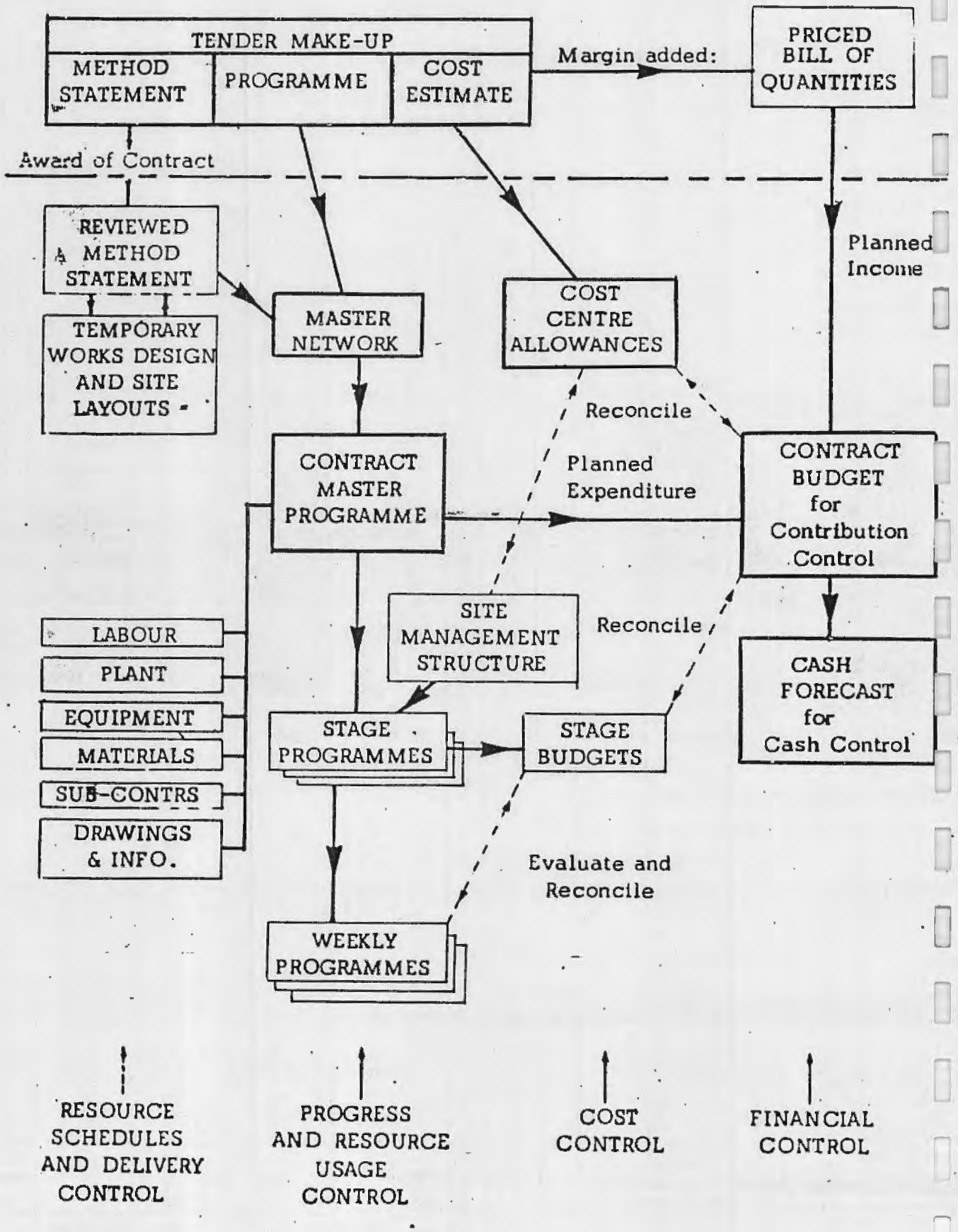
ACT. NO.	ACTIVITY DESCRIPTION	ACT. CODE	EST. DUR.	RES. NO.	RESOURCE DESCRIPTION	ESTIMATED QUANT/DAY	UNIT COST	ESTIMATED TOTAL
100	COMPL.OF RC.FOR SHED	RC100	5.0					
				3	CARPENTERS	2.00	7	70.00
				4	STEEL FIXERS	2.00	9	90.00
				5	TRANS-MIXER	1.00	150	750.00
				11	CONCRETE	4.00	50	1000.00
				12		158.00	0	0.00
					* TOTAL *			1910.00
110	P.C. LAYER AT G.L.	PC110	2.0					
				8	KARAK	2.00	4	16.00
				7	KARAWAN	4.00	4	32.00
				9	FORMAGY	1.00	5	10.00
				10	RAYECE TABLIA	1.00	15	30.00
				11	CONCRETE	35.00	50	3500.00
				12		875.00	0	0.00
					* TOTAL *			3588.00
120	DELIVERY OF ROOF PARTS	DL120	7.0					
				12		358.00	0	0.00
					* TOTAL *			0.00
130	ERECTION OF ROOF PARTS	ER130	5.0					
				6	ERECTING GROUP	1.00	700	3500.00
				12		150.00	0	0.00
					* TOTAL *			3500.00
140	DELIVERY OF POSTER	DL140	14.0					
				12		54.00	0	0.00
					* TOTAL *			0.00
150	ERECTION OF POSTER	ER150	3.0					
				6	ERECTING GROUP	1.00	700	2100.00
				12		67.00	0	0.00
					* TOTAL *			2100.00
160	DEMOBILIZATION & CLEAN UP	DM160	3.0					
				12		250.00	0	0.00
					* TOTAL *			0.00
	* TOTAL ESTIMATED COST FOR ALL ACTIVITIES *							15626.00

Planning using Network Technic

Critical Path Method.

C.P.M.

FRAMEWORK OF CONTROL FOR A CONTRACT



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RGB/pl

N.W

When any Contract is awarded the following informations are known -

1- the Price.

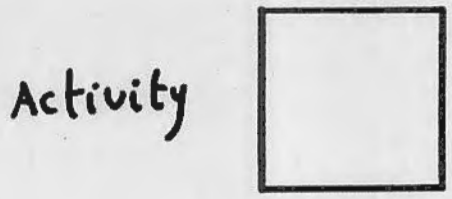
2- The agreed Time.

3- The cost [estimated]

4- The Contribution :-

which is :-

Contract Price — Contract Cost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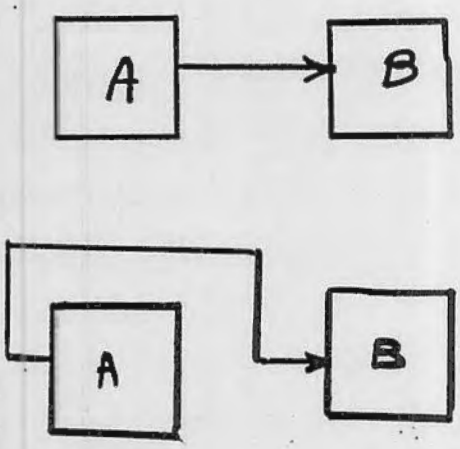
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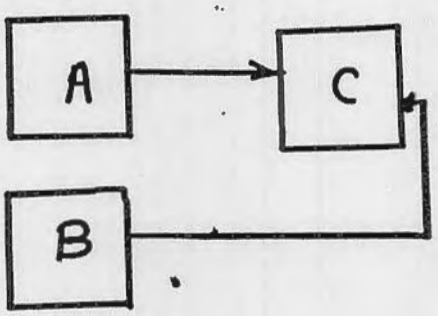
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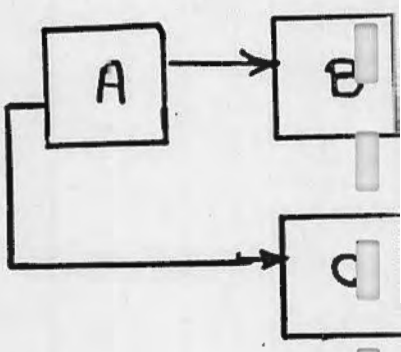
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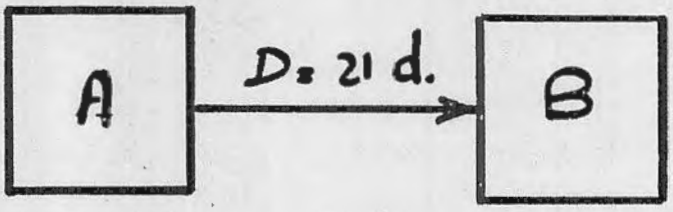
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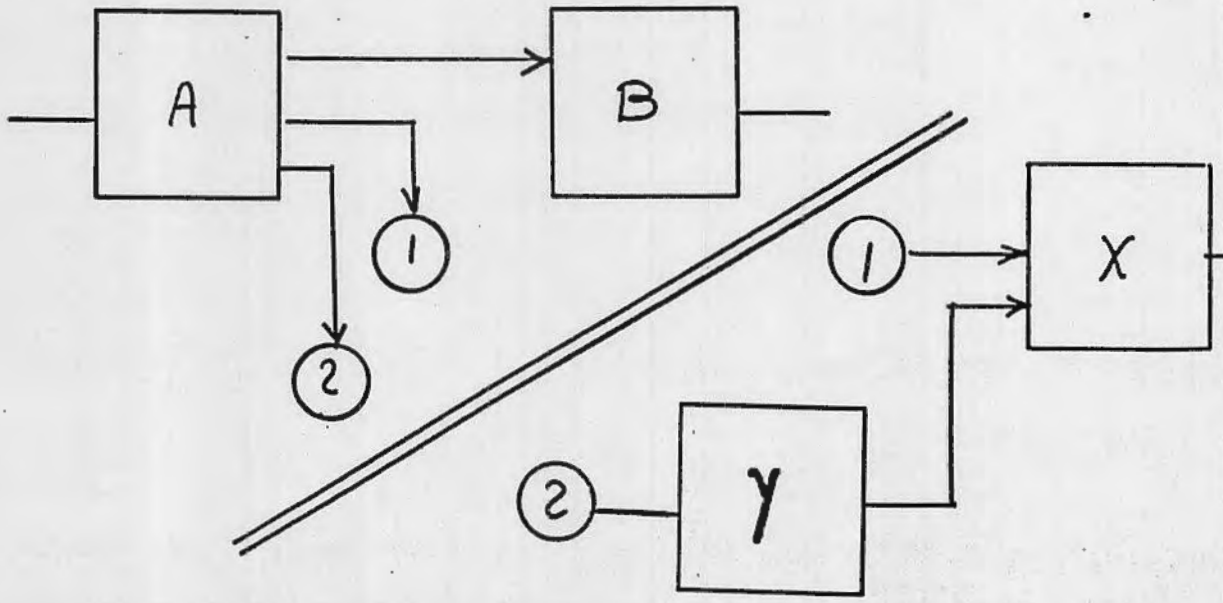
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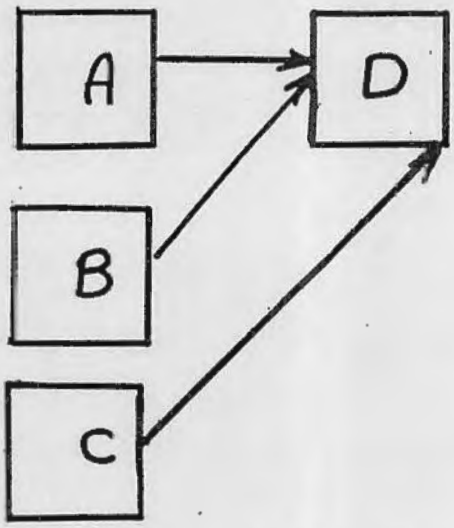
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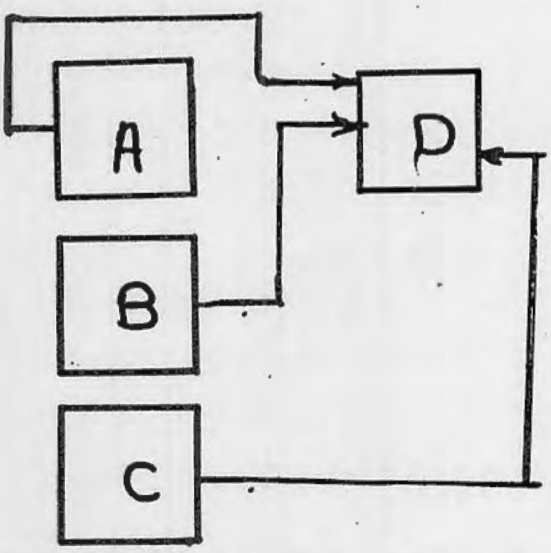
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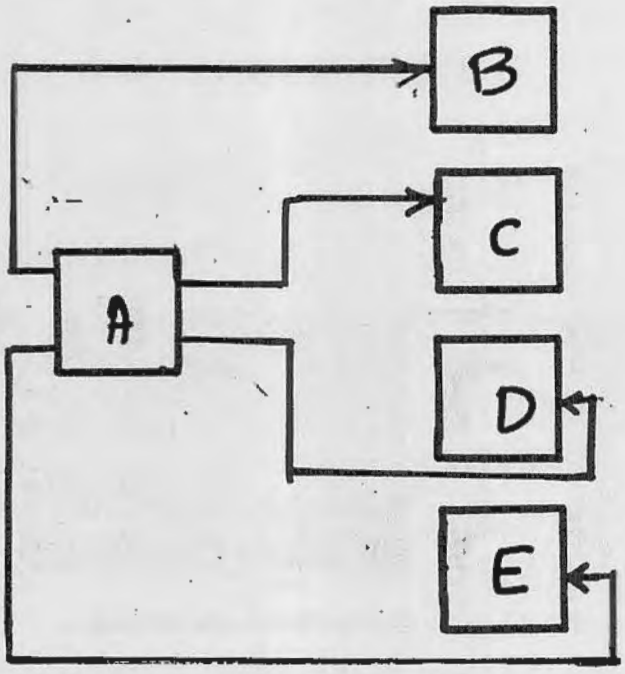
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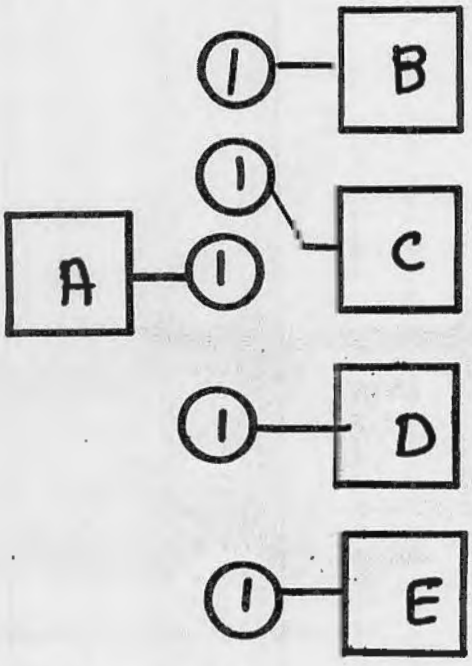
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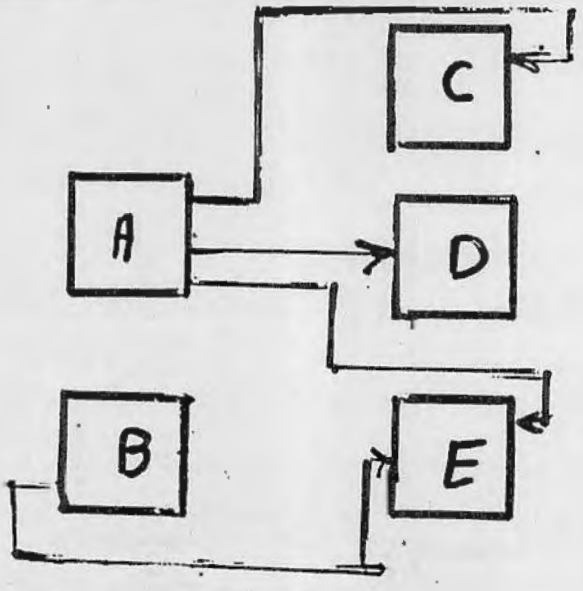
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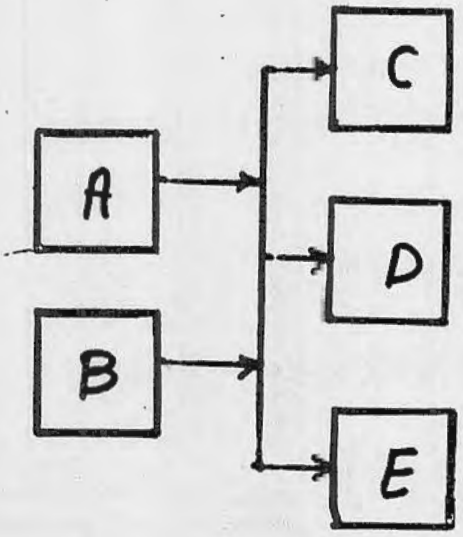
C
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Basic planning Requirements

1- Definition of jobs to be done.

2- Definition of the resources available

3- Definition of the resources required

4- A list of the technological restrictions which make it necessary to do some jobs in a specific sequence.

5- Dates for completion of the project or stages of the project.

6- Out puts of men, plants and equipments used to execute each job, for estimating the duration.

Steps that should be done :

1. Study the Contract + Drawings.
2. Method Statement.
3. Listing of Activities.
4. Logic Net Work.
5. Duration Analysis Sheets.
6. E.S. ⟶ C.P.
7. Analysis of C.P.
8. L.F. & T.T. & T.F. .....
9. Bar Chart (Master Programme).
10. Resource Schedules.
11. Managing Float
12. Stage Programme & Weekly Programme

مشروع :

جدول بيان شروط ومواصفات العقد

جدول " "

ا	البيان	الشروط / المواصفات

مشـــروع :

جدول دراسة ومقارنة رسومات المشروع

جدول " "

م	رقم اللوحه	اسم اللوحـــه	الملاحظـــــات	متابعه التعديـــل	
				تم التعديل	تاريخ التعديل

ادارة التنمية الادارية

المشروعات

ناولون العرب

ن احمد عثمان وشركاه

مشروع :

جدول دراسه طريقه تنفيذ الاعمال

* رقم النشاط:

* كود النشاط:

* اسم النشاط:

جدول " "

	بيان الاعمال	ملاحظات

مشـــــروع :

جدول الانشطه الخاصه بالبرنامج الزمنى

جدول " "

م	اسم النشاط بالبرنامج	وحده	رقم البند بالعقد	اجمالى الكميه	قيمه البند	ملاحظـــات

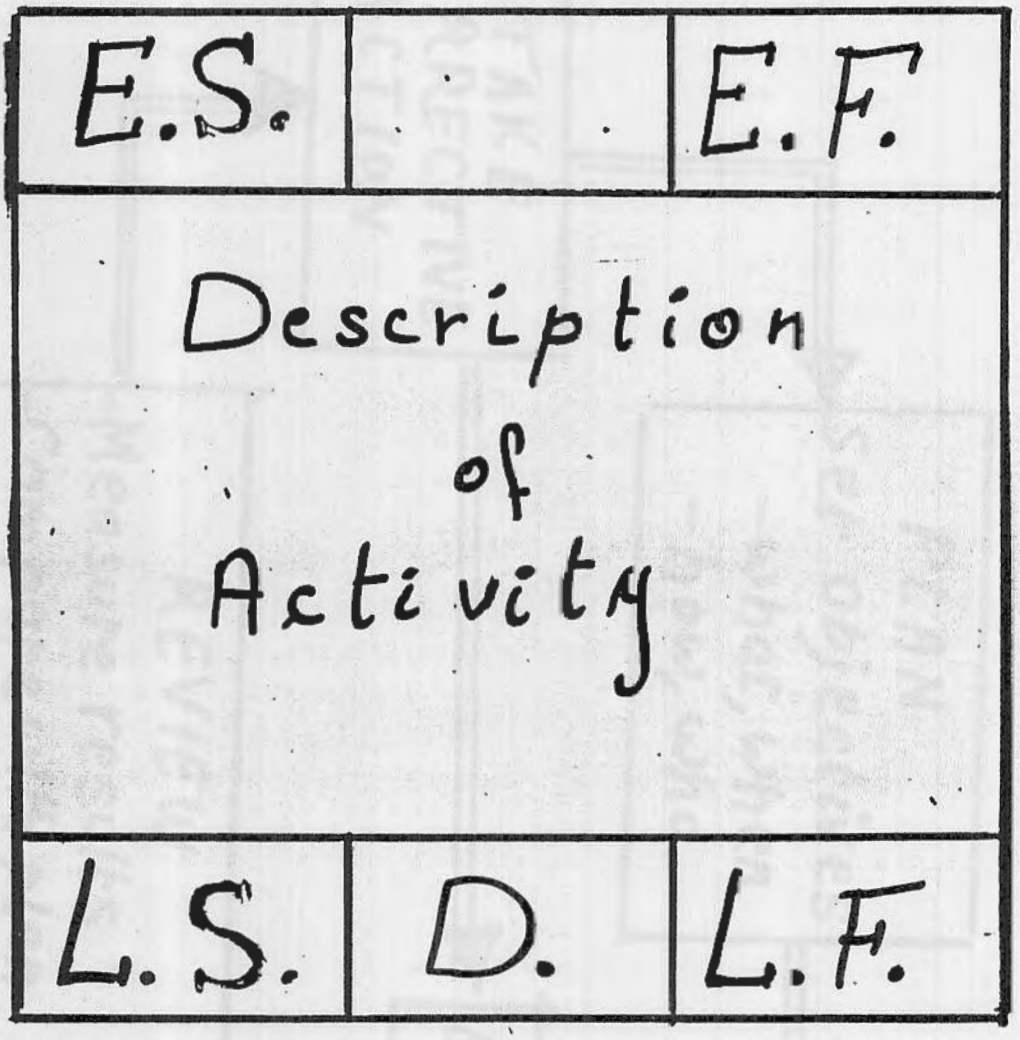
عثمان احمد عثمان وشركاه

مشروع : المشروعات

جدول حساب مده تنفيذ الانشطه

جدول " "

م	بيان الاعمال	وحده	الكميه	طريقه التنفيذ المجموعه / المعده	معدل التنفيذ للمجموعه	ايام العمل الفعليه	ايام العمل القياسيه	ملاحظات


E.S.
E.F.
Description
of
Activity
L.S.
D.
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Feature of Good PLAN

1- Simple.

2- Easily understood.

3- Related to area of Responsibility

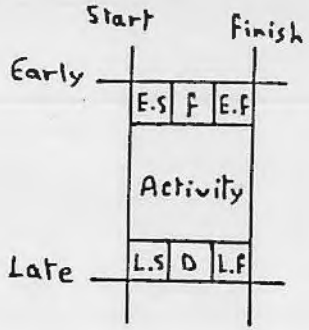
4- Showing objectives in details

5- Realistic.

6- Easily monitored (controled).

7- Facilitating END result forcas

Simple Exercise showing steps
to follow in Network Technic
using C. P. M.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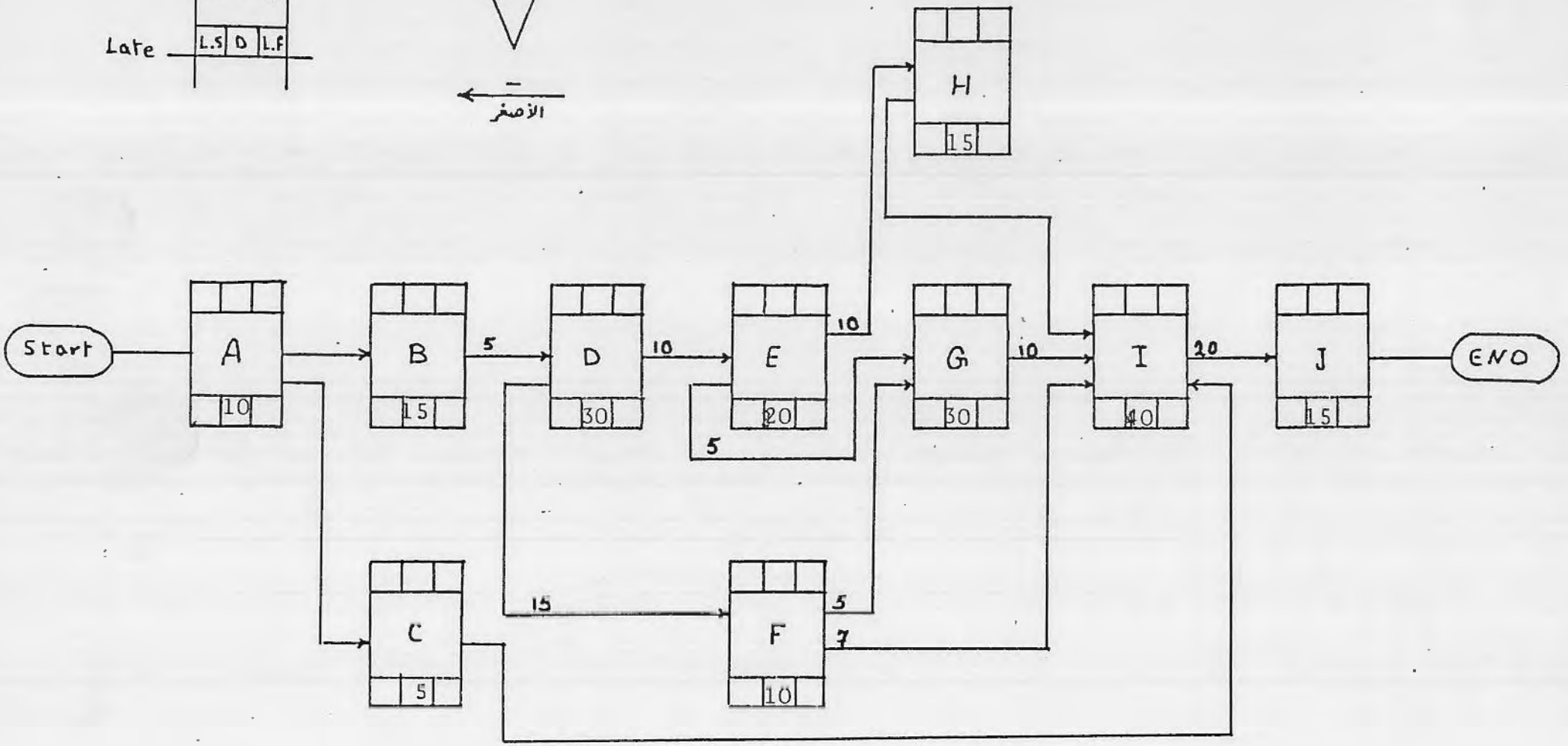
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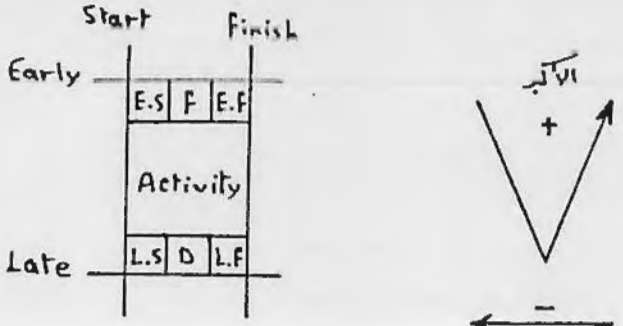
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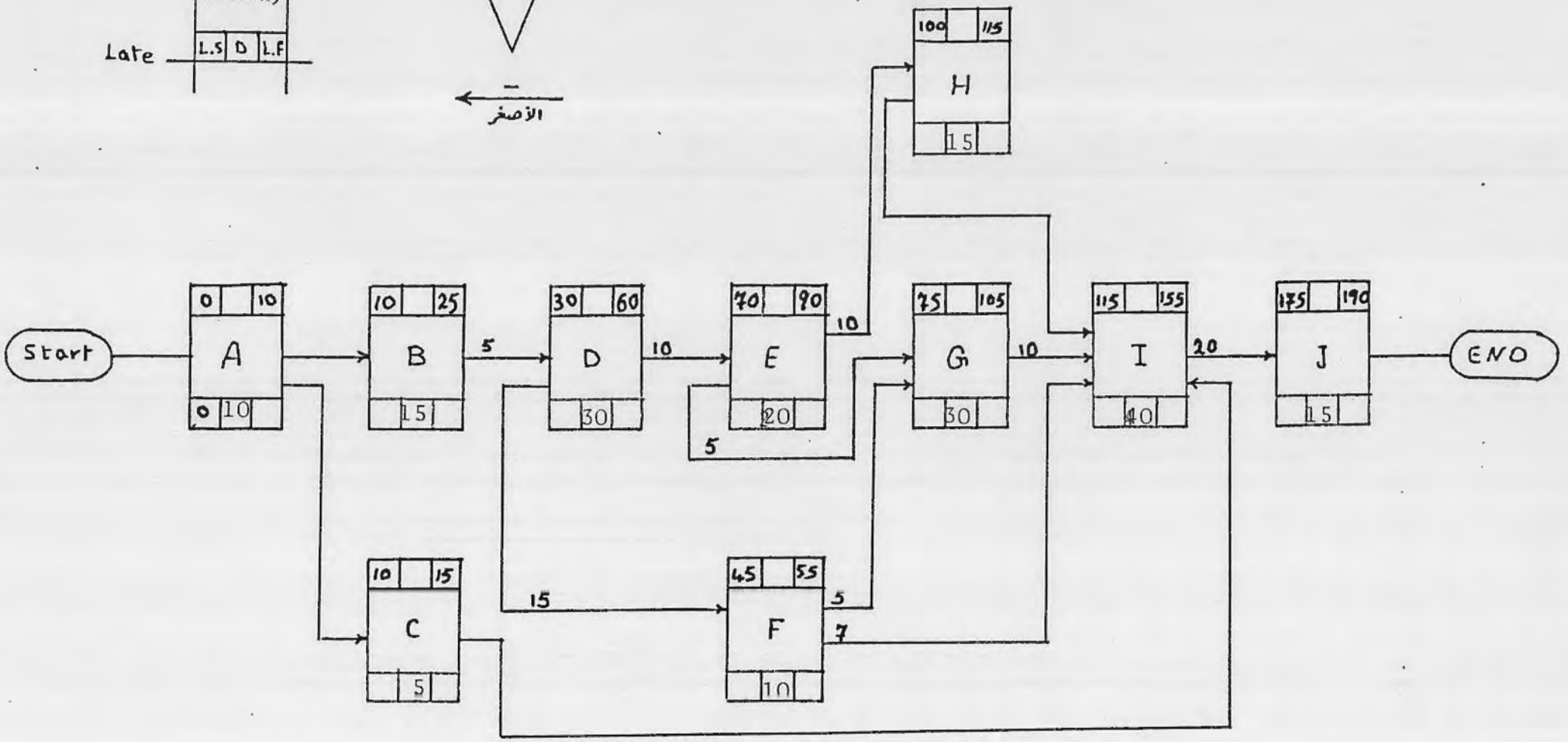
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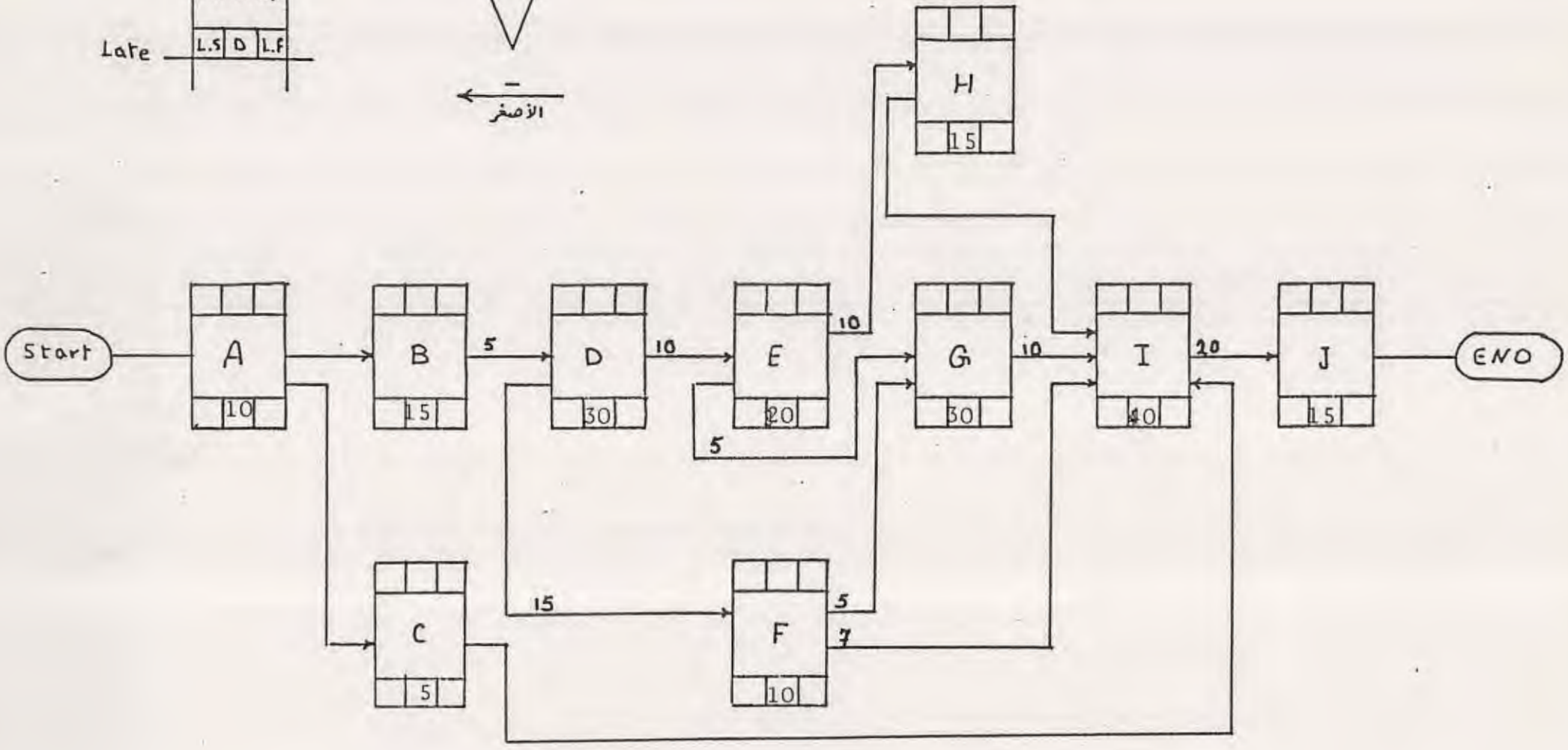
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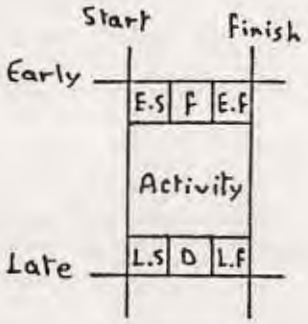
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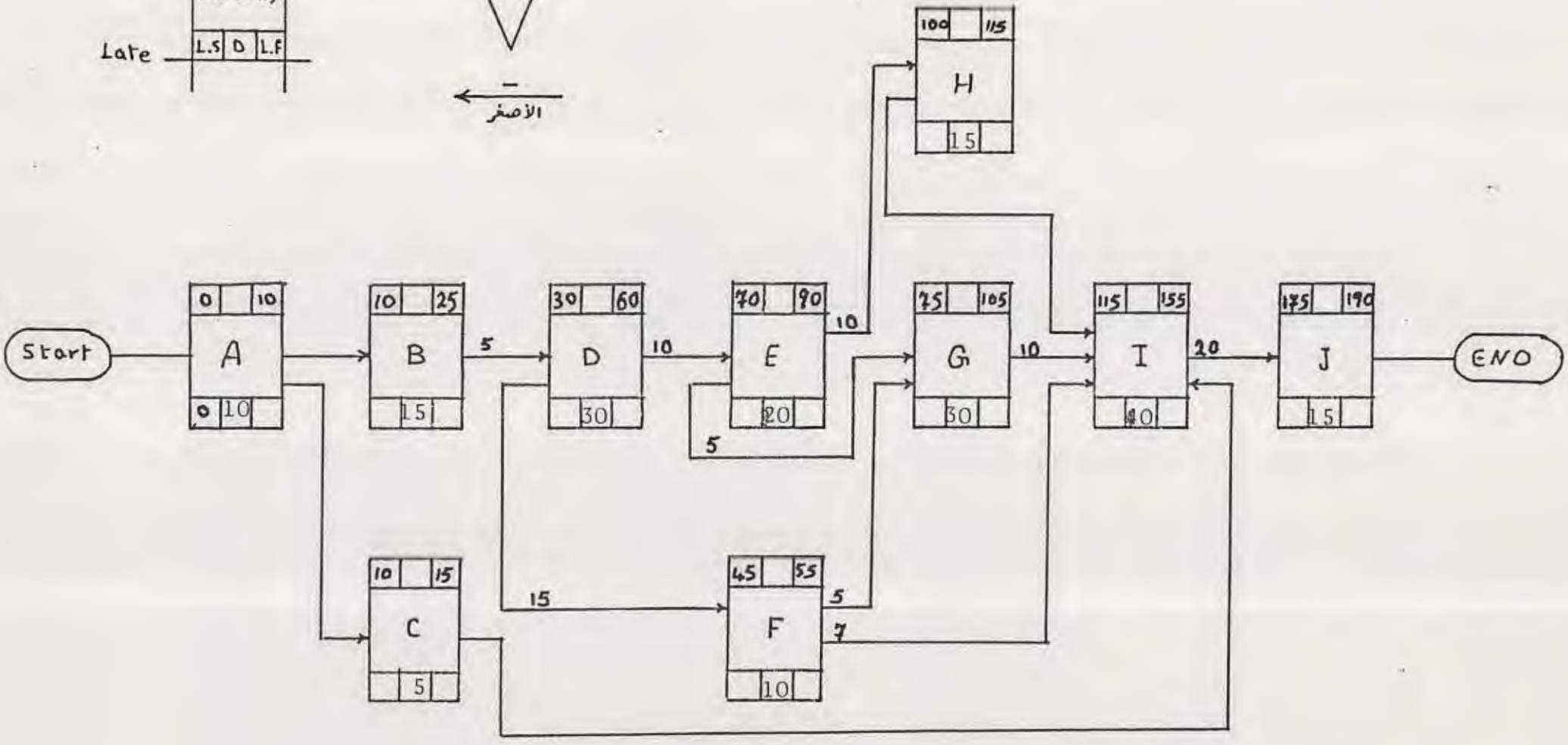
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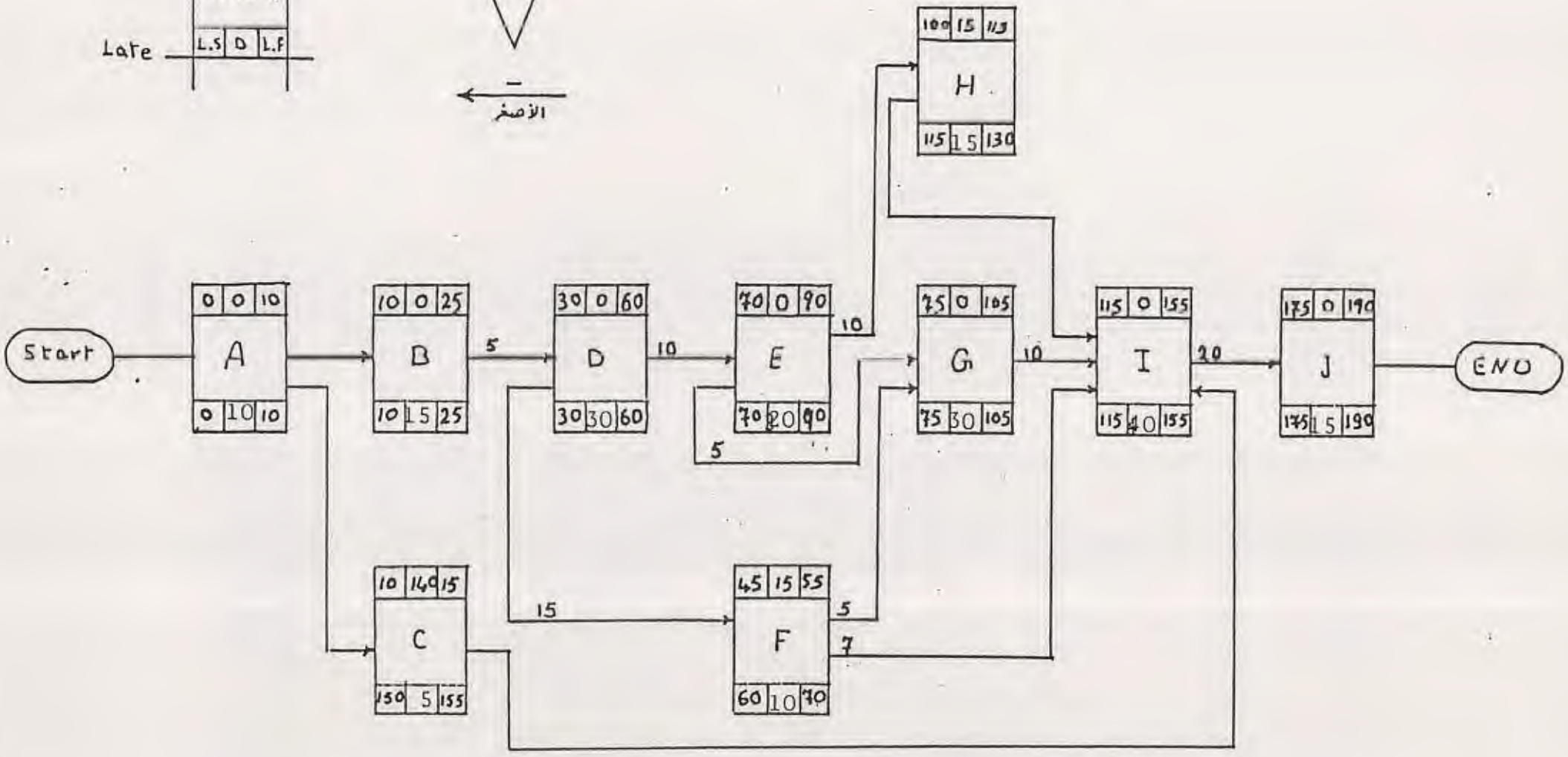
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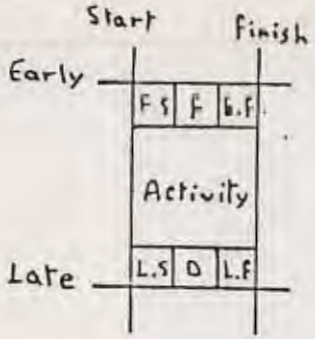
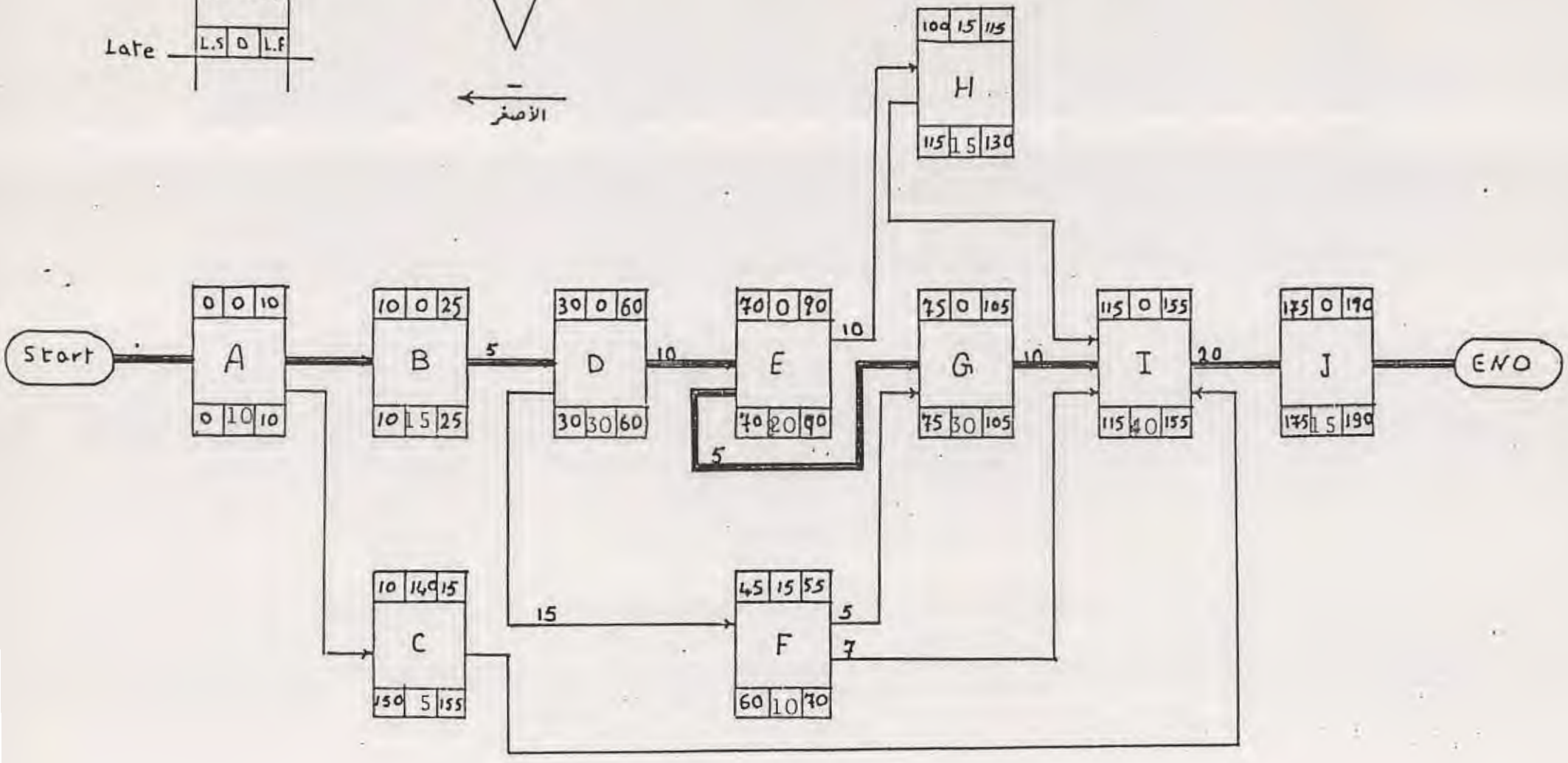
5
7


Start
Finish
Early
E.S
E
E.F
Activity
Late
L.S
D
L.F

الأكبر
+
−
الأصغر


Start
A
0 0 10
0 10 10
B
10 0 25
10 15 25
C
10 140 15
150 5 155
D
30 0 60
30 30 60
E
70 0 90
70 20 90
F
45 15 55
60 10 70
G
75 0 105
75 30 105
H
100 15 115
115 15 130
I
115 0 155
115 40 155
J
175 0 190
175 15 190
END
5
10
10
5
15
10
7
10
20

Line of Balance for Repetative work.

(1)

م	بيان العمل	أ	ب	جـ	د	هـ	و	ز	ح	ط	ى
	عدد الغاز	٢١	٢٦	٢	١٦	١٣	١	٣	٢	١	١
١	الحفر	٢٨٦	١٩٣	٢٦٤	٢٨١	٣٧٩	٤١٥	—	—	—	—
٢	ح.ع للابيار	١٦٧	١٢٩	—	—	—	—	—	—	—	—
٣	ح.م للقواعد	—	—			—	—	—	—		
	---										

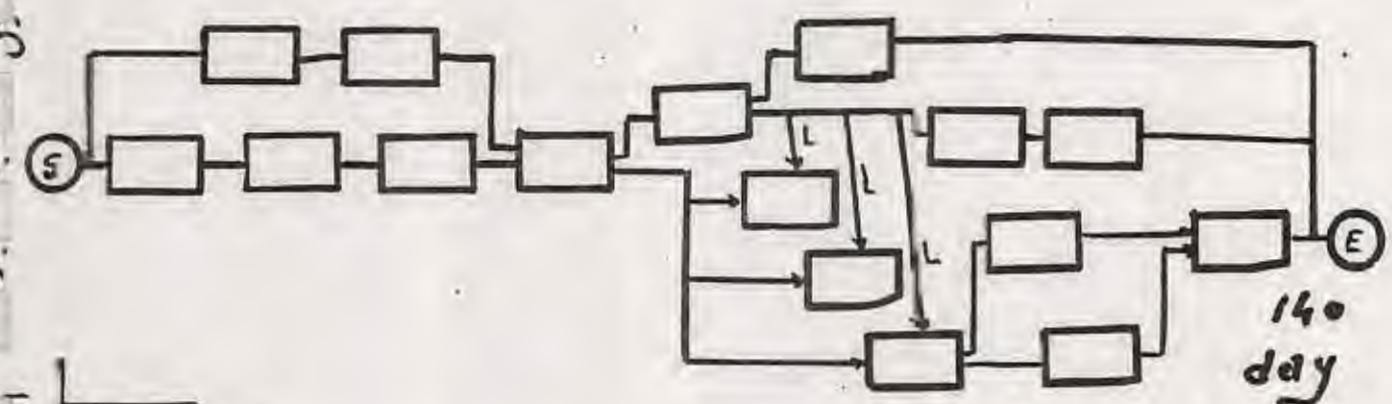
٢١ × ٢٨٦

م	بيان العمل	أ	ب	جـ	د	هـ	و	ز	ح	ط	ى
١	الحفر	٦٠٠٦	٥٠١٨	٥٢٨	٤٤٩٦	٤٩٢٧	٤١٥	—	—	—	—
	[اجمالي الكميات بالغاز]	—	—	—	—	—	—	—	—	—	—
				—	—	—	—				—

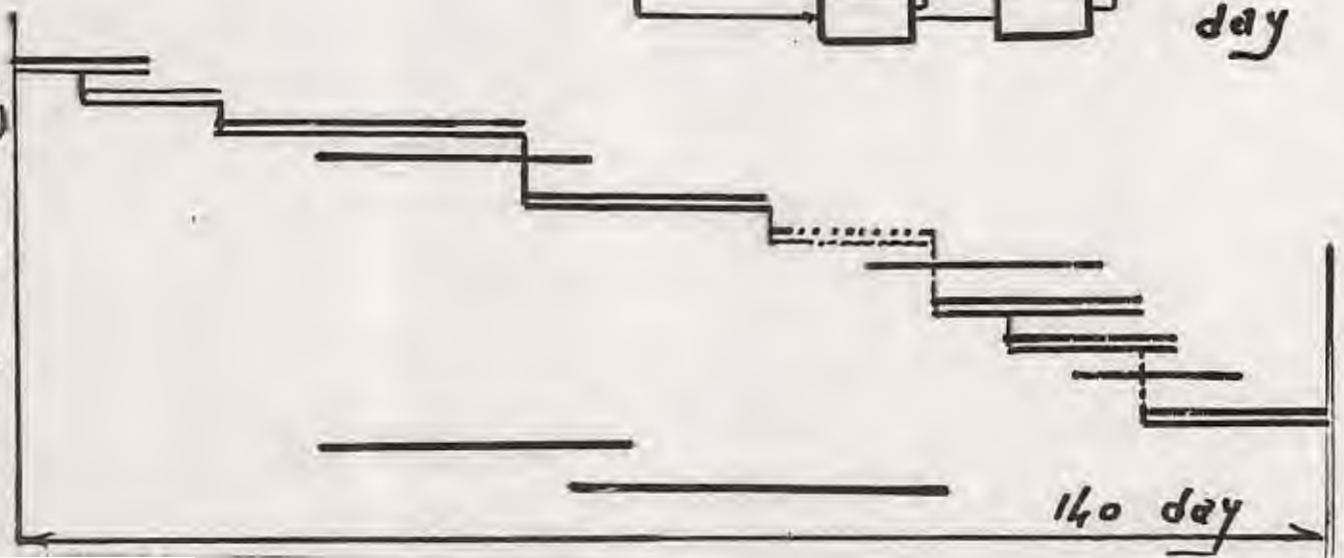
الكميات المتوسطة للبلوك

م	بيان العمل	الوحدة	اجمالي الكميات	عدد الغاز	المتوسط
١	الحفر للاساسات	٣	٢٣٣٥٦,٩٨	٨٦	٢٧٢٠,—
٢	ح.ع للاساسات	٣	١٤٩٥٨,٥٠	٨٦	١٧٤,—
٣	ح.م للقواعد	٣	٣١٩٠,—	٨٦	٣٨,—

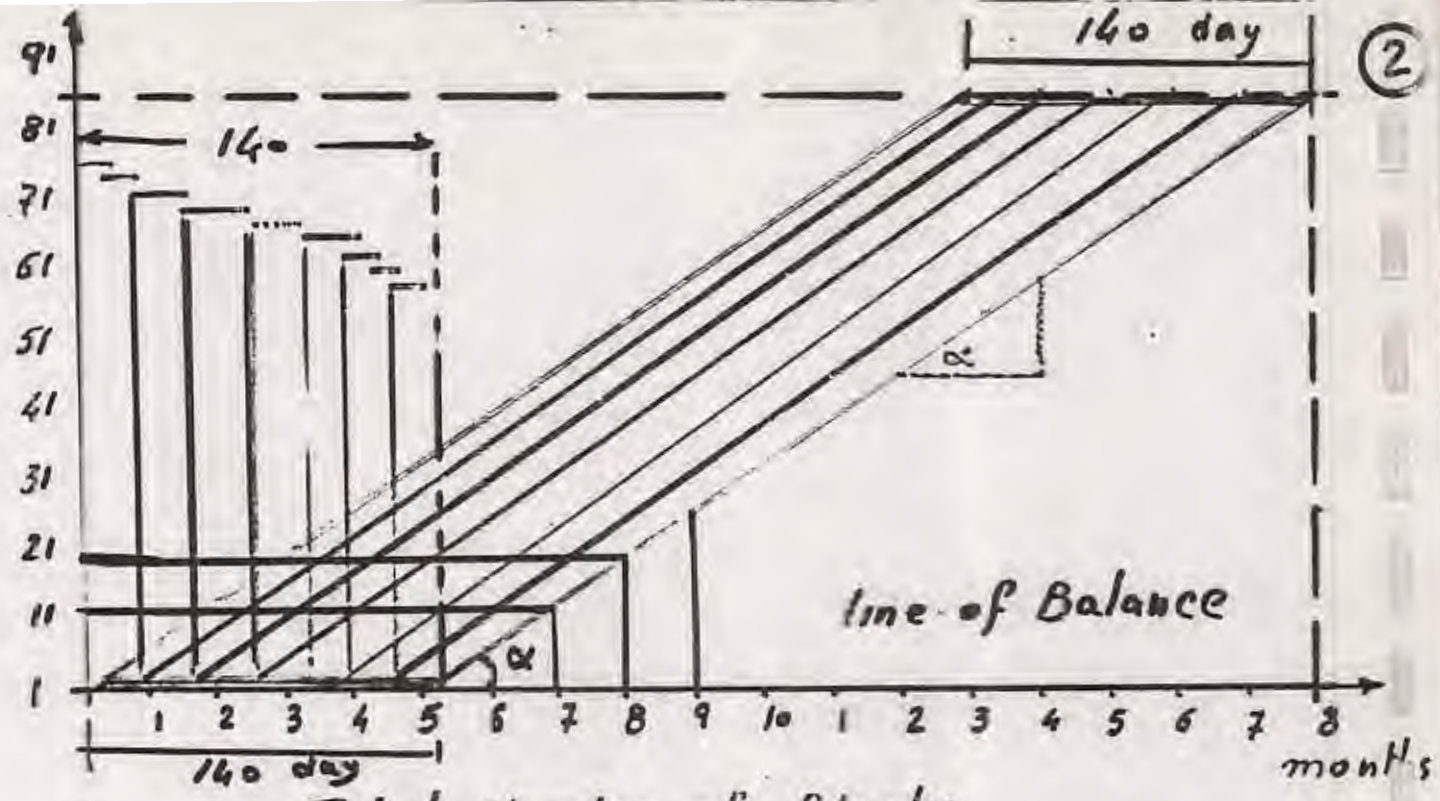
التحليل الاحتمالي للبلوك



البرنامج الفني للبلوك المتوسط



Bl.



$$\tan\alpha = \frac{\text{Total Number of Blocks}}{\text{Total duration of Proj} - \text{duration of one block}}$$

$$= \frac{86}{540 - 140} = 0.215$$

$$\therefore \boxed{\tan\alpha = 0.215}$$

assume 2 weeks & get number of Blocks to be finished = x.

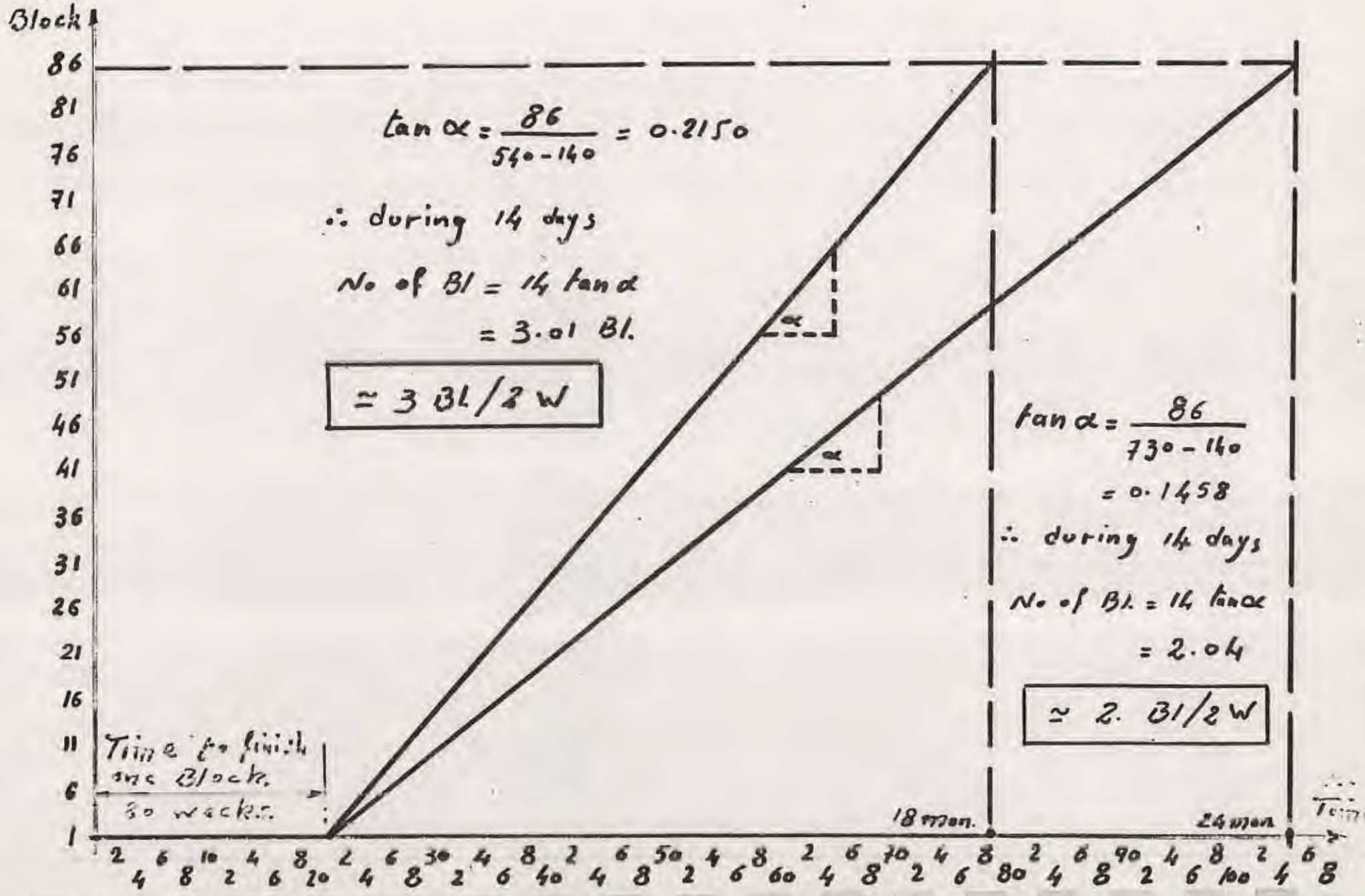
Since: $\tan\alpha = \frac{x}{14}$ $\therefore x = 3$ blocks.

∴ if T. duration of Project = 24 months = 730 days

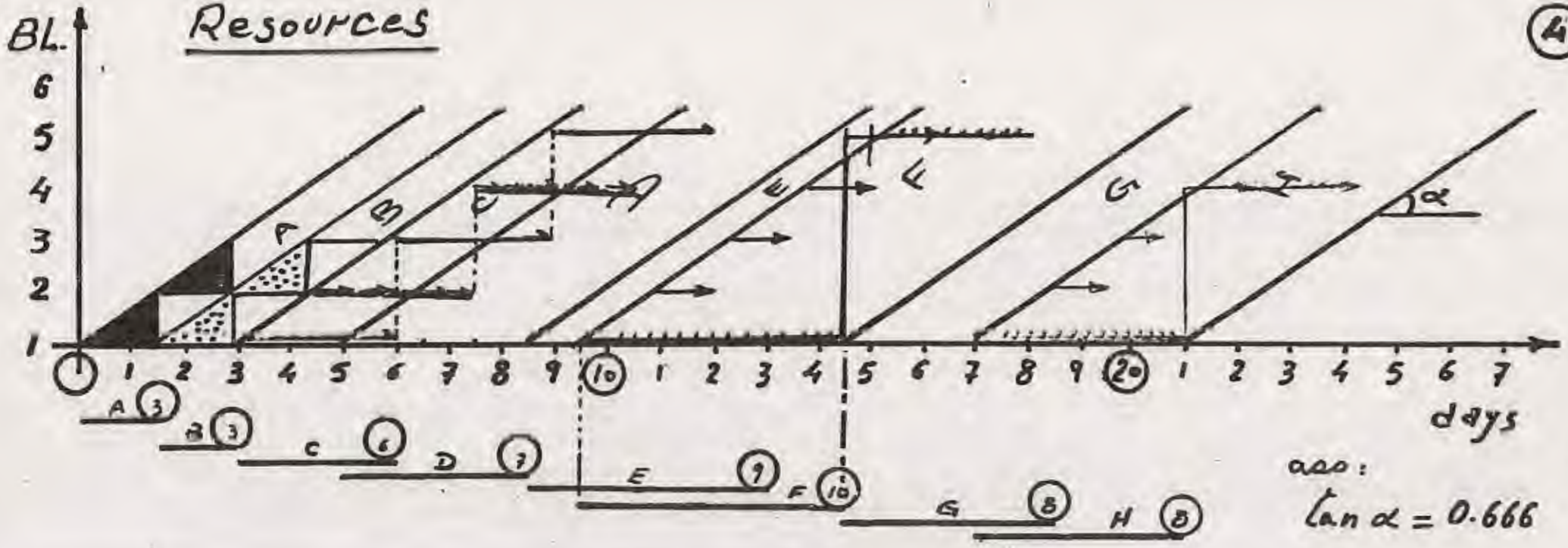
$$\therefore \tan\alpha = \frac{86}{730 - 140} = 0.1458$$

$$\therefore \tan\alpha = \frac{x}{14 \text{ days}} \quad \therefore x = \tan\alpha(14) = 2.04$$

∴ every 14 days 2 Block should be finished.

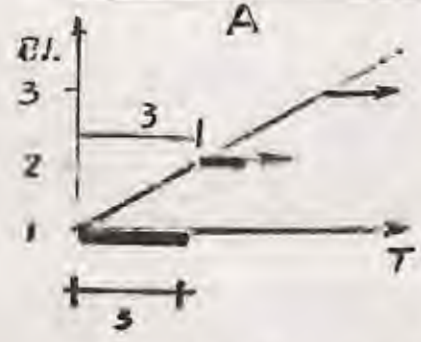

Block
86
81
76
71
66
61
56
51
46
41
36
31
26
21
16
11
6
1
$\tan\alpha = \frac{86}{540-140} = 0.2150$
∴ during 14 days
No of Bl = 14 tan α
= 3.01 Bl.
≃ 3 Bl/2 W
$\tan\alpha = \frac{86}{730-140}$
= 0.1458
∴ during 14 days
No of Bl. = 14 tan α
= 2.04
≃ 2. Bl/2 W
α
α
Time to finish one Block.
30 weeks
18 mon.
24 mon.
Time
2 4 6 8 10 2 4 6 8 20 2 4 6 8 30 2 4 6 8 40 2 4 6 8 50 2 4 6 8 60 2 4 6 8 70 2 4 6 8 80 2 4 6 8 90 2 4 6 8 100 2 4 6 8

Resources



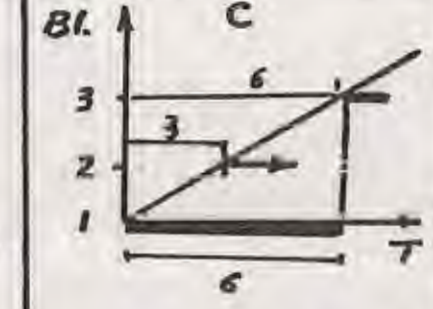
app:

$\tan \alpha = 0.666$



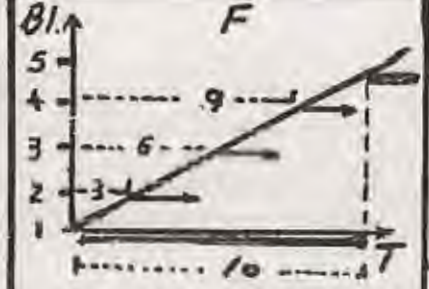
- dur. of Act. = 3 d.
- start of Bl. = 3 d.

∴ one group is needed during the project



- dur. of Act. = 6 d.
- start of Bl. ev. 3 d.

∴ 2 groups are needed during the project.



- dur. of Act. = 10 d.
- st. of Bl every 3 d.

∴ 4 groups are needed.

[$\frac{10}{3} = 3.3$ gr. ∴ 4 groups]

Conclusion

- $\tan \alpha = \dfrac{\text{Total Number of Units of Proj}}{\text{Total time of Proj} - \text{Time of one Bl.}}$

- Number of groups needed for one Act.

$$= \frac{\text{Total Duration of the Act.}}{\cot \alpha}$$

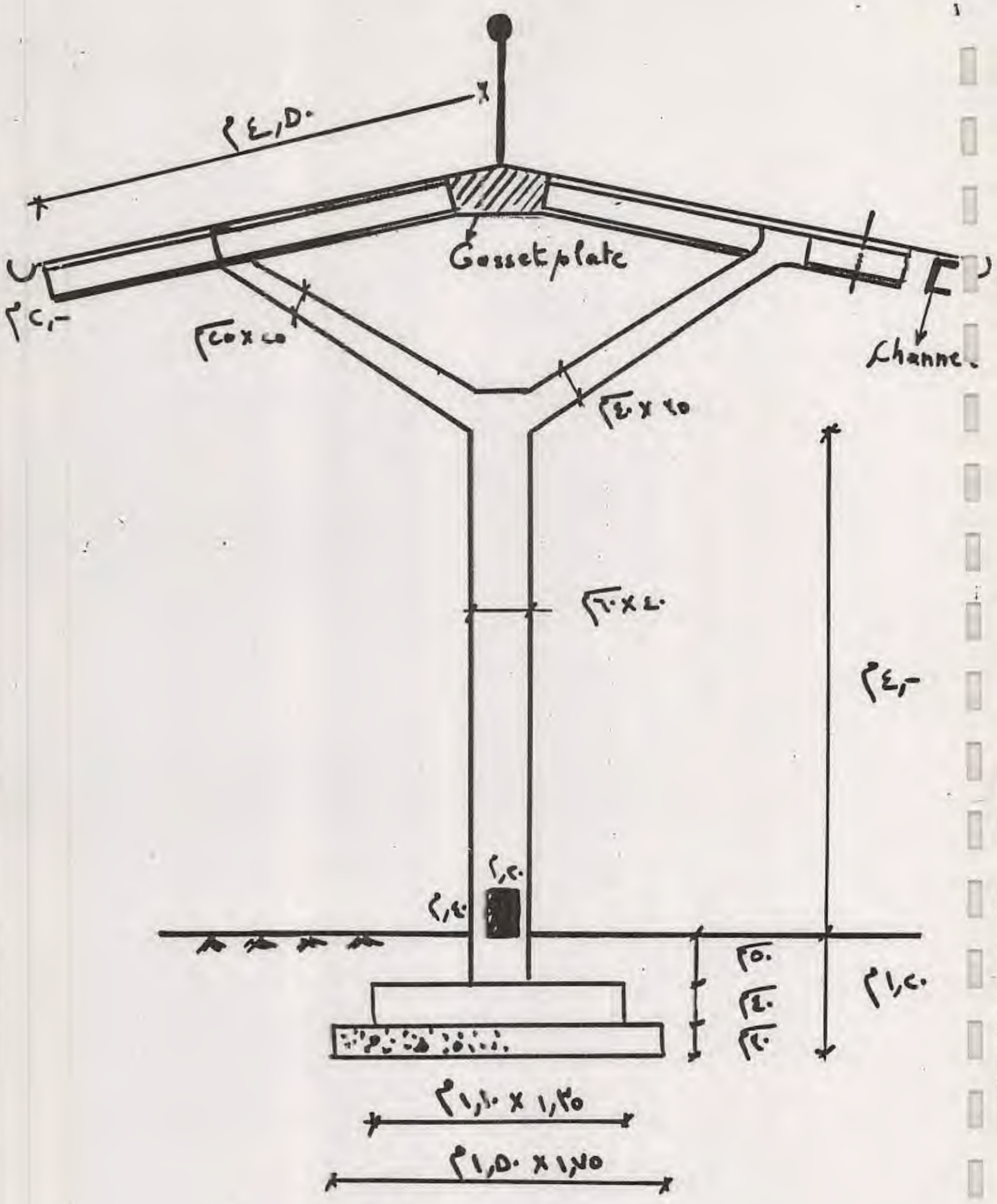
- this should be encreased to the nearest full number.

بسم الله الرحمن الرحيم

تمرين

انشاء مظله سيارات بأحد
مشروعات الشركه

أكتوبر عام ١٩٨٣



مظلة إنتظار سيارات

مشروع انشاء مظله سيارات

* المشروع هو انشاء مظله سيارات تسع لعدد ٦ سيارات والتفاصيل توضحها الرسومات الخاصه بالمشروع .

* شروط التعاقد الاساسيه هي :-

١ - مده المشروع لا تزيد عن ٦٠ يوما .

٢ - اجمالى قيمه التعاقد ٩٣١٠ر٠٠ جنيه .

٣ - يتم توريد الخرسانه المسلحه بالدنابر من محطه الخلط الخاصه بمشروع مجاور .

٤ - على المقاول توفير جميع احتياجاته .

٥ - يتم عمل المستخلصات كل اسبوع .

٦ - يتم خصم ١٠٪ من قيمه كل مستخلص .

٧ - يتم الدفع الفعلى لكل مستخلص بعد اسبوع من تقديمه .

٨ - التسليم النهائى للمظله بعد ٦ شهور .

٩ - غرامه التأخير هى ١ ٪ من قيمه التعاقد عن كل يوم تأخير .

المطلـوب عملـــه :ـ

١ ـ ترتيـــب الانشـــطه •

٢ ـ التحليل الشبكى المنطقى للاعمال •

٣ ـ ايجاد البدايات المبكره للانشطه •

٤ ـ حساب المده اللازمه لانهاء المشروع •

٥ ـ تحديد الانشطه الحرجه والانشطه
التى لها مده ســـماح •

٦ ـ رسم البرنامج الزمنى العام للمشروع •

٧ ـ عمل الموازنه التقديريه وحساب التدفقات
النقديه للمـشروع •

مقايسه المشـــــروع

م	بيـــان الاعمـــــــال	الوحده	الكميه	القيمه	الاجمالى	ملاحظـــات
١	ـ حفر فى ارض صخريه للأساســـــات	م٣	٢٥	ـر ٧	١٧٥ ر ٠٠	
٢	ـ خ ٠ ع أسفل الاساســـــــات	م٣	٤٠	٥	٢٠٠	
٣	ـ خ ٠ م لزوم الاساســـــــات	م٣	٣	١٥٠	٤٥٠	
٤	ـ خ ٠ م للاعمـده والكمـــــرات	م٣	٩	١٧٥	١٥٧٥	
٥	ـ طبقه عازله لزوم الاساســـــات	م٢	٢٥	٢	٥٠	
٦	ـ ردم ودك حول الأساســـــات	م٣	٢٠	ـر ٣	٦٠	
٧	ـ خ ٠ ع لزوم ارضيه المظله ٢٠ سم	م٣	٣٥	٥٠	١٧٥٠	
٨	ـ بالمقطوعيه توريد لوازم الســـقف	بالمقطوعيه	ـ	٢٥٠٠	٢٥٠٠	
٩	ـ بالمقطوعيه تركيب سقف المظلـــه		ـ	٧٥٠	٧٥٠	
١٠	ـ بالمقطوعيه توريد لوازم الاعـــلان		ـ	٧٥٠	٧٥٠	
١١	ـ بالمقطوعيه تركيب الاعـــــلان		ـ	٢٠٠	٢٠٠	
١٢	ـ اعمال التشطيب للمظلـــــه		ـ	٧٥٠	٧٥٠	

أجمالى قيمه المشـــروع ٠٠ ر ٩٢١٠ جنيه

بيان تكاليف الاعمـــال

م	بيـــان الاعمـــال	الوحدة	الكميه	الفئـه	الاجمالى	ملاحظـــات
١	– جميع تجهيزات الموقـــع		–	٥٠٠	٥٠٠	
٢	– حفر لزوم الاساسات فى الصخـر	م٣	٢٥	٥ ر ٥	١٣٨	
٣	– خ ٠ ع لزوم الاساســات	م٢	٤٠	٤	١٦٠	
٤	– خ ٠ م لزوم الاساســات	م٣	٣	١٢٠	٣٦٠	
٥	– خ ٠ م لزوم الاعمده والكمرات	م٣	٩	١٤٠	١٢٦٠	
٦	– اعمال الطبقه العازله للاساسات	م٢	٢٥	٦ ر ١	٤٠	
٧	– اعمال الردم حول الاساســات	م٣	٢٠	٤ ر ٢	٤٨	
٨	– خ ٠ ع لزوم ارضيه المظله ٢٠ سم	م٣	٣٥	٤٠	١٤٠٠	
٩	– بالمقطوعيه توريد لزوم الســقف		–	٢٠٠٠	٢٠٠٠	
١٠	– بالمقطوعيه تركيب الســقف		–	٦٠٠	٦٠٠	
١١	– بالمقطوعيه توريد لزوم الاعــلان		–	٦٠٠	٦٠٠	
١٢	– بالمقطوعيه تركيب الاعــلان		–	١٦٠	١٦٠	
١٣	– اعمال التشــطيب		–	٦٠٠	٦٠٠	

أجمالـى تكاليف انشاء المظله ٠٠ ر ٧٨٦٦ جنيه

جدول الانشطه بالمشروع

بعد دراسه الظروف وتحليل بنود الاعمال يمكن ان نكون الانشطه التاليه لعمل التحليل الشبكى للمشروع وهـــى :-

م	أسم النشـــــاط	م	أسم النشـــــاط
١	خ ٠ م لقواعد الاســـاســـات	٩	اعمال تجهيزات ومساحـــه
٢	اعمال الطبقه العازلـــــــه	١٠	تجهيز حديد تسليح الاساسات
٣	تكمله اعمال خ ٠ م لاعمده المظله	١١	توريد لوازم السقف للمظلـــه
٤	اعمال الحفـر للاســـــات	١٢	توريد هيكل الاعـــــلان
٥	تركيب سـقف المظلـــــــه	١٣	خ ٠ م لزوم رقاب الاعمده وكمره الفصل
٦	اعمال التشطيب والتسلـــيم	١٤	خ ٠ ع لقواعـد الاساســات
٧	تركيب الاعـلان بالمظلـــــه	١٥	تجهيز حديد تسليح الاعمـده
٨	اعمال الردم والدك حول الاساس	١٦	خ ٠ ع لزوم ارضيه المظلـــه

Activity	Cost	Manag.	skill. lab	unskill.lab	Equip	Material	Du
Electrical							
Drilling							
Excavation							
Gen. Contract							
plumbing							
Tank work							
site work							
Cont. Price	300,000.0	10 %	15–20 %	20–25 %	20–60 %	20–60 %	

Contract Price is either :-

1- Estimated according to the historic construction curve for this type of work in the last 5 years

2- Estimated according to Tender study for each activity.

Try: 2

Activity	Cost	Manag.	skill. lab	unskill lab	Equip	Material	Dur.
Electrical	25 000						
Drilling	50 000						
Excavation	25000						
Gen. contract	35000						
plumbing	65-000						
Tank work	80000						
site work	20.000						
	300 000 o.K.						
Cont. Price	300,000.0	10 %	15 %	21.7	23.3 %	30 %	100 %
	300 000 o.K	30000	45000	65000	70 000	90000	

vertically we increase 20 000 to get 300 000.0
horizontally - decrease 15.000 - - - 300 000.0

	Activity	Cost	Manag.	skill. lab	unskill.lab	Equip	Material	D
			9 %	16 %	24 %	16 %	35 %	
o	Electrical	25000	2250	4000	6000	4000	8750	
			10 %	23 %	13 %	46 %	8 %	
o	Drilling	50000	5000	11500	6500	23000	4000	
			10 %	20 %	22 %	40 %	8 %	
o	Excavation	25000	2500	5000	5500	10000	2000	
			12 %	20 %	30 %	13 %	25 %	
o	Gen. Contract	35000	4200	7000	10500	4550	8750	
			10 %	20 %	10 %	25 %	35 %	
	plumbing	65000	6500	13000	6500	16250	22750	
			10 %	18 %	7 %	20 %	45 %	
	Tank work	80000	8000	14400	5600	16000	36000	
			10 %	20	25 %	15 %	30 %	
	site work	20000	2000	4000	5000	3000	6000	
	This Result is +,-		30450	58900	45600	76800	88250	
	than Try (2) By		+450	+13900	-19400	+6800	-1750	
	Cont. Price	300,000.0	10 %	15 – 20 %	20 – 30 %	15 – 50 %	10 – 60 %	
	Result of Try (2) is		30000	45000	65000	70000	90000	

Spread horizontal & check for Cost, Correct if needed

Add Vertical & check with results of Try(2), Correct if needed

Try 3

-5-0

Activity	Cost	Manag.	skill. lab	unskill lab	Equip	Material	Du
Electrical	25000	–	-250 (15%) 3750	–	-500 (14%) 3500	+750 (38%) 9500	
Drilling	50 000	–	-2750 (17.5%) 8750	+2250 (17.5) 8750	–	+500 (9%) 4500	
Excavation	25 000	-250 (9%) 2250	-2500 (16%) 2500	+5250 (43%) 10 750	-2500 (30%) 7500	–	
Gen. contract	35 000	-200 (11.4%) 4 000	-2000 (14.3) 5000	+2000 (35.7) 12500	-300 (12%) 4250	+500 (26.4%) 9250	
Plumbing	65 000	–	-3250 (15%) 9750	+5750 (19%) 12250	-2500 (21%) 13750	–	
Tank work	80 000	–	-2400 (15%) 12 000	+2400 (10%) 8000	–	–	
site work	20 000	–	-750 (16.3) 3250	+1750 (34%) 6750	-1000 (10%) 2000	–	
		-450	-13900	+19400	-6800	+1750	
	300,000.0						

* correction vertically respecting Total Cost assumed.

o	Activity	Cost	Manag.	skill. lab	unskill lab	Equip	Material	Du da
lo	Electrical	25000	9 % 2250	15 % 3750	24 % 6000	14 % 3.500	38 % 9500	10
20	Drilling	50000	10 % 5000	17.5 % 8750	17.5 % 8750	46 % 23000	9 % 4500	15
30	Excavation	25000	9 % 2250	10 % 2500	43 % 10750	30 % 7500	8 % 2000	12
.0	Gen. Contract	35000	11.4 % 4000	14.3 % 5000	36 % 12500	12 % 4250	26.5 % 9250	15
5	plumbing	65000	10 % 6500	15 % 9750	19 % 12250	21 % 13750	35 % 22750	12
10	Tank work	80000	10 % 8000	15 % 12000	10 % 8000	20 % 16000	45 % 36000	10
10	site work	20000	10 % 2000	16.3 % 3250	34 % 6750	10 % 2000	30 % 6000	6
		300000						
		300,000.0	30000	45000	65000	70000	90000	
			10 %	15 %	22 %	23 %	30 %	

Final Corrected Matrix for Contract.