CONSTRUCTION PLANNING & MANAGMT

SYLLABUS :

CH. 01 : Basics of Project Managment and Network Rule.

CH. 02 : PERT Analysis

CH. 03 : CPM Analysis

CH. 04 : CPM Cost Model Analysis (Crashing and updating of a CPM network).
Resource Allocation, Resource levelling, A-O-N Network, and Ladder Network.

CH. 05 : Engineering Economy [IMP.]

CH. 06 : Construction Equipment ESE only

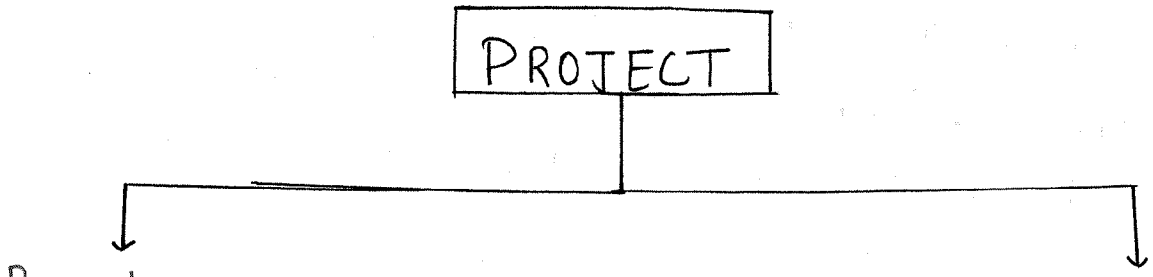
CH. 07 : Contracts and Tenders. ESE

CH. 08 : Quality Control, Safty and Welfare. ESE only

CH. 09 : Estimating Costing. ESE only

CH. 10 : Site investigation and Mangment and, Productivity and operations. ESE only

INTRODUCTION:-



Research or development Type of Project

Repetitive type of Project like Civil Engineering, Construction Project and Machenical Engineering, Production Project.

Done by CPM Analysis

t → Time of Completion of an Activity

Proposed Plan:

Construction of Village Roads.

→ Desk Study via Map

→ Field Survey and Transmit Work for Verification of Alignment

→ Formations of DPR (detailed Project Report).

→ TA (technical Approval) by Head quarters engineers
Signalled by PIU. [JE, AEE, AEE].

→ AA (adminstrative Approval)

→ TS (Technically Sanctioned by –
STA: State Technical Authority
CTA: Central Technical Authority.

→ NT: (Notice inviting Tender)
Published in leading newspaper.

→ Formation of BOQ (Bill of quantity).

→ Uploading of BOQ on Website of department.

→ Tender

→ Submission of Tender by bidder including 2% Earnest Money (EM) With Paper cutting of NIT. → To avoid unnecessary Competition.

→ CS Comparitive Statement

→ Tender Awarded

→ Contractor and Engineers Will Visit site to stand the Work.

→ Work started by Contraction

→ Payment Made to Contractor after deduction of 10% of SD (Security deposity) inclusive of E.M from each running bill.

→ Now 8%. SD has deducted i.e 8 Lac Rupees from Running Bill.

1 Cr Running Bill

↓

2%. EM = 2 Lac. → Already deposited at the time of tender.

EM → To avoid unnecessary competitions.

S.D → As a Security when Contractor Will not complete the Work or any defect in Work

S.D will Refund after six Month (or) one Monsoon Season of completion of Work after.

1. BASICS OF PROJECT MANAGEMENT AND NETWORK RULE.

Project Management :- It deals with Material and human resources both to increase Productivity and efficiency.

The Project should be completed in Minimum time by using optimum resources.

For Completion of a Project, two basics things are required:

(1) Material Resources
(2) Manpower Resources.

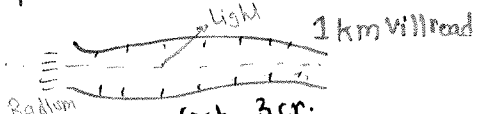
} Active Resorces ⇒ Money is passive Resources.

Every Project whether it is big (or) Small has three objectives:

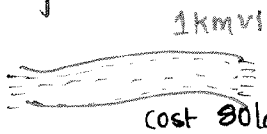
(1). It should be completed in Minimum time. (optimum time).

(2). It should use available Man Power and material resources as far as possible Without delaying in Completion of a Project.

(3). It should be completed With minimum of Capital investment.



Cost 3 cr.
Not feasible
Rejected.



cost 80 lakh
(Feasible)

If Man Power is available locally When Contractor labour is not available then use Man Power available locally even little price higher. These price is later adjusted.

1 KM State Highway

time of completion: 9 Month.

↓

Minm duration for completion of a project.

There are 3 important Phases of Project Management :-

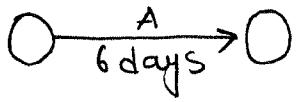
(1). Planning (or) Project Planning :

This is most important ~~Phase of~~ Phase of Project Mangement. Planning involves defining the objective of a project, listing of job (activity) or arrangement of jobs that must be Performed, determining gross requirement for material, equipment, man power and prepairing estimate of Cost and durations for Completion of Project.

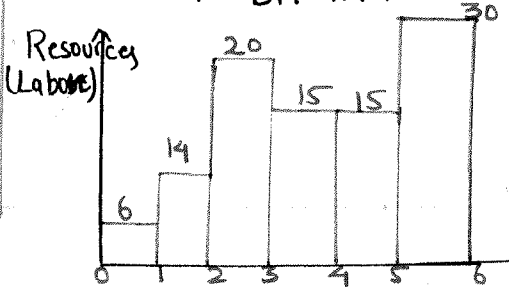
(2). Scheduling (or) Project Scheduling :

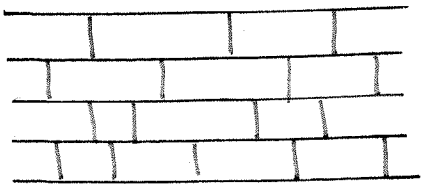
Scheduling is the allocation of resources such as material resources equipments, man power resources in appropriate manner such that it results in efficient Working. Scheduling also involves Sequencing of Activities.

Note:- In tradional technique of design, Planning and Scheduling are perfored as Single Step.



A : Brick work



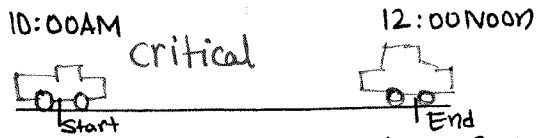


6days : No. of labor - 100labor

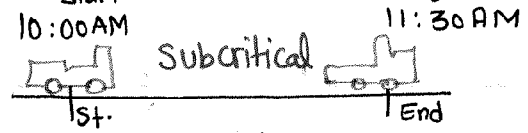
→ Resource allocation.
(This Allocation is not good. Not uniform)

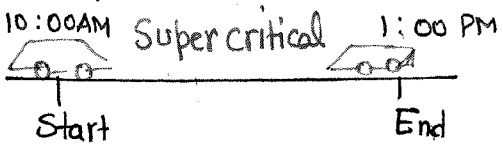
(3) Controlling (or) Project Controlling :

It is the Process to identify Critical Activity (running on Schedule time), Sub-critical Activity (non-critical activity i.e already completed beforre the schedule duration) and Super Critical Activity (delayed activity i.e Completed after Scheduled duration of projects).

1) 

Travel duration = 2hr allowed.

2) 

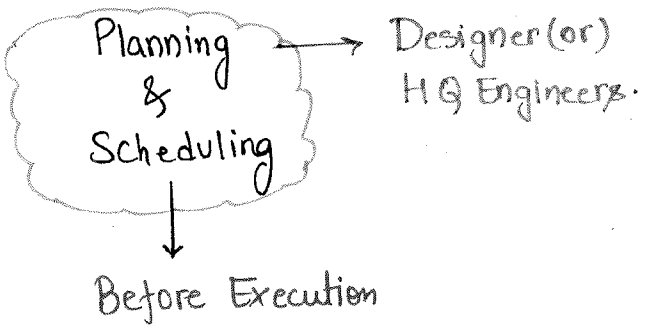
3) 

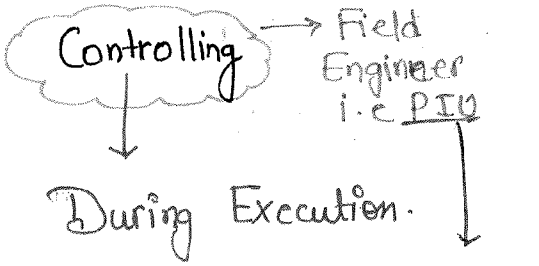
Critical and Supercritical activities are given extra attention in a Project.

Therfore, of regular interval of times Network is updated and project Progress is reviewed.

Frequency of updating will increase towards completion of a Project.

Note:- Planning and scheduling are performed before execution of Project Wheras ~~Scheduling~~ Controlling is Carryied on during execution of the project.





PIU: Program implementation Unit.