

PLANNING AND ANALYSIS OF HIGHWAY BRIDGE USING MICROSOFT PROJECT AND PRIMAVERA 6

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Abstract - This research work brings out certain common elements of risks and issues involved for any project. For a construction project it is very important to look out for the threshold and risks involved for it to be handled easily and comfortably. Management of these risks and issues are very important to achieve the objectives of the project. Construction industry has been following method for managing these risks and issues to be arising from a project. But this will be a question for a firm if they diversify or when they enter into any new venture of business domain. To understand this model of risk handling in the business the author have taken a case study for developing a risk mitigation plan by using analytical method and the same with the help of risk management computing tools using Primavera (P6) and finally comparing the results thus achieved. The analytical model is the one using the manual techniques for assessing risks involved from the experience, knowledge and competency gained in the business domain. Using Primavera (P6) the risk in been managed by creating several models generated which explains the process of additions of risks, identification of type of risk, calculation of exposure values, calculation of risk impact, assigning the person responsible to the risk, time frame of risk, preparation of control plans if the risk occur. Finally the results thus obtained from both the methods are been compared and the results are been calculated.

Key Words: CPM, PRIMAVERA P6, MS PROJECT, basics of CPM scheduling, EPS, Gantt chart

1. INTRODUCTION

Planning and scheduling is important role in construction projects because of the increasing complexities in this field. Construction Planning is the necessary warning to Scheduling and determining general sequence, defining labor tasks, construction methods and assigning responsibilities. Inappropriate planning can lead to major delays in the project work. For the planning and scheduling work huge amount of paperwork, which makes the management very burdensome. These problems can be solved using a project management software which helps to give a planned approach to planning. In this study, a case of a highways bridge has been taken to demonstrate how proper planning and scheduling is done using primavera and MS project.

1. MSP INTRODUCTION

Planning and scheduling is important role in construction projects because of the increasing complexities in this field. Construction Planning is the necessary warning to Scheduling and determining general sequence, defining labor tasks, construction methods and assigning responsibilities. Inappropriate planning can lead to major delays in the project work. For the planning and scheduling work huge amount of paperwork, which makes the management very burdensome. These problems can be solved using a project management software which helps to give a planned approach to planning. In this study, a case of a highways bridge has been taken to demonstrate how proper planning and scheduling is done using primavera and MS project.

1.2 PLANNING WITH MSP PROJECT DETAILS:

Name of the project:	Construction of Highway bridge in thiruporur - nememli road.
Client:	Highways department
Consultant:	R.S.K. CONSTRUCTION
Contractor:	Three key Builders Pvt. Ltd., Tuticorin
Construction period:	Jan. 2019 - Feb. 2020
Type of contract:	Lump sum or cost plus fixed fee contract
Estimated cost:	4 crores

1.3 MICROSOFT PROJECT FILE

1.3.1 Gantt chart

Planning of the project activity in step by step manner to create the order of the work activity in corresponding details with the time details the following gantt chart fig.1 mentioned below.

1.3.1 GANTT CHART

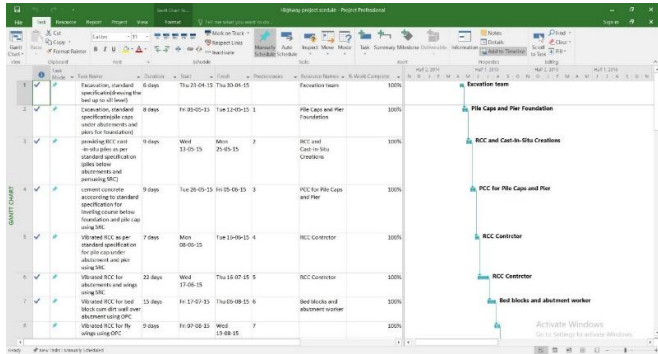


Fig 1.3.1 Gantt chart

1.3.3 RESOURCE SHEET

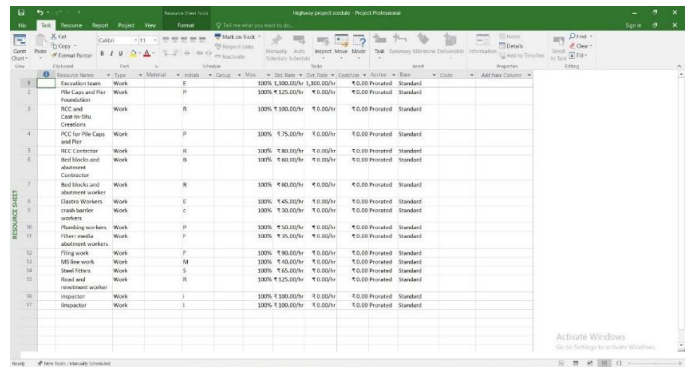


Fig 1.3.3 Resource sheet diagram

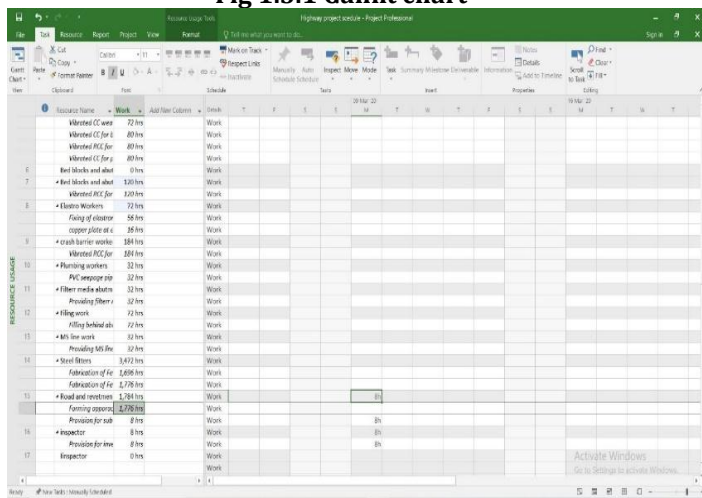


Fig 1.3.2 Gantt chart

1.3.4 RESOURCE USAGE

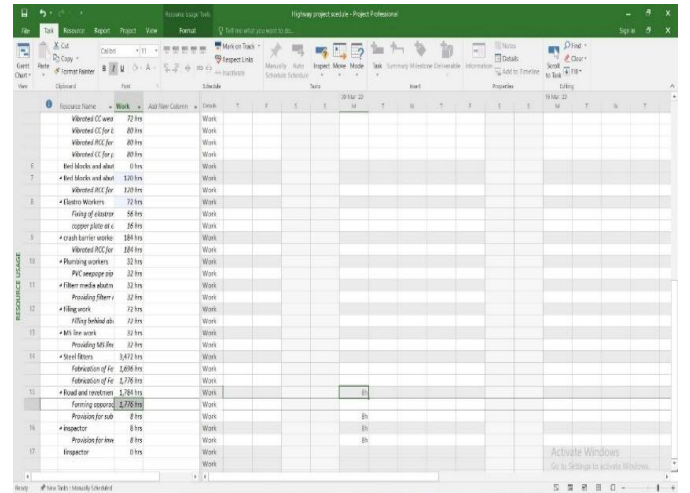


Fig 1.3.4 Resource usage

1.3.2 NETWORK DIAGRAM

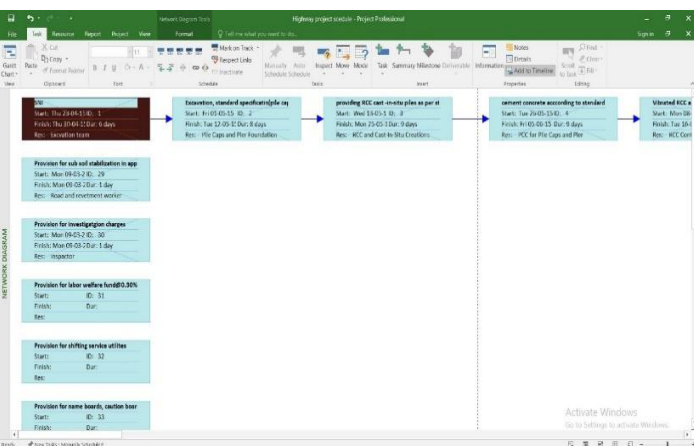


Fig 1.3.2 Network diagram

1.3.5 TASK SHEET

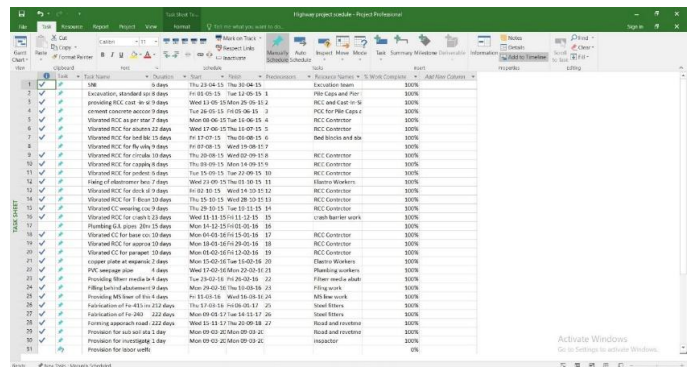


Fig -1.3.5 Task sheet

1.3.6 TASK USAGE

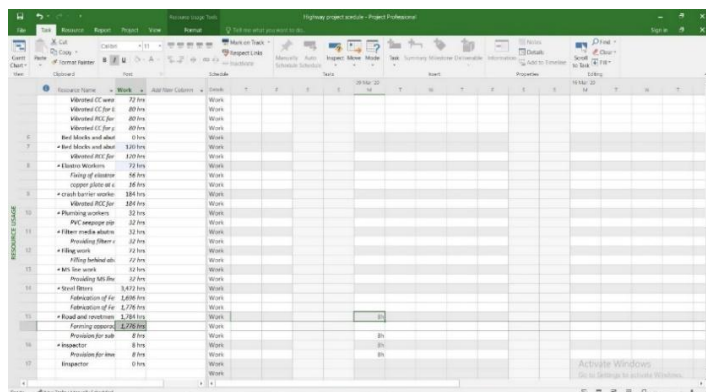


Fig 1.3.6 Task usage

1.3.7 TASK SHEET

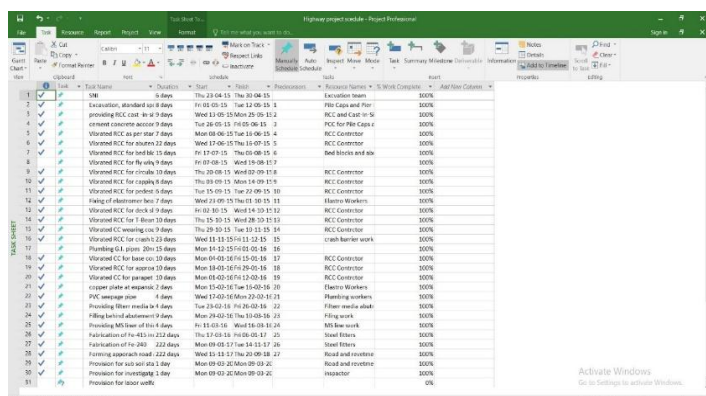


Fig 1.3.7 Task sheet

3.7 TRACKING SHEET

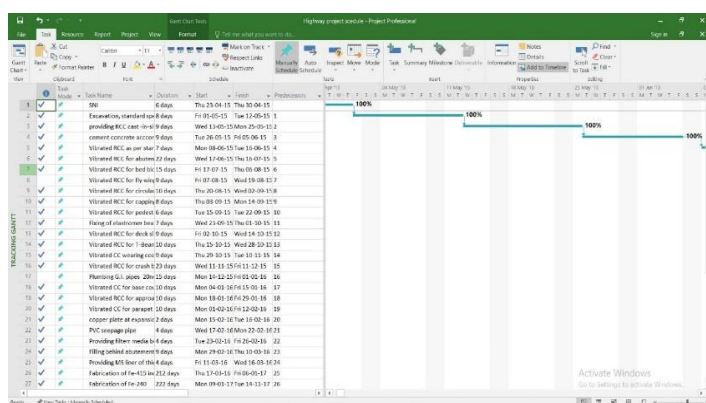


Fig 3.7 Tracking sheet

2. ANALYSIS IN PRIMAVERA

Risk Management Features using Primavera (P6)

The module is ideal for organizations that need to simultaneously manage multiple projects and support multiuser access across a department or the entire

organization. It supports an enterprise project structure (EPS) with an unlimited number of projects, activities, baselines, resources, work breakdown structures (WBS) as in figure 6.2, organizational breakdown structures (OBS), user-defined codes and critical-path-method(CPM) scheduling and resource leveling. Large-scale implementations for organization-wide project portfolio management use it with oracle or SQL server as the project database. For smaller implementations, we can use SQL server express.

2.1 WORK BREAKDOWN STRUCTURE

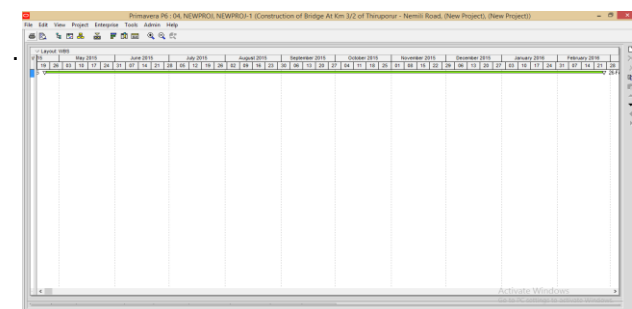


Fig 2.1 Wbs sheet

2.2 ENTERPRISE OF PROJECT

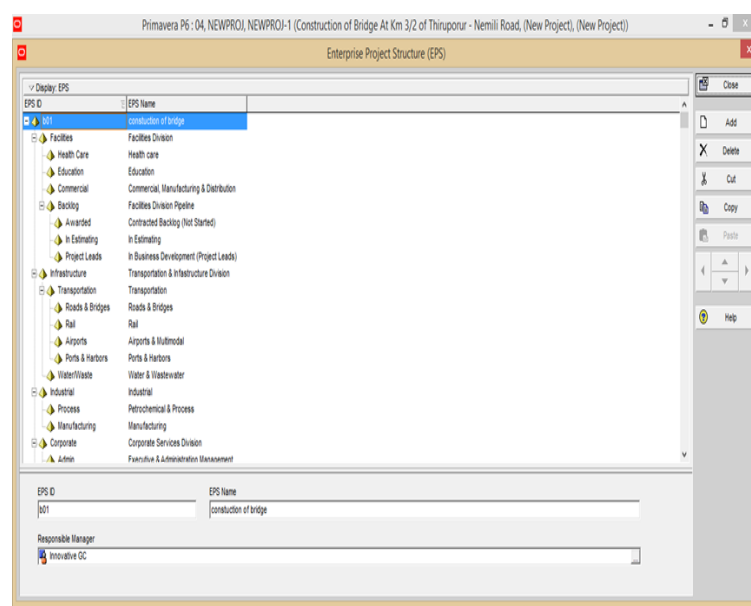


Fig 2.2 Enterprise of project

2.3 ORGANISATIONAL BREAKDOWN STRUCTURE

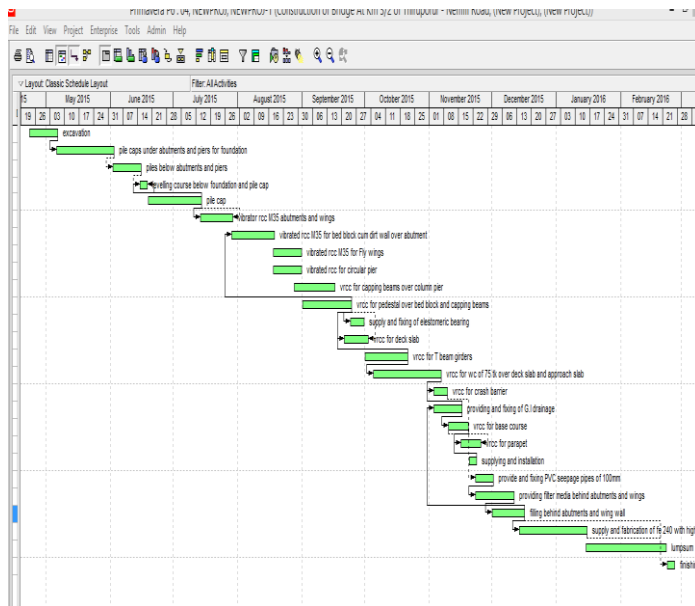


Fig 2.3 Organisational breakdown structure

2.4 PROJECT CALENDER

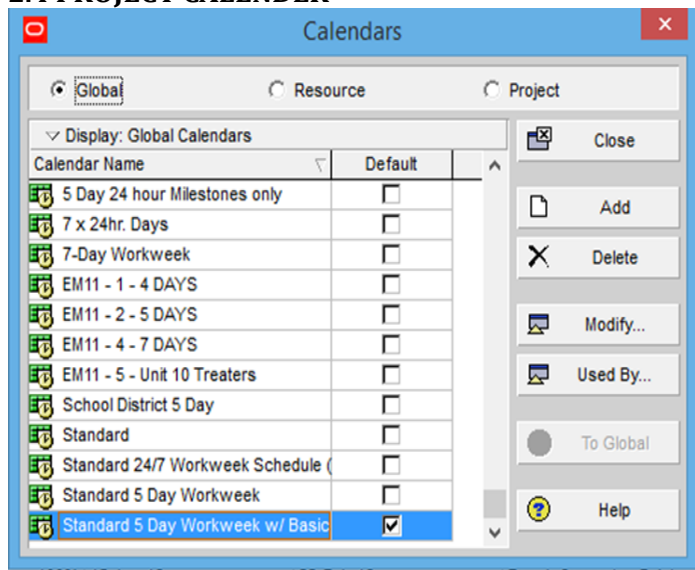


Fig 2.4 Project calendar

2.5 RESOURCE SHEET

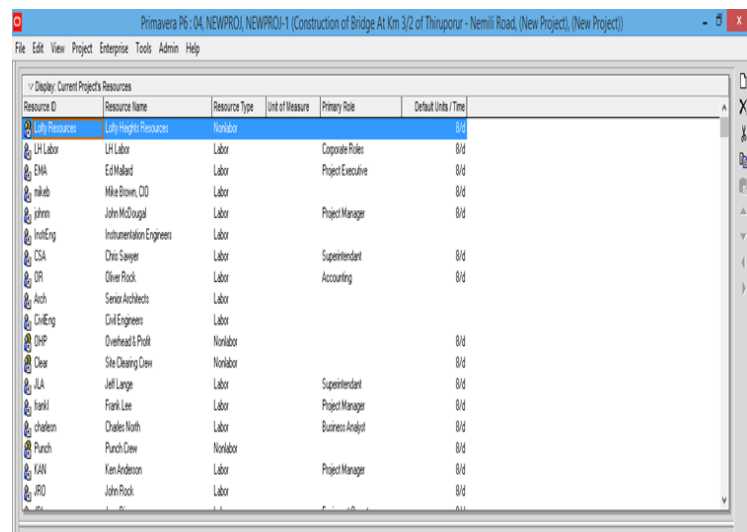


Fig 2.5 Resource sheet

2.6 RISK SHEET AND RISK MANAGEMENT

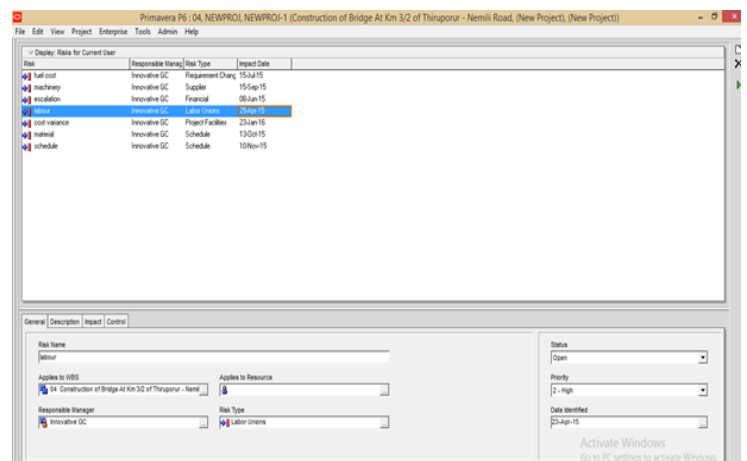


Fig 2.6.1 Risk sheet and management

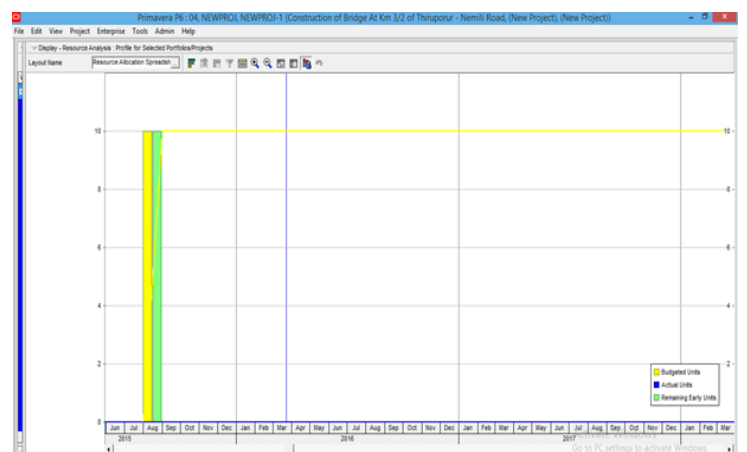


Fig 2.6.2 Risk sheet and management

3. CONCLUSIONS

Planning and scheduling helps in future situation and implementation of the project. The Primavera Software provides user friendly options while performing any task. The cost of individual work break down can be known along with the duration. Thus decisions can be made sensibly for proper management. In multiple projects resource leveling is very important to maintain proper resource allocation. For multiple projects under a single company such analysis should be done to check out for over allocation. Scheduling real-time projects is also an important standard for managing multiple projects. A Resource constrained project schedule as per the site situation. For resource constrained analysis resource leveling is arranged. Scheduling using Microsoft project Software gives good controlling and clear schedule to a project. This project deals with scheduling using Microsoft project.

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BIOGRAPHIES



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