Construction Project Management
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Preface

This book is about Critical Path Method (CPM)–based planning and scheduling as applied to the construction industry. The book’s distinguishing feature is the use of one example project throughout to demonstrate planning, scheduling, project acceleration, resource management, time control, financial control and the project cost system. The example project is a highway bridge.

It has been suggested that a building project might be more appropriate for many readers. We have seriously considered that suggestion, although the complexity of even a simple building tends to obscure project management fundamentals in logistical detail and diminish the clarity of the book. The bridge example, although a civil engineering project, typifies the basics of construction by incorporating critical aspects of most construction projects: the construction of foundations, concrete work, structural steel, and finish work, all of which require labor and equipment supervision, subcontractor management, and material expediting. The entire highway bridge project takes 10 weeks to construct and can be completely illustrated in 70 distinct activities.

This fifth edition has been updated with current labor, material, and equipment pricing and includes a complete estimate for the highway bridge. Scheduling and management concepts, such as Work Breakdown Structures (WBS) and the Earned Value Management System (EVMS), are developed in this edition. An estimate in SI units is included in Appendix B for readers outside the United States.

Of particular interest is Chapter 6, which includes discussions of production planning as it affects personnel, safety, quality, paperwork, and material control. A site layout drawing shows the location of temporary buildings, formwork fabrication, material laydown and staging area, fire extinguishers, and first aid kits. Much of the information in this chapter is gleaned from years of construction experience and is unique to this text.

For generations Men, Machines, Materials, Methods, and Money have been the five Ms of construction. Efficient usage of these five resources
is the essence of construction management. However, in recent years, an important change in these basic resources has occurred. Women now constitute an important part of the construction industry. They occupy responsible positions in the field trades and at all levels of management. Construction terms like “journeyman,” “foreman,” and “piledriverman” have been used in the industry for literally hundreds of years. Because such words are the only ones generally recognized, these words are used in this text but are not meant in any way to imply gender. At times, the word “he” or “him” is used as a singular pronoun. Such use of the masculine gender is done solely for the sake of readability and has no presumption of gender. The authors of this text recognize and applaud the important contribution that women have made and are making to the construction industry.

This book teaches a method for capturing, modeling, and viewing the entirety of a construction project so that it can be effectively planned and managed from start to finish. Consequently, many of the illustrations are quite large and presented on extra-wide pages called tip-ins. Due to production limitations, these tip-ins can only be inserted at specific intervals throughout the book rather than at the point they are referenced. Where a tip-in is referenced, guidance is provided on where to locate the figure within the text. In some cases, the tip-ins are located in the chapter following the point where they are referenced.

This fifth edition represents 37 years of publication and three generations of authors. We trust that this fully updated edition will continue as a principal reference for today’s professionals and an instructive guide for tomorrow’s constructors.

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