

# Table Of Contents

<b>PREFACE</b> . . . . .	<b>1</b>	2.02 Duties And Responsibilities Of The Estimator . . . . .	15
Electrical Estimating . . . . .	1	2.03 The Estimating Workspace And Tools . . . . .	16
About This Book . . . . .	1	2.05 What An Accurate Estimate Must Include . . . . .	19
Chapters 1 Through 8 . . . . .	2	2.06 Improper Estimating Methods . . . . .	19
Appendixes . . . . .	3	2.07 Proper Estimating Methods . . . . .	20
Estimating Software Available . . . . .	3	2.08 The Detailed Estimating Method . . . . .	20
About The Author . . . . .	3	2.09 How Accurate Can An Estimate Be? . . . . .	21
The Emotional Aspect Of Learning . . . . .	3	2.10 Manual Estimate, Computer Assisted, Or An Estimating Service? . . . . .	22
How To Get The Most From This Book . . . . .	4	Summary . . . . .	24
Acknowledgment . . . . .	5	Review Questions . . . . .	27
<b>CHAPTER 1</b>		<b>CHAPTER 3</b>	
<b>INTRODUCTION</b> . . . . .	<b>7</b>	<b>UNDERSTANDING LABOR-UNITS</b> . . . . .	<b>29</b>
Introduction . . . . .	7	Introduction . . . . .	29
1.01 Estimating Versus Bidding . . . . .	7	3.01 What Exactly Is A Labor-Unit ? . . . . .	29
1.03 Objectives And Purpose Of An Electrical Contractor . . . . .	8	3.02 How Labor-units Are Used . . . . .	30
1.04 Why Are So Many Electrical Contractors Unsuccessful? . . . . .	8	3.03 What's Included In The Labor-Unit . . . . .	30
1.05 The Estimate Must Provide Information For Project Management . . . . .	8	3.04 Labor-Units Do Not Include . . . . .	33
1.06 Job Management Ultimately Controls The Cost Of A Project . . . . .	8	3.05 Labor-Unit Manuals, Which Should You Use? . . . . .	33
1.07 Can I Be Competitive? . . . . .	8	3.06 Your Labor-Units As Compared To Your Competitors' Labor-Unit . . . . .	33
1.08 The Market . . . . .	10	3.07 Knowing Your Competitors' Labor-Units . . . . .	34
Summary . . . . .	11	3.08 How To Develop Your Own Labor-Units Labor-Unit . . . . .	35
Review Questions . . . . .	13	3.09 Variables That Impact Labor-Units . . . . .	35
<b>CHAPTER 2</b>		3.10 Labor-Unit Summary . . . . .	40
<b>ABOUT ESTIMATING</b> . . . . .	<b>15</b>	Summary . . . . .	40
2.01 Qualities Of A Good Estimator . . . . .	15	Review Questions . . . . .	43

**CHAPTER 4  
THE ESTIMATE PROCESS . . . . . 45**

Introduction . . . . . 45  
4.01 Job Selection . . . . . 46  
4.02 Understanding The Scope Of Work (Step 1) . 48  
4.03 The Take-Off (Step 2) . . . . . 50  
4.04 Determining The Bill-Of-Material (Step 3) . 56  
4.05 Pricing And Laboring (Step 4) . . . . . 56  
4.06 Extensions And Totals (Step 5) . . . . . 57  
Summary . . . . . 62  
Review Questions . . . . . 64

**CHAPTER 5  
THE ESTIMATE SUMMARY AND  
BID PROCESS . . . . . 67**

Introduction . . . . . 67  
**Part A – The Estimate Summary . . . . . 68**  
5.01 Labor-Hours (Step A) . . . . . 69  
5.02 Labor Cost (Step B) . . . . . 71  
5.03 Labor Burden . . . . . 72  
5.04 Total Material Cost (Step C) . . . . . 72  
5.05 Direct Job Expenses (Step D) . . . . . 73  
5.06 Estimated Prime Cost (Step E) . . . . . 75  
5.07 Overhead . . . . . 75  
5.08 Overhead Calculation . . . . . 76  
5.09 Applying Overhead (Part F)  
    Overhead Applying . . . . . 77  
5.10 Understanding Break Even Cost (Part G) . . 77  
5.11 Profit . . . . . 78  
**Part B – The Bid Process . . . . . 78**  
5.12 Other Final Costs . . . . . 79  
5.13 Bid Accuracy . . . . . 79  
5.14 Bid Analysis . . . . . 80  
5.15 Bid Proposal . . . . . 80  
5.16 Unit Price Example . . . . . 83  
**Part C – Unit Pricing . . . . . 83**  
Summary . . . . . 85  
Review Questions . . . . . 88

**CHAPTER 6  
ESTIMATING RESIDENTIAL WIRING . . . . . 95**

Introduction . . . . . 95  
**Part A – Plans And Specifications . . . . . 95**  
**Part B – Manual Estimate And Bid . . . . . 108**  
6.01 Understanding Scope Of Work . . . . . 108  
6.02 The Take-Off . . . . . 112  
6.03 Completed Residential Take-Off . . . . . 120  
6.04 Determining The Bill-Of-Material . . . . . 123  
6.05 Pricing, Labor, Extending And Totals . . . 132  
6.06 Estimate and Bid Summary . . . . . 139  
6.07 Bid Accuracy And Analysis . . . . . 142  
6.08 The Proposal . . . . . 142  
6.09 Bid Preparation And Take-Off . . . . . 143  
6.10 Input Take-Off Into Computer . . . . . 143  
6.11 Bill-Of-Material, Pricing, Laboring,  
    Extending And Totaling . . . . . 143  
6.12 Estimate And Bid Summary . . . . . 143  
6.13 Bid Accuracy And Analysis . . . . . 143  
**Part C – Computer Assisted Estimate And Bid . 143**  
6.14 The Proposal . . . . . 177  
Review Questions . . . . . 179

**CHAPTER 7  
ESTIMATING COMMERCIAL WIRING . . . . . 189**

Introduction . . . . . 189  
**Part A – Plans And Specifications . . . . . 189**  
7.01 Electrical Specifications . . . . . 196  
7.02 Preparing The Estimate . . . . . 214  
7.03 Understanding Scope Of Work . . . . . 214  
7.04 Estimate And Bid Notes . . . . . 214  
7.05 The Take-Off . . . . . 214  
**Part B – Manual Estimate And Bid . . . . . 214**  
7.06 Determining The Bill-Of-Material . . . . . 223  
7.07 Pricing, Laboring, Extensions And Totals . 223  
7.08 Estimate And Bid Summary . . . . . 233  
7.09 Bid Accuracy And Analysis . . . . . 235  
7.10 The Proposal . . . . . 235  
7.11 Bid Preparation and Take-Off . . . . . 236

7.12 Input Take-Off Into Computer . . . . .	236
7.13 Bill-Of-Material, Pricing, Laboring, Extending, And Totaling . . . . .	236
7.14 Estimate And Bid Summary . . . . .	236
7.15 Bid Accuracy And Analysis . . . . .	236
Review Questions . . . . .	238

**CHAPTER 8**

**COMPUTER ESTIMATING . . . . . 247**

Introduction . . . . .	247
8.01 Computerized Estimating . . . . .	247
8.02 Frequently Asked Questions . . . . .	248

8.03 Training And Support . . . . .	249
8.05 Pricing Services . . . . .	249
8.06 Software Selection . . . . .	249
8.07 How Much Should It Cost? . . . . .	250
8.08 Who Sells Estimating Software? . . . . .	250
Reveiw Questions . . . . .	251

**APPENDIX – ESTIMATING FORMS AND**

**WORKSHEETS . . . . . APP-1**

**INDEX . . . . . 253**