Lakeside Waterworks, Inc.

June 17, 2014

Office of Commission Clerk
Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399

Re: Docket No. 130194-WS - Application for staff-assisted rate case in Lake County by Lakeside Waterworks, Inc.– Staff Fifth Data Request

To Whom It May Concern:

Attached please find Lakeside Waterworks, Inc.'s response to staff's Fifth Data Request in the above referenced docket:

1. On November 16, 2012, Lakeside Waterworks, Inc. ("Lakeside" or "Utility") signed a management services agreement ("Agreement") with U.S. Water Services Corporation (U.S. Water). Please provide a complete copy of this Agreement as originally executed, including all Appendices (a/k/a Attachments).

Response: Attached.

2. Since the date this Agreement was executed (November 16, 2012), has any portion of the Agreement been revised, amended, deleted, or modified in any way? If yes, please provide a detailed description of each change to the Agreement and provide a copy of each such revision, amendment, deletion or modification.

Response: No, no portion of the Agreement has been revised, amended, deleted, or modified in any way. See attached – most recent Fee Schedule.

3. Since the date this Agreement was executed (November 16, 2012), has any portion of an Attachment to this Agreement been revised, amended, deleted, or modified in any way? If yes, please provide a detailed description each change to each such Attachment and provide a copy of each such revision, amendment, deletion or modification.

Response: This is the same request as No. 2 above. Please see above.

1. Attachment G, Schedule of Service Fees, includes notations that state, "Fees are subject to change without notice and are updated annually at a minimum, [and] Invoices may be subject to fuel surcharges."

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a. Please identify the date of the latest update to Attachment G, and provide 1) the most current copy of this Attachment, and 2) each document that has modified Attachment G to effectuate a change, update, or fuel surcharge.

Response: See Revised Schedule G effective May 1, 2014. This schedule may be updated annually based on CPI depending on the current economic conditions. If the economic conditions are unfavorable, these fees may not be increased. These Service Fees have not been changed since the date of execution, or for the past several years.

b. Please identify and describe the basis used to establish the fuel surcharge.

Response: The fuel surcharge is added for only emergency repairs performed outside the contract. This surcharge may be decreased or increased depending on the fuel market for each respective year. This surcharge is typically not charged to the regulated utilities and is covered under the service contract.

c. For the purpose of this question, assume that the Utility needs $1,000 worth of services or equipment for a repair, or an improvement. Please explain how Attachment G works as applied to such a repair or improvement. In this context, please identify and explain any differences in how Attachment G works for repairs (expenses) versus improvements (capital items).

Response: The actual time worked on either the repair or improvement outside the normal contract services is charged based on the record keeping of the USW employee on actual time worked on the specific project. The equipment is also charged based on the actual amount of time used on the specific project. Per the USW contract, the utility is responsible for any repair or improvement above $400. There are no differences in how Attachment G works for repairs verses improvements. However, these would be for items that are required above and beyond the normal services already being provided through the actual service contract.

d. Since the date this Agreement was executed (November 16, 2012), how many updates, if any, have been made to Attachment G?

Response: The Fee Schedule has not changed since the execution of the contract.

e. Attachment G lists several services with various hourly rates. As an example, Line 10 shows that a Field Inspector is available to the Utility for an hourly rate. Please identify the industry benchmarks or pricing guidelines used to develop the hourly rate for the specialists identified in Attachment G.

Response: USW used the RSMeans® Heavy Construction Cost Data to conduct cost analysis. Typically the fees charged by USW are under the RSMeans® costs. RSMeans is a construction estimation database that is used by professional estimators for up to date labor, materials and overhead costs for specific project types and locations. Since 1942, RS Means has been actively engaged in construction cost publishing and consulting throughout North America. RS Means collects data from all facets of the industry, including both the private and public sectors,

including federal, state, and municipal agencies, corporations, institutions, construction management firms, hospitals, and associations.

RS Means is the national leader for custom database development to fit any construction or facilities management situation. RS Means has developed and maintains a global cost estimating database for the U.S. Army Corps of Engineers and the Department of Defense. Means has developed a cost index for various building types for the U.S. Department of Labor, Bureau of Labor Statistics.

For the Schedule of Service Fees, items 1 through 9 are typically never charged to the regulated utilities. The main labor items charged to the regulated utilities for the service performed outside the normal contract are for (1) Tradesman, and (2) Maintenance Technician.

Below is a cost comparison for these two positions charged to regulated utilities:

	UWSC	RSMeans®
Tradesman (Master Mechanic)	$57.91	$76.05
Maintenance Technician (Skilled Worker)	$52.01	$73.25

(see attached schedules)

One other position that may be charged depending on the specifications of the project is:

	UWSC	RSMeans®
Utility Electrician (Electrician)	$60.53	$79.85

Further, USWC currently has over 400 service contracts with various cities, counties, federal agencies, private corporations, FGUA, etc. These contracts were subject to the competitively bid process across the state. Thus these contracts were openly bid throughout the open market and were selective through the competitive bid processes of the various statewide clients. Ultimately for these similar contracts, USWC was selected through this open market process for the same type of service, thus demonstrating that its charges and fees for services are below market.

f. Attachment G lists several types of equipment with various rates and charges. As an example, Line 38 shows that a Crane Truck is available to the Utility by the hour. Please identify the industry benchmarks or pricing guidelines used to develop the hourly rates for equipment.

Response: USW used the RSMeans® Heavy Construction Cost Data to conduct cost analysis. See answer to 4e above. Below is a comparison of a selection of some of the equipment costs:

	UWSC	RSMeans®
Crane Truck	$138.12/hr	$280.00/hr
Diaphragm Pump Rental	$ 52.37/day	$ 72.00/day
Cutting Torches	$ 84.68/day	$152.00/day
Submersible Bypass Pump Rental	$ 58.19day	$ 75.40/day

Pressure Washer	$ 28.04/day	$ 69.40/day

g. Attachment G, Line 22 states that materials and reimbursable expenses will be billed at actual cost plus a percentage for mark-up. Please identify the industry benchmarks or pricing guides used in setting the mark-up amount.

Response: The 18% markup was derived at by using factors of 8% overhead and 10% profit. According to RS Means®, (1) the "Average Fixed Overhead for all services across the United States is 17.9%; (2) the Overhead varied from a low of 11% to a high of 16%; (3) while the Profit across all services was at 10%. Thus the Overall Overhead and Profit across all services across the United States varied from a low of 47.4% to a high of 80.4%. (See attached schedule). This 18% markup is also consistent with the FGUA contracts which were selected through the competitive bid process across the state. The 18% markup for overhead and profit is below the market percentage markups nationwide.

h. Attachment G, Line 27 states that Operations Supplies will be billed at actual cost plus a percentage for mark-up. Please identify the industry benchmarks or pricing guidelines used in setting the mark-up amount.

Response: See response to 4g above.

5. This question relates to the Utility's planned repairs or improvements (a/k/a proforma) for 2014 identified in the EXCEL file sent to Commission staff on May 5, 2014. Please state the original and salvage values, if known, for each plant item that is being retired due to new proforma plant investment.

Response: Since the utility's records were obtained through acquisition and the original values of the replaced items are unknown, Lakeside Waterworks, Inc. accepts the Commission's commonly accepted practice of calculating the retirement amounts at 75% of the capital asset's purchase price when the original cost cannot be determined. Likewise, the salvage value, if any cannot be determined. Lakeside Waterworks respectfully requests staff's assistance on this calculation in this staff assisted rate case.

Respectfully Submitted,

Gary Deremer
President

Attachments

Cc: Victoria Penick
Troy Rendell

U.S. Water Services Corporation

ATTACHMENT G

SCHEDULE OF SERVICE FEES

Effective May 1, 2014

1	Principal	$166.52 per hour
2	Director of Engineering Services: (Registered Professional Engineer)	$145.89 per hour
3	Engineer III (Registered Professional Engineer)	$130.28 per hour
4	Engineer II	$106.82 per hour
5	Engineer I	$ 84.33 per hour
6	Sr. Environmental Consultant	$125.70 per hour
7	Hydrogeologist (Registered Professional Geologist)	$118.17 per hour
8	Sr. Project Manager /Utility Manager, CIP or PSC Filings	$139.66 per hour
9	Project Manager	$ 98.92 per hour
10	Field Inspector	$ 95.86 per hour
11	Engineering Technician	$ 62.14 per hour
12	Cad Operator	$ 66.99 per hour
13	Instrumentation/Control Technician/Maintenance Supervisor/Chief Mechanic	$ 89.43 per hour
14	Lab Tech/Collection Capture	$ 42.66 per hour
15	Tradesman	$ 57.91 per hour
16	Maintenance Technician	$ 52.01 per hour
17	Welder/Fabricator	$ 65.00 per hour
18	Utility Electrician	$ 67.82 per hour
19	Certified Cross Connection Control Technician (Backflow Prevention Technician)	$ 73.37 per hour
20	Water and Wastewater Plant Operator (LEAD)	$ 79.01 per hour
21	Water and Wastewater Plant Operator	$ 58.19 per hour
22	Administrative Support	$ 52.37 per hour
23	Materials and reimbursable expenses will be billed at actual cost plus: 18%	18%
24	Automobile Travel Mileage Reimbursement Associated With Consulting Services	$ 0.55 per mile
25	Disposal Fee for Disposal of Non Hazardous Material and Debris.	$ 13.99 per visit
26**	Labor Rates of 1.5 times the regular hourly rate will apply under the following circumstances: **Monday - Friday from 4:00pm to 7:00am and Weekends at All Hours	
27	Labor Rates of 2.0 times the regular hourly rate will apply on holidays recognized by US Water.	
28	Operations Supplies provided will be billed at actual cost plus 18%.	

EQUIPMENT

29	Confined Space Entry – With Permit and Equipment	$110.00 per/entry
30	Diaphragm Pump Rental	$ 52.37 per/day
31	Submersible Bypass Pump Rental	$ 79.01 per/day
32	Cut Saw Rental	$ 29.11 per/day
33	Cut Saw Blades	$ 11.65 each
34	RPZ Certification	$145.60 each
35	Lift Station Calibration and Testing	$368.78 each
36	Pressure Washer	$ 28.04 per/hour
37	Pressure Jetter	$ 84.68 per/day
38	Cutting Torches	$ 84.68 per/day
39	Crane Truck	$138.12 per/hour
40	VacTruck/Residuals Hauler	$317.51 per/hour
41	Residual Liquid Hauled	$ 0.39 per/gallon
42	Pump Hoist	$ 78.08 per/day
43	TV Camera	$ 88.52 per/foot

Fees are subject to change without notice and are updated annually at a minimum.
Invoices may be subject to fuel surcharges.

END

Installing Contractor's Overhead & Profit

Below are the **average** installing contractor's percentage markups applied to base labor rates to arrive at typical billing rates.

Column A: Labor rates are based on union wages averaged for 30 major U.S. cities. Base rates including fringe benefits are listed hourly and daily. These figures are the sum of the wage rate and employer-paid fringe benefits such as vacation pay, employer-paid health and welfare costs, pension costs, plus appropriate training and industry advancement funds costs.

Column B: Workers' compensation rates are the national average of state rates established for each trade.

Column C: Column C lists average fixed overhead figures for all trades. Included are federal and state unemployment costs set at 7.8%; social security taxes (FICA) set at 7.65%; builder's risk insurance costs set at 0.44%; and public liability costs set at 2.02%. All the percentages except those for social security taxes vary from state to state as well as from company to company.

Columns D and E: Percentages in Columns D and E are based on the presumption that the installing contractor has annual billing of $4,000,000 and up. Overhead percentages may increase with smaller annual billing. The overhead percentages for any given contractor may vary greatly and depend on a number of factors, such as the contractor's annual volume, engineering and logistical support costs, and staff requirements. The figures for overhead and profit will also vary depending on the type of job, the job location, and the prevailing economic conditions. All factors should be examined very carefully for each job.

Column F: Column F lists the total of Columns B, C, D, and E.

Column G: Column G is Column A (hourly base labor rate) multiplied by the percentage in Column F (O&P percentage).

Column H: Column H is the total of Column A (hourly base labor rate) plus Column G (Total O&P).

Column I: Column I is Column H multiplied by eight hours.

		A		B	C	D	E	F	G	H	I
		Base Rate Incl. Fringes		Workers' Comp. Ins.	Average Fixed Overhead	Overhead	Profit	Total Overhead & Profit		Rate with O & P	
Abbr.	Trade	Hourly	Daily					%	Amount	Hourly	Daily
Skwk	Skilled Workers Average (35 trades)	$47.30	$378.40	14.0%	17.9%	13.0%	10%	54.9%	$25.95	$ 73.25	$586.00
	Helpers Average (5 trades)	34.65	277.20	16.1		11.0		55.0	19.05	53.70	429.60
	Foreman Average, Inside ($.50 over trade)	47.80	382.40	14.0		13.0		54.9	26.25	74.05	592.40
	Foreman Average, Outside ($2.00 over trade)	49.30	394.40	14.0		13.0		54.9	27.05	76.35	610.80
Clab	Common Building Laborers	36.65	293.20	15.4		11.0		54.3	19.90	56.55	452.40
Asbe	Asbestos/Insulation Workers/Pipe Coverers	51.15	409.20	11.7		16.0		55.6	28.45	79.60	636.80
Boil	Boilermakers	59.90	479.20	9.9		16.0		53.8	32.25	92.15	737.20
Bric	Bricklayers	45.60	364.80	13.5		11.0		52.4	23.90	69.50	556.00
Brhe	Bricklayer Helpers	37.00	296.00	13.5		11.0		52.4	19.40	56.40	451.20
Carp	Carpenters	45.85	366.80	15.4		11.0		54.3	24.90	70.75	566.00
Cefi	Cement Finishers	44.05	352.40	8.9		11.0		47.8	21.05	65.10	520.80
Elec	Electricians	53.35	426.80	5.8		16.0		49.7	26.50	79.85	638.80
Elev	Elevator Constructors	74.15	593.20	5.7		16.0		49.5	36.80	110.95	887.60
Eqhv	Equipment Operators, Crane or Shovel	50.25	402.00	9.7		14.0		51.6	25.95	76.20	609.60
Eqmd	Equipment Operators, Medium Equipment	48.90	391.20	9.7		14.0		51.6	25.25	74.15	593.20
Eqlt	Equipment Operators, Light Equipment	47.05	376.40	9.7		14.0		51.6	24.30	71.35	570.80
Eqol	Equipment Operators, Oilers	43.55	348.40	9.7		14.0		51.6	22.45	66.00	528.00
Eqmm	Equipment Operators, Master Mechanics	50.15	401.20	9.7		14.0		51.6	25.90	76.05	608.40
Glaz	Glaziers	44.05	352.40	13.2		11.0		52.1	22.95	67.00	536.00
Lath	Lathers	40.60	324.80	8.1		11.0		47.0	19.10	59.70	477.60
Marb	Marble Setters	42.25	338.00	13.5		11.0		52.4	22.15	64.40	515.20
Mill	Millwrights	48.10	384.80	8.4		11.0		47.3	22.75	70.85	566.80
Mstz	Mosaic & Terrazzo Workers	41.65	333.20	8.5		11.0		47.4	19.75	61.40	491.20
Pord	Painters, Ordinary	39.55	316.40	11.5		11.0		50.4	19.95	59.50	476.00
Psst	Painters, Structural Steel	40.50	324.00	11.5		11.0		80.4	32.55	73.05	584.40
Pape	Paper Hangers	39.80	318.40	11.5		11.0		50.4	20.05	59.85	478.80
Pile	Pile Drivers	44.40	355.20	14.7		16.0		58.6	26.00	70.40	563.20
Plas	Plasterers	41.95	335.60	11.6		11.0		50.5	21.20	63.15	505.20
Plah	Plasterer Helpers	37.20	297.60	11.6		11.0		50.5	18.80	56.00	448.00
Plum	Plumbers	57.55	460.40	7.1		16.0		51.0	29.35	86.90	695.20
Rodm	Rodmen (Reinforcing)	50.65	405.20	15.2		14.0		57.1	28.90	79.55	636.40
Rofc	Roofers, Composition	39.15	313.20	31.3		11.0		70.2	27.50	66.65	533.20
Rots	Roofers, Tile & Slate	39.35	314.80	31.3		11.0		70.2	27.60	66.95	535.60
Rohe	Roofers, Helpers (Composition)	29.15	233.20	31.3		11.0		70.2	20.45	49.60	396.80
Shee	Sheet Metal Workers	54.70	437.60	8.8		16.0		52.7	28.85	83.55	668.40
Spri	Sprinkler Installers	55.40	443.20	7.2		16.0		51.1	28.30	83.70	669.60
Stpi	Steamfitters or Pipefitters	58.50	468.00	7.1		16.0		51.0	29.85	88.35	706.80
Ston	Stone Masons	45.85	366.80	13.5		11.0		52.4	24.05	69.90	559.20
Sswk	Structural Steel Workers	51.10	408.80	34.6		14.0		76.5	39.10	90.20	721.60
Tilf	Tile Layers	41.95	335.60	8.5		11.0		47.4	19.90	61.85	494.80
Tilh	Tile Layers Helpers	35.25	282.00	8.5		11.0		47.4	15.75	49.00	392.00
Trk	Truck Drivers, Light	36.50	292.00	13.7		11.0		52.6	19.20	55.70	445.60
Trhv	Truck Drivers, Heavy	37.55	300.40	13.7		11.0		52.6	19.75	57.30	458.40
Ssw	Welders, Structural Steel	51.10	408.80	34.6		14.0		76.5	39.10	90.20	721.60
Wrck	*Wrecking	36.65	293.20	29.2		11.0		68.1	24.95	61.60	492.80

*Not included in averages

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2014

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RSMeans® Heavy Construction Cost Data

28TH ANNUAL EDITION

2014

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Construction Cost Data Books

Building Construction Cost Data 2014
Site Work & Landscape Cost Data 2014
Concrete & Masonry Cost Data 2014

Reference Books

Landscape Estimating Methods
Unit Price Estimating Methods
Estimating Building Costs
RSMeans Estimating Handbook
Green Building: Project Planning & Estimating
How to Estimate with Means Data and CostWorks
Plan Reading & Material Takeoff
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- Assetworks
- Beck Technology
- BSD – Building Systems Design, Inc.
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- Corecon Technologies, Inc.
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- Sage Timberline Office
- UDA Technologies, Inc.
- US Cost, Inc.
- VFA – Vanderweil Facility Advisers
- WinEstimator, Inc.
- R & K Solutions
- Tririga

Foreword

Our Mission

Since 1942, RSMeans has been actively engaged in construction cost publishing and consulting throughout North America.

Today, more than 70 years after RSMeans began, our primary objective remains the same: to provide you, the construction and facilities professional, with the most current and comprehensive construction cost data possible.

Whether you are a contractor, owner, architect, engineer, facilities manager, or anyone else who needs a reliable construction cost estimate, you'll find this publication to be a highly useful and necessary tool.

With the constant flow of new construction methods and materials today, it's difficult to find the time to look at and evaluate all the different construction cost possibilities. In addition, because labor and material costs keep changing, last year's cost information is not a reliable basis for today's estimate or budget.

That's why so many construction professionals turn to RSMeans. We keep track of the costs for you, along with a wide range of other key information, from city cost indexes . . . to productivity rates . . . to crew composition . . . to contractor's overhead and profit rates.

RSMeans performs these functions by collecting data from all facets of the industry and organizing it in a format that is instantly accessible to you. From the preliminary budget to the detailed unit price estimate, you'll find the data in this book useful for all phases of construction cost determination.

The Staff, the Organization, and Our Services

When you purchase one of RSMeans' publications, you are, in effect, hiring the services of a full-time staff of construction and engineering professionals.

Our thoroughly experienced and highly qualified staff works daily at collecting, analyzing, and disseminating comprehensive cost information for your needs. These staff members have years of practical construction experience and engineering training prior to joining the firm. As a result, you can count on them not only for accurate cost figures, but also for additional background reference information that will help you create a realistic estimate.

The RSMeans organization is always prepared to help you solve construction problems through its variety of data solutions, including online, CD, and print book formats, as well as cost estimating expertise available via our business solutions, training, and seminars.

Besides a full array of construction cost estimating books, RSMeans also publishes a number of other reference works for the construction industry. Subjects include construction estimating and project and business management, special topics such as green building and job order contracting, and a library of facility management references.

In addition, you can access all of our construction cost data electronically in convenient CD format or on the web. Visit **RSMeansOnline.com** for more information on our 24/7 online cost data.

What's more, you can increase your knowledge and improve your construction estimating and management performance with an RSMeans construction seminar or in-house training program. These two-day seminar programs offer unparalleled opportunities for everyone in your organization to become updated on a wide variety of construction-related issues.

RSMeans is also a worldwide provider of construction cost management and analysis services for commercial and government owners.

In short, RSMeans can provide you with the tools and expertise for constructing accurate and dependable construction estimates and budgets in a variety of ways.

Robert Snow Means Established a Tradition of Quality That Continues Today

Robert Snow Means spent years building RSMeans, making certain he always delivered a quality product.

Today, at RSMeans, we do more than talk about the quality of our data and the usefulness of our books. We stand behind all of our data, from historical cost indexes to construction materials and techniques to current costs.

If you have any questions about our products or services, please call us toll-free at 1-800-334-3509. Our customer service representatives will be happy to assist you. You can also visit our website at **www.rsmeans.com**

How the Book is Built: An Overview

The Construction Specifications Institute (CSI) and Construction Specifications Canada (CSC) have produced the 2012 edition of MasterFormat®, a system of titles and numbers used extensively to organize construction information.

All unit price data in the RSMeans cost data books is now arranged in the 50-division MasterFormat® 2012 system.

A Powerful Construction Tool

You have in your hands one of the most powerful construction tools available today. A successful project is built on the foundation of an accurate and dependable estimate. This book will enable you to construct just such an estimate.

For the casual user the book is designed to be:

- quickly and easily understood so you can get right to your estimate.
- filled with valuable information so you can understand the necessary factors that go into the cost estimate.

For the regular user, the book is designed to be:

- a handy desk reference that can be quickly referred to for key costs.
- a comprehensive, fully reliable source of current construction costs and productivity rates so you'll be prepared to estimate any project.
- a source book for preliminary project cost, product selections, and alternate materials and methods.

To meet all of these requirements, we have organized the book into the following clearly defined sections.

Quick Start

See our "Quick Start" instructions on the following page to get started right away.

Estimating with RSMeans Unit Price Cost Data

Please refer to these steps for guidance on completing an estimate using RSMeans unit price cost data.

How to Use the Book: The Details

This section contains an in-depth explanation of how the book is arranged . . . and how you can use it to determine a reliable construction cost estimate. It includes information about how we develop our cost figures and how to completely prepare your estimate.

Unit Price Section

All cost data has been divided into the 50 divisions according to the MasterFormat system of classification and numbering. For a listing of these divisions and an outline of their subdivisions, see the Unit Price Section Table of Contents.

Estimating tips are included at the beginning of each division.

Assemblies Section

The cost data in this section has been organized in an "Assemblies" format. These assemblies are the functional elements of a building and are arranged according to the 7 elements of the UNIFORMAT II classification system. For a complete explanation of a typical "Assemblies" page, see "How RSMeans Assemblies Data Works."

Reference Section

This section includes information on Equipment Rental Costs, Crew Listings, Historical Cost Indexes, City Cost Indexes, Location Factors, Reference Tables, Change Orders, Square Foot Costs, and a listing of Abbreviations.

Equipment Rental Costs: This section contains the average costs to rent and operate hundreds of pieces of construction equipment.

Crew Listings: This section lists all of the crews referenced in the book. For the purposes of this book, a crew is composed of more than one trade classification and/or the addition of power equipment to any trade classification. Power equipment is included in the cost of the crew. Costs are shown both with bare labor rates and with the installing contractor's overhead and profit added. For each, the total crew cost per eight-hour day and the composite cost per labor-hour are listed.

Historical Cost Indexes: These indexes provide you with data to adjust construction costs over time.

City Cost Indexes: All costs in this book are U.S. national averages. Costs vary because of the regional economy. You can adjust costs by CSI Division to over 700 locations throughout the U.S. and Canada by using the data in this section.

Location Factors: You can adjust total project costs to over 900 locations throughout the U.S. and Canada by using the data in this section.

Reference Tables: At the beginning of selected major classifications in the Unit Price section are reference numbers shown in a shaded box. These numbers refer you to related information in the Reference Section. In this section, you'll find reference tables, explanations, estimating information that support how we develop the unit price data, technical data, and estimating procedures.

Change Orders: This section includes information on the factors that influence the pricing of change orders.

Square Foot Costs: This section contains costs for 59 different building types that allow you to make a rough estimate for the overall cost of a project or its major components.

Abbreviations: A listing of abbreviations used throughout this book, along with the terms they represent, is included in this section.

Index

A comprehensive listing of all terms and subjects in this book will help you quickly find what you need when you are not sure where it occurs in MasterFormat.

The Scope of This Book

This book is designed to be as comprehensive and as easy to use as possible. To that end we have made certain assumptions and limited its scope in two key ways:

1. We have established material prices based on a national average.
2. We have computed labor costs based on a 30-city national average of union wage rates.

For a more detailed explanation of how the cost data is developed, see "How To Use the Book: The Details."

Project Size/Type

The material prices in RSMeans data cost books are "contractor's prices." They are the prices that contractors can expect to pay at the lumberyards, suppliers/distributers warehouses, etc. Small orders of speciality items would be higher than the costs shown, while very large orders, such as truckload lots, would be less. The variation would depend on the size, timing, and negotiating power of the contractor. The labor costs are primarily for new construction or major renovation rather than repairs or minor alterations.

With reasonable exercise of judgment, the figures can be used for any building work.

How to Use the Book: The Details

What's Behind the Numbers? The Development of Cost Data

The staff at RSMeans continually monitors developments in the construction industry in order to ensure reliable, thorough, and up-to-date cost information. While overall construction costs may vary relative to general economic conditions, price fluctuations within the industry are dependent upon many factors. Individual price variations may, in fact, be opposite to overall economic trends. Therefore, costs are constantly tracked and complete updates are published yearly. Also, new items are frequently added in response to changes in materials and methods.

Costs—$ (U.S.)

All costs represent U.S. national averages and are given in U.S. dollars. The RSMeans City Cost Indexes can be used to adjust costs to a particular location. The City Cost Indexes for Canada can be used to adjust U.S. national averages to local costs in Canadian dollars. No exchange rate conversion is necessary.

G The processes or products identified by the green symbol in our publications have been determined to be environmentally responsible and/or resource-efficient solely by the RSMeans engineering staff. The inclusion of the green symbol does not represent compliance with any specific industry association or standard.

Material Costs

The RSMeans staff contacts manufacturers, dealers, distributors, and contractors all across the U.S. and Canada to determine national average material costs. If you have access to current material costs for your specific location, you may wish to make adjustments to reflect differences from the national average. Included within material costs are fasteners for a normal installation. RSMeans engineers use manufacturers' recommendations, written specifications, and/or standard construction practice for size and spacing of fasteners. Adjustments to material costs may be required for your specific application or location. The manufacturer's warranty is assumed. Extended warranties are not included in the material costs. Material costs do not include sales tax.

Labor Costs

Labor costs are based on the average of wage rates from 30 major U.S. cities. Rates are determined from labor union agreements or prevailing wages for construction trades for the current year. Rates, along with overhead and profit markups, are listed on the inside back cover of this book.

- If wage rates in your area vary from those used in this book, or if rate increases are expected within a given year, labor costs should be adjusted accordingly.

Labor costs reflect productivity based on actual working conditions. In addition to actual installation, these figures include time spent during a normal weekday on tasks such as, material receiving and handling, mobilization at site, site movement, breaks, and cleanup.

Productivity data is developed over an extended period so as not to be influenced by abnormal variations and reflects a typical average.

Equipment Costs

Equipment costs include not only rental, but also operating costs for equipment under normal use. The operating costs include parts and labor for routine servicing such as repair and replacement of pumps, filters, and worn lines. Normal operating expendables, such as fuel, lubricants, tires, and electricity (where applicable), are also included. Extraordinary operating expendables with highly variable wear patterns, such as diamond bits and blades, are excluded. These costs are included under materials. Equipment rental rates are obtained from industry sources throughout North America—contractors, suppliers, dealers, manufacturers, and distributors.

Equipment costs do not include operators' wages; nor do they include the cost to move equipment to a job site (mobilization) or from a job site (demobilization).

Equipment Cost/Day——The cost of power equipment required for each crew is included in the Crew Listings in the Reference Section (small tools that are considered as essential everyday tools are not listed out separately). The Crew Listings itemize specialized tools and heavy equipment along with labor trades. The daily cost of itemized equipment included in a crew is based on dividing the weekly bare rental rate by 5 (number of working days per week) and then adding the hourly operating cost times 8 (the number of hours per day). This Equipment Cost/Day is shown in the last column of the Equipment Rental Cost pages in the Reference Section.

Mobilization/Demobilization——The cost to move construction equipment from an equipment yard or rental company to the job site and back again is not included in equipment costs. Mobilization (to the site) and demobilization (from the site) costs can be found in the Unit Price Section. If a piece of equipment is already at the job site, it is not appropriate to utilize mob./demob. costs again in an estimate.

General Conditions

Cost data in this book is presented in two ways: Bare Costs and Total Cost including O&P (Overhead and Profit). General Conditions, when applicable, should also be added to the Total Cost including O&P. The costs for General Conditions are listed in Division 1 of the Unit Price Section and the Reference Section of this book. General Conditions for the *Installing Contractor* may range from 0% to 10% of the Total Cost including O&P. For the *General* or *Prime Contractor*, costs for General Conditions may range from 5% to 15% of the Total Cost including O&P, with a figure of 10% as the most typical allowance.

Overhead and Profit

Total Cost including O&P for the *Installing Contractor* is shown in the last column on both the Unit Price and the Assemblies pages of this book. This figure is the sum of the bare material cost plus 10% for profit, the bare labor cost plus total overhead and profit, and the bare equipment cost plus 10% for profit. Details for the calculation of Overhead and Profit on labor are shown on the inside back cover and in the Reference Section of this book. (See the "How RSMeans Data Works" for an example of this calculation.)

How to Use the City Cost Indexes

What you should know before you begin

RSMeans City Cost Indexes (CCI) are an extremely useful tool to use when you want to compare costs from city to city and region to region.

This publication contains average construction cost indexes for 731 U.S. and Canadian cities covering over 930 three-digit zip code locations, as listed directly under each city.

Keep in mind that a City Cost Index number is a percentage ratio of a specific city's cost to the national average cost of the same item at a stated time period.

In other words, these index figures represent relative construction factors (or, if you prefer, multipliers) for Material and Installation costs, as well as the weighted average for Total In Place costs for each CSI MasterFormat division. Installation costs include both labor and equipment rental costs. When estimating equipment rental rates only, for a specific location, use 01 54 33 EQUIPMENT RENTAL COSTS in the Reference Section at the back of the book.

The 30 City Average Index is the average of 30 major U.S. cities and serves as a National Average.

Index figures for both material and installation are based on the 30 major city average of 100 and represent the cost relationship as of July 1, 2013. The index for each division is computed from representative material and labor quantities for that division. The weighted average for each city is a weighted total of the components listed above it, but does not include relative productivity between trades or cities.

As changes occur in local material prices, labor rates, and equipment rental rates (including fuel costs), the impact of these changes should be accurately measured by the change in the City Cost Index for each particular city (as compared to the 30 City Average).

Therefore, if you know (or have estimated) building costs in one city today, you can easily convert those costs to expected building costs in another city.

In addition, by using the Historical Cost Index, you can easily convert National Average building costs at a particular time to the approximate building costs for some other time. The City Cost Indexes can then be applied to calculate the costs for a particular city.

Quick Calculations

Location Adjustment Using the City Cost Indexes:

$$\frac{\text{Index for City A}}{\text{Index for City B}} \times \text{Cost in City B} = \text{Cost in City A}$$

Time Adjustment for the National Average Using the Historical Cost Index:

$$\frac{\text{Index for Year A}}{\text{Index for Year B}} \times \text{Cost in Year B} = \text{Cost in Year A}$$

Adjustment from the National Average:

$$\frac{\text{Index for City A}}{100} \times \text{National Average Cost} = \text{Cost in City A}$$

Since each of the other RSMeans publications contains many different items, any *one* item multiplied by the particular city index may give incorrect results. However, the larger the number of items compiled, the closer the results should be to actual costs for that particular city.

The City Cost Indexes for Canadian cities are calculated using Canadian material and equipment prices and labor rates, in Canadian dollars. Therefore, indexes for Canadian cities can be used to convert U.S. National Average prices to local costs in Canadian dollars.

How to use this section

1. Compare costs from city to city.

In using the RSMeans Indexes, remember that an index number is not a fixed number but a ratio: It's a percentage ratio of a building component's cost at any stated time to the National Average cost of that same component at the same time period. Put in the form of an equation:

$$\frac{\text{Specific City Cost}}{\text{National Average Cost}} \times 100 = \text{City Index Number}$$

Therefore, when making cost comparisons between cities, do not subtract one city's index number from the index number of another city and read the result as a percentage difference. Instead, divide one city's index number by that of the other city. The resulting number may then be used as a multiplier to calculate cost differences from city to city.

The formula used to find cost differences between cities for the purpose of comparison is as follows:

$$\frac{\text{City A Index}}{\text{City B Index}} \times \text{City B Cost (Known)} = \text{City A Cost (Unknown)}$$

In addition, you can use RSMeans CCI to calculate and compare costs division by division between cities using the same basic formula. (Just be sure that you're comparing similar divisions.)

2. Compare a specific city's construction costs with the National Average.

When you're studying construction location feasibility, it's advisable to compare a prospective project's cost index with an index of the National Average cost.

For example, divide the weighted average index of construction costs of a specific city by that of the 30 City Average, which = 100.

$$\frac{\text{City Index}}{100} = \%\text{ of National Average}$$

As a result, you get a ratio that indicates the relative cost of construction in that city in comparison with the National Average.

3. Convert U.S. National Average to actual costs in Canadian City.

$$\frac{\text{Index for Canadian City}}{100} \times \text{National Average Cost} = \text{Cost in Canadian City in \$ CAN}$$

4. Adjust construction cost data based on a National Average.

When you use a source of construction cost data which is based on a National Average (such as RSMeans cost data publications), it is necessary to adjust those costs to a specific location.

$$\frac{\text{City Index}}{100} \times \text{"Book" Cost Based on National Average Costs} = \text{City Cost (Unknown)}$$

5. When applying the City Cost Indexes to demolition projects, use the appropriate division installation index. For example, for removal of existing doors and windows, use Division 8 (Openings) index.

What you might like to know about how we developed the Indexes

The information presented in the CCI is organized according to the Construction Specifications Institute (CSI) MasterFormat 2012 classification system.

To create a reliable index, RSMeans researched the building type most often constructed in the United States and Canada. Because it was concluded that no one type of building completely represented the building construction industry, nine different types of buildings were combined to create a composite model.

The exact material, labor, and equipment quantities are based on detailed analyses of these nine building types, and then each quantity is weighted in proportion to expected usage. These various material items, labor hours, and equipment rental rates are thus combined to form a composite building representing as closely as possible the actual usage of materials, labor, and equipment used in the North American building construction industry.

The following structures were chosen to make up that composite model:

1. Factory, 1 story
2. Office, 2–4 story
3. Store, Retail
4. Town Hall, 2–3 story
5. High School, 2–3 story
6. Hospital, 4–8 story
7. Garage, Parking
8. Apartment, 1–3 story
9. Hotel/Motel, 2–3 story

For the purposes of ensuring the timeliness of the data, the components of the index for the composite model have been streamlined. They currently consist of:

- specific quantities of 66 commonly used construction materials;
- specific labor-hours for 21 building construction trades; and
- specific days of equipment rental for 6 types of construction equipment (normally used to install the 66 material items by the 21 trades.) Fuel costs and routine maintenance costs are included in the equipment cost.

A sophisticated computer program handles the updating of all costs for each city on a quarterly basis. Material and equipment price quotations are gathered quarterly from 731 cities in the United States and Canada. These prices and the latest negotiated labor wage rates for 21 different building trades are used to compile the quarterly update of the City Cost Index.

The 30 major U.S. cities used to calculate the National Average are:

Atlanta, GA
Baltimore, MD
Boston, MA
Buffalo, NY
Chicago, IL
Cincinnati, OH
Cleveland, OH
Columbus, OH
Dallas, TX
Denver, CO
Detroit, MI
Houston, TX
Indianapolis, IN
Kansas City, MO
Los Angeles, CA
Memphis, TN
Milwaukee, WI
Minneapolis, MN
Nashville, TN
New Orleans, LA
New York, NY
Philadelphia, PA
Phoenix, AZ
Pittsburgh, PA
St. Louis, MO
San Antonio, TX
San Diego, CA
San Francisco, CA
Seattle, WA
Washington, DC

What the CCI does not indicate

The weighted average for each city is a total of the divisional components weighted to reflect typical usage, but it does not include the productivity variations between trades or cities.

In addition, the CCI does not take into consideration factors such as the following:

- managerial efficiency
- competitive conditions
- automation
- restrictive union practices
- unique local requirements
- regional variations due to specific building codes

Installing Contractor's Overhead & Profit

Below are the **average** installing contractor's percentage markups applied to base labor rates to arrive at typical billing rates.

Column A: Labor rates are based on union wages averaged for 30 major U.S. cities. Base rates including fringe benefits are listed hourly and daily. These figures are the sum of the wage rate and employer-paid fringe benefits such as vacation pay, employer-paid health and welfare costs, pension costs, plus appropriate training and industry advancement funds costs.

Column B: Workers' compensation rates are the national average of state rates established for each trade.

Column C: Column C lists average fixed overhead figures for all trades. Included are federal and state unemployment costs set at 7.8%; social security taxes (FICA) set at 7.65%; builder's risk insurance costs set at 0.44%; and public liability costs set at 2.02%. All the percentages except those for social security taxes vary from state to state as well as from company to company.

Columns D and E: Percentages in Columns D and E are based on the presumption that the installing contractor has annual billing of $4,000,000 and up. Overhead percentages may increase with smaller annual billing. The overhead percentages for any given contractor may vary greatly and depend on a number of factors, such as the contractor's annual volume, engineering and logistical support costs, and staff requirements. The figures for overhead and profit will also vary depending on the type of job, the job location, and the prevailing economic conditions. All factors should be examined very carefully for each job.

Column F: Column F lists the total of Columns B, C, D, and E.

Column G: Column G is Column A (hourly base labor rate) multiplied by the percentage in Column F (O&P percentage).

Column H: Column H is the total of Column A (hourly base labor rate) plus Column G (Total O&P).

Column I: Column I is Column H multiplied by eight hours.

		A		B	C	D	E	F	G	H	I	
		Base Rate Incl. Fringes		Workers' Comp. Ins.	Average Fixed Overhead	Overhead	Profit	Total Overhead & Profit		Rate with O & P		
Abbr.	Trade	Hourly	Daily					%	Amount	Hourly	Daily	
Skwk	Skilled Workers Average (35 trades)	$47.30	$378.40	14.0%	17.9%	13.0%	10%	54.9%	$25.95	$ 73.25	$586.00	←
	Helpers Average (5 trades)	34.65	277.20	16.1		11.0		55.0	19.05	53.70	429.60	
	Foreman Average, Inside ($.50 over trade)	47.80	382.40	14.0		13.0		54.9	26.25	74.05	592.40	
	Foreman Average, Outside ($2.00 over trade)	49.30	394.40	14.0		13.0		54.9	27.05	76.35	610.80	
Clab	Common Building Laborers	36.65	293.20	15.4		11.0		54.3	19.90	56.55	452.40	
Asbe	Asbestos/Insulation Workers/Pipe Coverers	51.15	409.20	11.7		16.0		55.6	28.45	79.60	636.80	
Boil	Boilermakers	59.90	479.20	9.9		16.0		53.8	32.25	92.15	737.20	
Bric	Bricklayers	45.60	364.80	13.5		11.0		52.4	23.90	69.50	556.00	
Brhe	Bricklayer Helpers	37.00	296.00	13.5		11.0		52.4	19.40	56.40	451.20	
Carp	Carpenters	45.85	366.80	15.4		11.0		54.3	24.90	70.75	566.00	
Cefi	Cement Finishers	44.05	352.40	8.9		11.0		47.8	21.05	65.10	520.80	
Elec	Electricians	53.35	426.80	5.8		16.0		49.7	26.50	79.85	638.80	←
Elev	Elevator Constructors	74.15	593.20	5.7		16.0		49.5	36.80	110.95	887.60	
Eqhv	Equipment Operators, Crane or Shovel	50.25	402.00	9.7		14.0		51.6	25.95	76.20	609.60	
Eqmd	Equipment Operators, Medium Equipment	48.90	391.20	9.7		14.0		51.6	25.25	74.15	593.20	
Eqlt	Equipment Operators, Light Equipment	47.05	376.40	9.7		14.0		51.6	24.30	71.35	570.80	
Eqol	Equipment Operators, Oilers	43.55	348.40	9.7		14.0		51.6	22.45	66.00	528.00	
Eqmm	Equipment Operators, Master Mechanics	50.15	401.20	9.7		14.0		51.6	25.90	76.05	608.40	←
Glaz	Glaziers	44.05	352.40	13.2		11.0		52.1	22.95	67.00	536.00	
Lath	Lathers	40.60	324.80	8.1		11.0		47.0	19.10	59.70	477.60	
Marb	Marble Setters	42.25	338.00	13.5		11.0		52.4	22.15	64.40	515.20	
Mill	Millwrights	48.10	384.80	8.4		11.0		47.3	22.75	70.85	566.80	
Mstz	Mosaic & Terrazzo Workers	41.65	333.20	8.5		11.0		47.4	19.75	61.40	491.20	
Pord	Painters, Ordinary	39.55	316.40	11.5		11.0		50.4	19.95	59.50	476.00	
Psst	Painters, Structural Steel	40.50	324.00	41.5		11.0		80.4	32.55	73.05	584.40	
Pape	Paper Hangers	39.80	318.40	11.5		11.0		50.4	20.05	59.85	478.80	
Pile	Pile Drivers	44.40	355.20	14.7		16.0		58.6	26.00	70.40	563.20	
Plas	Plasterers	41.95	335.60	11.6		11.0		50.5	21.20	63.15	505.20	
Plah	Plasterer Helpers	37.20	297.60	11.6		11.0		50.5	18.80	56.00	448.00	
Plum	Plumbers	57.55	460.40	7.1		16.0		51.0	29.35	86.90	695.20	
Rodm	Rodmen (Reinforcing)	50.85	406.80	15.2		14.0		57.1	28.90	79.55	636.40	
Rofc	Roofers, Composition	39.15	313.20	31.3		11.0		70.2	27.50	66.65	533.20	
Rots	Roofers, Tile & Slate	39.35	314.80	31.3		11.0		70.2	27.60	66.95	535.60	
Rohe	Roofers, Helpers (Composition)	29.15	233.20	31.3		11.0		70.2	20.45	49.60	396.80	
Shee	Sheet Metal Workers	54.70	437.60	8.8		16.0		52.7	28.85	83.55	668.40	
Spri	Sprinkler Installers	55.40	443.20	7.2		16.0		51.1	28.30	83.70	669.60	
Stpi	Steamfitters or Pipefitters	58.50	468.00	7.1		16.0		51.0	29.85	88.35	706.80	
Ston	Stone Masons	45.85	366.80	13.5		11.0		52.4	24.05	69.90	559.20	
Stwk	Structural Steel Workers	51.10	408.80	34.6		14.0		76.5	39.10	90.20	721.60	
Tilf	Tile Layers	41.95	335.60	8.5		11.0		47.4	19.90	61.85	494.80	
Tilh	Tile Layers Helpers	33.25	266.00	8.5		11.0		47.4	15.75	49.00	392.00	
Trkl	Truck Drivers, Light	36.50	292.00	13.7		11.0		52.6	19.20	55.70	445.60	
Trkh	Truck Drivers, Heavy	37.55	300.40	13.7		11.0		52.6	19.75	57.30	458.40	
Sswl	Welders, Structural Steel	51.10	408.80	34.6		14.0		76.5	39.10	90.20	721.60	
Wrck	*Wrecking	36.65	293.21	29.2		11.0		68.1	24.95	61.60	492.80	

*Not included in averages

Estimating Tips

- This section contains the average costs to rent and operate hundreds of pieces of construction equipment. This is useful information when estimating the time and material requirements of any particular operation in order to establish a unit or total cost. Equipment costs include not only rental, but also operating costs for equipment under normal use.

Rental Costs

- Equipment rental rates are obtained from industry sources throughout North America–contractors, suppliers, dealers, manufacturers, and distributors.
- Rental rates vary throughout the country, with larger cities generally having lower rates. Lease plans for new equipment are available for periods in excess of six months, with a percentage of payments applying toward purchase.
- Monthly rental rates vary from 2% to 5% of the purchase price of the equipment depending on the anticipated life of the equipment and its wearing parts.
- Weekly rental rates are about 1/3 the monthly rates, and daily rental rates are about 1/3 the weekly rate.
- Rental rates can also be treated as reimbursement costs for contractor-owned equipment. Owned equipment costs include depreciation, loan payments, interest, taxes, insurance, storage, and major repairs.

Operating Costs

- The operating costs include parts and labor for routine servicing, such as repair and replacement of pumps, filters and worn lines. Normal operating expendables, such as fuel, lubricants, tires and electricity (where applicable), are also included.
- Extraordinary operating expendables with highly variable wear patterns, such as diamond bits and blades, are excluded. These costs can be found as material costs in the Unit Price section.
- The hourly operating costs listed do not include the operator's wages.

Equipment Cost/Day

- Any power equipment required by a crew is shown in the Crew Listings with a daily cost.
- The daily cost of equipment needed by a crew is based on dividing the weekly rental rate by 5 (number of working days in the week), and then adding the hourly operating cost times 8 (the number of hours in a day). This "Equipment Cost/Day" is shown in the far right column of the Equipment Rental pages.
- If equipment is needed for only one or two days, it is best to develop your own cost by including components for daily rent and hourly operating cost. This is important when the listed Crew for a task does not contain the equipment needed, such as a crane for lifting mechanical heating/cooling equipment up onto a roof.
- If the quantity of work is less than the crew's Daily Output shown for a Unit Price line item that includes a bare unit equipment cost, it is recommended to estimate one day's rental cost and operating cost for equipment shown in the Crew Listing for that line item.

Mobilization/ Demobilization

- The cost to move construction equipment from an equipment yard or rental company to the jobsite and back again is not included in equipment rental costs listed in the Reference section, nor in the bare equipment cost of any Unit Price line item, nor in any equipment costs shown in the Crew listings.
- Mobilization (to the site) and demobilization (from the site) costs can be found in the Unit Price section.
- If a piece of equipment is already at the jobsite, it is not appropriate to utilize mobil./demob. costs again in an estimate.

01 54 33 | Equipment Rental

				UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
50	4901	Trailer, low bed, 75 ton capacity		Ea.	10.10	232	695	2,075	219.80	50
	5000	Road planer, walk behind, 10" cutting width, 10 H.P.			4.00	33.50	100	300	52	
	5100	Self-propelled, 12" cutting width, 64 H.P.			11.45	113	340	1,025	159.60	
	5120	Traffic line remover, metal ball blaster, truck mounted, 115 H.P.			48.75	750	2,245	6,725	839	
	5140	Grinder, truck mounted, 115 H.P.			55.45	810	2,435	7,300	930.60	
	5160	Walk-behind, 11 H.P.			4.55	53.50	160	480	68.40	
	5200	Pavement profiler, 4' to 6' wide, 450 H.P.			258.10	3,350	10,045	30,100	4,074	
	5300	8' to 10' wide, 750 H.P.			405.10	4,400	13,180	39,500	5,877	
	5400	Roadway plate, steel, 1" x 8' x 20'			.08	13	39	117	8.45	
	5600	Stabilizer, self-propelled, 150 H.P.			50.10	610	1,835	5,500	767.80	
	5700	310 H.P.			100.25	1,700	5,125	15,400	1,827	
	5800	Striper, truck mounted, 120 gallon paint, 460 H.P.			71.05	485	1,460	4,375	860.40	
	5900	Thermal paint heating kettle, 115 gallons			5.95	25.50	77	231	63	
	6000	Tar kettle, 330 gallon, trailer mounted			8.70	58.50	175	525	104.60	
	7000	Tunnel locomotive, diesel, 8 to 12 ton			32.40	585	1,760	5,275	611.20	
	7005	Electric, 10 ton			26.55	670	2,010	6,025	614.40	
	7010	Muck cars, 1/2 C.Y. capacity			2.05	24.50	74	222	31.20	
	7020	1 C.Y. capacity			2.30	32.50	98	294	38	
	7030	2 C.Y. capacity			2.45	36.50	110	330	41.60	
	7040	Side dump, 2 C.Y. capacity			2.65	45	135	405	48.20	
	7050	3 C.Y. capacity			3.55	51.50	155	465	59.40	
	7060	5 C.Y. capacity			5.10	65	195	585	79.80	
	7100	Ventilating blower for tunnel, 7-1/2 H.P.			2.05	51.50	155	465	47.40	
	7110	10 H.P.			2.22	53.50	160	480	49.75	
	7120	20 H.P.			3.43	69.50	208	625	69.05	
	7140	40 H.P.			5.59	98.50	295	885	103.70	
	7160	60 H.P.			8.54	152	455	1,375	159.30	
	7175	75 H.P.			11.25	207	620	1,850	214	
	7180	200 H.P.			22.56	305	910	2,725	362.50	
	7800	Windrow loader, elevating			55.95	1,325	3,960	11,900	1,240	
60	0010	**LIFTING AND HOISTING EQUIPMENT RENTAL** without operators	R015433 -10							60
	0120	Aerial lift truck, 2 person, to 80'		Ea.	26.75	715	2,145	6,425	643	
	0140	Boom work platform, 40' snorkel	R015433 -15		16.10	277	830	2,500	294.80	
	0150	Crane, flatbed mounted, 3 ton capacity			16.55	193	580	1,750	248.40	
	0200	Crane, climbing, 106' jib, 6000 lb. capacity, 410 fpm	R312316 -45		37.76	1,625	4,860	14,600	1,274	
	0300	101' jib, 10,250 lb. capacity, 270 fpm			44.26	2,050	6,160	18,500	1,586	
	0500	Tower, static, 130' high, 106' jib, 6200 lb. capacity at 400 fpm			41.56	1,875	5,620	16,900	1,456	
	0600	Crawler mounted, lattice boom, 1/2 C.Y., 15 tons at 12' radius			37.52	640	1,920	5,750	684.15	
	0700	3/4 C.Y., 20 tons at 12' radius			50.03	800	2,400	7,200	880.25	
	0800	1 C.Y., 25 tons at 12' radius			66.70	1,075	3,195	9,575	1,173	
	0900	1-1/2 C.Y., 40 tons at 12' radius			66.70	1,075	3,225	9,675	1,179	
	1000	2 C.Y., 50 tons at 12' radius			70.70	1,250	3,765	11,300	1,319	
	1100	3 C.Y., 75 tons at 12' radius			75.65	1,475	4,435	13,300	1,492	
	1200	100 ton capacity, 60' boom			85.65	1,700	5,090	15,300	1,703	
	1300	165 ton capacity, 60' boom			109.15	2,000	5,980	17,900	2,069	
	1400	200 ton capacity, 70' boom			132.10	2,500	7,480	22,400	2,553	
	1500	350 ton capacity, 80' boom			184.60	3,725	11,210	33,600	3,719	
	1600	Truck mounted, lattice boom, 6 x 4, 20 tons at 10' radius			37.31	1,100	3,310	9,925	960.50	
	1700	25 tons at 10' radius			40.35	1,200	3,610	10,800	1,045	
	1800	8 x 4, 30 tons at 10' radius			43.85	1,275	3,840	11,500	1,119	
	1900	40 tons at 12' radius			46.92	1,325	4,010	12,000	1,177	
	2000	60 tons at 15' radius			53.24	1,425	4,240	12,700	1,274	
	2050	82 tons at 15' radius			60.06	1,525	4,540	13,600	1,388	
	2100	90 tons at 15' radius			67.57	1,650	4,940	14,800	1,529	
	2200	115 tons at 15' radius			76.34	1,850	5,520	16,600	1,715	
	2300	150 tons at 18' radius			84.40	1,950	5,815	17,400	1,838	
	2350	165 tons at 18' radius			90.25	2,050	6,160	18,500	1,954	
	2400	Truck mounted, hydraulic, 12 ton capacity			43.00	530	1,595	4,775	663	

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				UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
50	4901	Trailer, low bed, 75 ton capacity		Ea.	10.10	232	695	2,075	219.80	50
	5000	Road planer, walk behind, 10" cutting width, 10 H.P.			4.00	33.50	100	300	52	
	5100	Self-propelled, 12" cutting width, 64 H.P.			11.45	113	340	1,025	159.60	
	5120	Traffic line remover, metal ball blaster, truck mounted, 115 H.P.			48.75	750	2,245	6,725	839	
	5140	Grinder, truck mounted, 115 H.P.			55.45	810	2,435	7,300	930.60	
	5160	Walk-behind, 11 H.P.			4.55	53.50	160	480	68.40	
	5200	Pavement profiler, 4' to 6' wide, 450 H.P.			258.10	3,350	10,045	30,100	4,074	
	5300	8' to 10' wide, 750 H.P.			405.10	4,400	13,180	39,500	5,877	
	5400	Roadway plate, steel, 1" x 8' x 20'			.08	13	39	117	8.45	
	5600	Stabilizer, self-propelled, 150 H.P.			50.10	610	1,835	5,500	767.80	
	5700	310 H.P.			100.25	1,700	5,125	15,400	1,827	
	5800	Striper, truck mounted, 120 gallon paint, 460 H.P.			71.05	485	1,460	4,375	860.40	
	5900	Thermal paint heating kettle, 115 gallons			5.95	25.50	77	231	63	
	6000	Tar kettle, 330 gallon, trailer mounted			8.70	58.50	175	525	104.60	
	7000	Tunnel locomotive, diesel, 8 to 12 ton			32.40	585	1,760	5,275	611.20	
	7005	Electric, 10 ton			26.55	670	2,010	6,025	614.40	
	7010	Muck cars, 1/2 C.Y. capacity			2.05	24.50	74	222	31.20	
	7020	1 C.Y. capacity			2.30	32.50	98	294	38	
	7030	2 C.Y. capacity			2.45	36.50	110	330	41.60	
	7040	Side dump, 2 C.Y. capacity			2.65	45	135	405	48.20	
	7050	3 C.Y. capacity			3.55	51.50	155	465	59.40	
	7060	5 C.Y. capacity			5.10	65	195	585	79.80	
	7100	Ventilating blower for tunnel, 7-1/2 H.P.			2.05	51.50	155	465	47.40	
	7110	10 H.P.			2.22	53.50	160	480	49.75	
	7120	20 H.P.			3.43	69.50	208	625	69.05	
	7140	40 H.P.			5.59	98.50	295	885	103.70	
	7160	60 H.P.			8.54	152	455	1,375	159.30	
	7175	75 H.P.			11.25	207	620	1,850	214	
	7180	200 H.P.			22.56	305	910	2,725	362.50	
	7800	Windrow loader, elevating			55.95	1,325	3,960	11,900	1,240	
60	0010	**LIFTING AND HOISTING EQUIPMENT RENTAL** without operators	R015433 -10							60
	0120	Aerial lift truck, 2 person, to 80'		Ea.	26.75	715	2,145	6,425	643	
	0140	Boom work platform, 40' snorkel	R015433 -15		16.10	277	830	2,500	294.80	
	0150	Crane, flatbed mounted, 3 ton capacity			16.55	193	580	1,750	248.40	
	0200	Crane, climbing, 106' jib, 6000 lb. capacity, 410 fpm	R312316 -45		37.76	1,625	4,860	14,600	1,274	
	0300	101' jib, 10,250 lb. capacity, 270 fpm			44.26	2,050	6,160	18,500	1,586	
	0500	Tower, static, 130' high, 106' jib, 6200 lb. capacity at 400 fpm			41.56	1,875	5,620	16,900	1,456	
	0600	Crawler mounted, lattice boom, 1/2 C.Y., 15 tons at 12' radius			37.52	640	1,920	5,750	684.15	
	0700	3/4 C.Y., 20 tons at 12' radius			50.03	800	2,400	7,200	880.25	
	0800	1 C.Y., 25 tons at 12' radius			66.70	1,075	3,195	9,575	1,173	
	0900	1-1/2 C.Y., 40 tons at 12' radius			66.70	1,075	3,225	9,675	1,179	
	1000	2 C.Y., 50 tons at 12' radius			70.70	1,250	3,765	11,300	1,319	
	1100	3 C.Y., 75 tons at 12' radius			75.65	1,475	4,435	13,300	1,492	
	1200	100 ton capacity, 60' boom			85.65	1,700	5,090	15,300	1,703	
	1300	165 ton capacity, 60' boom			109.15	2,000	5,980	17,900	2,069	
	1400	200 ton capacity, 70' boom			132.10	2,500	7,480	22,400	2,553	
	1500	350 ton capacity, 80' boom			184.60	3,725	11,210	33,600	3,719	
	1600	Truck mounted, lattice boom, 6 x 4, 20 tons at 10' radius			37.31	1,100	3,310	9,925	960.50	
	1700	25 tons at 10' radius			40.35	1,200	3,610	10,800	1,045	
	1800	8 x 4, 30 tons at 10' radius			43.85	1,275	3,840	11,500	1,119	
	1900	40 tons at 12' radius			46.92	1,325	4,010	12,000	1,177	
	2000	60 tons at 15' radius			53.24	1,425	4,240	12,700	1,274	
	2050	82 tons at 15' radius			60.06	1,525	4,540	13,600	1,388	
	2100	90 tons at 15' radius			67.57	1,650	4,940	14,800	1,529	
	2200	115 tons at 15' radius			76.34	1,850	5,520	16,600	1,715	
	2300	150 tons at 18' radius			84.40	1,950	5,815	17,400	1,838	
	2350	165 tons at 18' radius			90.25	2,050	6,160	18,500	1,954	
	2400	Truck mounted, hydraulic, 12 ton capacity			43.00	530	1,595	4,775	663	

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			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
60	2500	25 ton capacity	Ea.	45.35	640	1,915	5,750	745.80	60
	2550	33 ton capacity		45.90	655	1,960	5,875	759.20	
	2560	40 ton capacity		59.35	765	2,290	6,875	932.80	
	2600	55 ton capacity		77.50	860	2,585	7,750	1,137	
	2700	80 ton capacity		101.35	1,400	4,205	12,600	1,652	
	2720	100 ton capacity		94.95	1,450	4,325	13,000	1,625	
	2740	120 ton capacity		109.95	1,550	4,665	14,000	1,813	
	2760	150 ton capacity		128.55	2,050	6,135	18,400	2,255	
	2800	Self-propelled, 4 x 4, with telescoping boom, 5 ton		17.75	230	690	2,075	280	
	2900	12-1/2 ton capacity		32.65	365	1,100	3,300	481.20	
	3000	15 ton capacity		33.35	385	1,160	3,475	498.80	
	3050	20 ton capacity		36.30	450	1,350	4,050	560.40	
	3100	25 ton capacity		37.90	505	1,520	4,550	607.20	
	3150	40 ton capacity		46.50	570	1,705	5,125	713	
	3200	Derricks, guy, 20 ton capacity, 60' boom, 75' mast		27.18	395	1,190	3,575	455.45	
	3300	100' boom, 115' mast		42.63	685	2,050	6,150	751.05	
	3400	Stiffleg, 20 ton capacity, 70' boom, 37' mast		29.70	515	1,550	4,650	547.60	
	3500	100' boom, 47' mast		45.64	825	2,480	7,450	861.10	
	3550	Helicopter, small, lift to 1250 lb. maximum, w/pilot		100.87	3,200	9,610	28,800	2,729	
	3600	Hoists, chain type, overhead, manual, 3/4 ton		.10	.33	1	3	1	
	3900	10 ton		.75	6	18	54	9.60	
	4000	Hoist and tower, 5000 lb. cap., portable electric, 40' high		4.77	228	685	2,050	175.15	
	4100	For each added 10' section, add		.11	18	54	162	11.70	
	4200	Hoist and single tubular tower, 5000 lb. electric, 100' high		6.47	320	957	2,875	243.15	
	4300	For each added 6'-6" section, add		.19	31	93	279	20.10	
	4400	Hoist and double tubular tower, 5000 lb., 100' high		6.95	350	1,054	3,150	266.40	
	4500	For each added 6'-6" section, add		.21	34.50	103	310	22.30	
	4550	Hoist and tower, mast type, 6000 lb., 100' high		7.48	365	1,093	3,275	278.45	
	4570	For each added 10' section, add		.13	21.50	64	192	13.85	
	4600	Hoist and tower, personnel, electric, 2000 lb., 100' @ 125 fpm		15.90	970	2,910	8,725	709.20	
	4700	3000 lb., 100' @ 200 fpm		18.13	1,100	3,290	9,875	803.05	
	4800	3000 lb., 150' @ 300 fpm		20.13	1,225	3,690	11,100	899.05	
	4900	4000 lb., 100' @ 300 fpm		20.82	1,250	3,760	11,300	918.55	
	5000	6000 lb., 100' @ 275 fpm		22.44	1,325	3,950	11,900	969.50	
	5100	For added heights up to 500', add	L.F.	.01	1.67	5	15	1.10	
	5200	Jacks, hydraulic, 20 ton	Ea.	.05	2	6	18	1.60	
	5500	100 ton		.40	11.65	35	105	10.20	
	6100	Jacks, hydraulic, climbing w/50' jackrods, control console, 30 ton cap.		1.97	131	394	1,175	94.55	
	6150	For each added 10' jackrod section, add		.05	3.33	10	30	2.40	
	6300	50 ton capacity		3.17	211	633	1,900	151.95	
	6350	For each added 10' jackrod section, add		.06	4	12	36	2.90	
	6500	125 ton capacity		8.30	555	1,660	4,975	398.40	
	6550	For each added 10' jackrod section, add		.57	37.50	113	340	27.15	
	6600	Cable jack, 10 ton capacity with 200' cable		1.65	110	329	985	79	
	6650	For each added 50' of cable, add		.20	13	39	117	9.40	
70	0010	**WELLPOINT EQUIPMENT RENTAL** without operators R015433-10							70
	0020	Based on 2 months rental							
	0100	Combination jetting & wellpoint pump, 60 H.P. diesel	Ea.	18.14	325	976	2,925	340.30	
	0200	High pressure gas jet pump, 200 H.P., 300 psi	"	43.54	278	834	2,500	515.10	
	0300	Discharge pipe, 8" diameter	L.F.	.01	.53	1.59	4.77	.40	
	0350	12" diameter		.01	.78	2.33	7	.55	
	0400	Header pipe, flows up to 150 GPM, 4" diameter		.01	.48	1.44	4.32	.35	
	0500	400 GPM, 6" diameter		.01	.56	1.69	5.05	.40	
	0600	800 GPM, 8" diameter		.01	.78	2.33	7	.55	
	0700	1500 GPM, 10" diameter		.01	.82	2.46	7.40	.55	
	0800	2500 GPM, 12" diameter		.02	1.55	4.65	13.95	1.10	
	0900	4500 GPM, 16" diameter		.03	1.98	5.95	17.85	1.45	

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			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
40	2500	Diesel engine, 20 kW	Ea.	12.55	68.50	205	615	141.40	40
	2600	50 kW		24.35	103	310	930	256.80	
	2700	100 kW		45.15	130	390	1,175	439.20	
	2800	250 kW		88.85	237	710	2,125	852.80	
	2850	Hammer, hydraulic, for mounting on boom, to 500 ft lb.		2.55	75	225	675	65.40	
	2860	1000 ft lb.		4.35	127	380	1,150	110.80	
	2900	Heaters, space, oil or electric, 50 MBH		1.93	7.65	23	69	20.05	
	3000	100 MBH		3.61	10.65	32	96	35.30	
	3100	300 MBH		10.58	38.50	115	345	107.65	
	3150	500 MBH		17.40	45	135	405	166.20	
	3200	Hose, water, suction with coupling, 20' long, 2" diameter		.02	3	9	27	1.95	
	3210	3" diameter		.03	4.33	13	39	2.85	
	3220	4" diameter		.03	5	15	45	3.25	
	3230	6" diameter		.11	17.65	53	159	11.50	
	3240	8" diameter		.20	33.50	100	300	21.60	
	3250	Discharge hose with coupling, 50' long, 2" diameter		.01	1.33	4	12	.90	
	3260	3" diameter		.01	2.33	7	21	1.50	
	3270	4" diameter		.02	3.67	11	33	2.35	
	3280	6" diameter		.06	9.35	28	84	6.10	
	3290	8" diameter		.20	33.50	100	300	21.60	
	3295	Insulation blower		.77	6	18	54	9.75	
	3300	Ladders, extension type, 16' to 36' long		.14	22.50	68	204	14.70	
	3400	40' to 60' long		.19	31	93	279	20.10	
	3405	Lance for cutting concrete		2.52	89	267	800	73.55	
	3407	Lawn mower, rotary, 22", 5 H.P.		2.10	59	177	530	52.20	
	3408	48" self propelled		2.92	75	225	675	68.35	
	3410	Level, electronic, automatic, with tripod and leveling rod		1.49	99	297	890	71.30	
	3430	Laser type, for pipe and sewer line and grade		.73	48.50	145	435	34.85	
	3440	Rotating beam for interior control		.97	64	192	575	46.15	
	3460	Builder's optical transit, with tripod and rod		.10	16.65	50	150	10.80	
	3500	Light towers, towable, with diesel generator, 2000 watt		4.60	93.50	280	840	92.80	
	3600	4000 watt		4.90	98.50	295	885	98.20	
	3700	Mixer, powered, plaster and mortar, 6 C.F., 7 H.P.		2.90	19	57	171	34.60	
	3800	10 C.F., 9 H.P.		3.05	30.50	91	273	42.60	
	3850	Nailer, pneumatic		.47	31	93	279	22.35	
	3900	Paint sprayers complete, 8 CFM		.94	62.50	187	560	44.90	
	4000	17 CFM		1.57	104	313	940	75.15	
	4020	Pavers, bituminous, rubber tires, 8' wide, 50 H.P., diesel		31.85	500	1,500	4,500	554.80	
	4030	10' wide, 150 H.P.		107.95	1,825	5,460	16,400	1,956	
	4050	Crawler, 8' wide, 100 H.P., diesel		90.45	1,825	5,500	16,500	1,824	
	4060	10' wide, 150 H.P.		115.10	2,250	6,715	20,100	2,264	
	4070	Concrete paver, 12' to 24' wide, 250 H.P.		102.05	1,525	4,600	13,800	1,736	
	4080	Placer-spreader-trimmer, 24' wide, 300 H.P.		147.05	2,475	7,405	22,200	2,657	
	4100	Pump, centrifugal gas pump, 1-1/2" diam., 65 GPM		3.95	50	150	450	61.60	
	4200	2" diameter, 130 GPM		5.30	55	165	495	75.40	
	4300	3" diameter, 250 GPM		5.60	56.50	170	510	78.80	
	4400	6" diameter, 1500 GPM		29.35	177	530	1,600	340.80	
	4500	Submersible electric pump, 1-1/4" diameter, 55 GPM		.38	16.65	50	150	13.05	
	4600	1-1/2" diameter, 83 GPM		.42	19	57	171	14.75	
	4700	2" diameter, 120 GPM		1.43	23.50	71	213	25.65	
	4800	3" diameter, 300 GPM		2.55	41.50	125	375	45.40	
	4900	4" diameter, 560 GPM		10.65	160	480	1,450	181.20	
	5000	6" diameter, 1590 GPM		15.75	215	645	1,925	255	
	5100	Diaphragm pump, gas, single, 1-1/2" diameter		1.18	50.50	152	455	39.85	
	5200	2" diameter		4.25	63.50	190	570	72	
	5300	3" diameter		4.25	63.50	190	570	72	
	5400	Double, 4" diameter		6.35	108	325	975	115.80	
	5450	Pressure washer 5 GPM, 3000 psi		4.80	51.50	155	465	69.40	

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			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
40	5460	7 GPM, 3000 psi	Ea.	6.25	60	180	540	86	40
	5500	Trash pump, self-priming, gas, 2" diameter		4.50	21.50	64	192	48.80	
	5600	Diesel, 4" diameter		9.30	90	270	810	128.40	
	5650	Diesel, 6" diameter		25.55	150	450	1,350	294.40	
	5655	Grout Pump		26.80	260	780	2,350	370.40	
	5700	Salamanders, L.P. gas fired, 100,000 Btu		3.81	13.65	41	123	38.70	
	5705	50,000 Btu		2.39	10.35	31	93	25.30	
	5720	Sandblaster, portable, open top, 3 C.F. capacity		.55	26.50	80	240	20.40	
	5730	6 C.F. capacity		.95	40	120	360	31.60	
	5740	Accessories for above		.13	21.50	64	192	13.85	
	5750	Sander, floor		.71	17	51	153	15.90	
	5760	Edger		.57	18.35	55	165	15.55	
	5800	Saw, chain, gas engine, 18" long		2.25	22	66	198	31.20	
	5900	Hydraulic powered, 36" long		.75	65	195	585	45	
	5950	60" long		.75	66.50	200	600	46	
	6000	Masonry, table mounted, 14" diameter, 5 H.P.		1.31	56.50	170	510	44.50	
	6050	Portable cut-off, 8 H.P.		2.40	33.50	100	300	39.20	
	6100	Circular, hand held, electric, 7-1/4" diameter		.22	4.67	14	42	4.55	
	6200	12" diameter		.22	8	24	72	6.55	
	6250	Wall saw, w/hydraulic power, 10 H.P.		10.45	60	180	540	119.60	
	6275	Shot blaster, walk-behind, 20" wide		4.80	293	880	2,650	214.40	
	6280	Sidewalk broom, walk-behind		2.32	70	210	630	60.55	
	6300	Steam cleaner, 100 gallons per hour		3.70	76.50	230	690	75.60	
	6310	200 gallons per hour		5.25	95	285	855	99	
	6340	Tar Kettle/Pot, 400 gallons		10.50	76.50	230	690	130	
	6350	Torch, cutting, acetylene-oxygen, 150' hose, excludes gases		.30	15	45	135	11.40	
	6360	Hourly operating cost includes tips and gas		19.00				152	
	6410	Toilet, portable chemical		.12	20.50	62	186	13.35	
	6420	Recycle flush type		.15	24.50	74	222	16	
	6430	Toilet, fresh water flush, garden hose,		.18	29.50	89	267	19.25	
	6440	Hoisted, non-flush, for high rise		.15	24.50	73	219	15.80	
	6465	Tractor, farm with attachment		21.90	277	830	2,500	341.20	
	6500	Trailers, platform, flush deck, 2 axle, 25 ton capacity		5.45	117	350	1,050	113.60	
	6600	40 ton capacity		7.00	160	480	1,450	152	
	6700	3 axle, 50 ton capacity		7.55	177	530	1,600	166.40	
	6800	75 ton capacity		9.35	232	695	2,075	213.80	
	6810	Trailer mounted cable reel for high voltage line work		5.35	255	764	2,300	195.60	
	6820	Trailer mounted cable tensioning rig		10.64	505	1,520	4,550	389.10	
	6830	Cable pulling rig		71.33	2,825	8,510	25,500	2,273	
	6900	Water tank trailer, engine driven discharge, 5000 gallons		6.95	143	430	1,300	141.60	
	6925	10,000 gallons		9.50	198	595	1,775	195	
	6950	Water truck, off highway, 6000 gallons		89.80	775	2,330	7,000	1,184	
	7010	Tram car for high voltage line work, powered, 2 conductor		6.27	138	415	1,250	133.15	
	7020	Transit (builder's level) with tripod		.10	16.65	50	150	10.80	
	7030	Trench box, 3000 lb., 6' x 8'		.56	93.50	280	840	60.50	
	7040	7200 lb., 6' x 20'		.78	130	389	1,175	84.05	
	7050	8000 lb., 8' x 16'		1.08	180	540	1,625	116.65	
	7060	9500 lb., 8' x 20'		1.21	201	603	1,800	130.30	
	7065	11,000 lb., 8' x 24'		1.27	211	633	1,900	136.75	
	7070	12,000 lb., 10' x 20'		1.36	227	680	2,050	146.90	
	7100	Truck, pickup, 3/4 ton, 2 wheel drive		15.25	58.50	175	525	157	
	7200	4 wheel drive		15.55	73.50	220	660	168.40	
	7250	Crew carrier, 9 passenger		21.60	86.50	260	780	224.80	
	7290	Flat bed truck, 20,000 lb. GVW		22.30	125	375	1,125	253.40	
	7300	Tractor, 4 x 2, 220 H.P.		31.05	197	590	1,775	366.40	
	7410	330 H.P.		46.05	272	815	2,450	531.40	
	7500	6 x 4, 380 H.P.		52.85	315	950	2,850	612.80	
	7600	450 H.P.		64.05	385	1,150	3,450	742.40	