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2021 NATIONAL RENOVATION & INSURANCE REPAIR ESTIMATOR

edited by Jonathan Russell



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Craftsman Book Company
6058 Corte del Cedro, Carlsbad, CA 92011

Cover design by: Jennifer Johnson

© 2020 Craftsman Book Company ISBN 978-1-57218-368-1 Published November 2020 for the year 2021.

18 FIREPLACES	185-196	32 RETAINING WALLS	337-338
standard, prefabricated, forms	185-186	time & material charts	338
fire brick, chimneys, chimney repair, caps, pots, screen	186-188	33 ROOFING	339-352
grates, screens, doors, clean-out doors, dampers	188-189	steep and complex roof costs, metal shingles	339
chimney pipes, gas fireplace equipment	189-190	asphalt, roll roofing, slate, wood	339-344
fireplace faces and hearths	190-192	fiber & cement, granular coated metal, clay tile	344-345
time & material charts	192-196	furring strips, concrete tile, sheet fiberglass, sheet metal	346-349
19 FLOORING	197-208	built-up roofs, single ply membranes	349-351
carpet, stone, marble, slate, tile, terrazzo	197-200	time & material charts	352
vinyl, linoleum, wood	200-204	34 ROUGH CARPENTRY	353-389
time & material charts	204-208	interior and exterior walls per lf, per sf, and per bf	353-357
20 HAZARDOUS MATERIALS	209-210	top plates, sill plates, headers, posts, precast piers	357-359
time & material charts	209-210	jackposts, lally columns, glu-lam and micro-lam beams	359-360
21 HVAC	211-214	pine and oak beams	360-362
time & material charts	213-214	pine and oak post and beam bents with truss, joints	362-366
22 INSULATION	215-218	deck joist systems, decking, railing, stairs and landing	366-367
time & material charts	216-218	furring strips, joist systems per sf and bf	368-369
23 MANUFACTURED HOUSING MINI PRICE LIST	219-228	l joists, floor trusses, hand-framed roofs and dormers	369-374
24 MASKING & MOVING	229-230	roof trusses, sheathing, underlayment	374-377
time & material charts	230	interior soffits, factory built wall panels, chimney crickets	377-378
25 MASONRY	231-270	time & material charts	379-389
brick walls, brick and block walls, cavity walls	231-239	35 SECURITY SYSTEMS	390-392
brick veneer, other brick wall and veneer costs	240-242	time & material charts	391-392
concrete block, tile, gypsum tile, glass block, pavers	242-248	36 SIDING	393-401
stone walls, stone veneer walls, keystones, quoins	248-250	siding	393-397
stone veneer panels	250-251	fascia, soffits, gutters, downspouts, conductors, shutters	397-399
stone door and window architraves, cut stone	251-254	time & material charts	400-401
wall caps, wall coping	254	37 STAIRS	402-412
repoint brick and stone, brick and stone wall repair	255-257	stair framing, prefabricated spiral stairs, attic stairs	402-405
clean masonry, cut hole in masonry and shore, lintels	257-258	balustrades, brackets, tread trim, newels	406-411
time & material charts	258-270	time & material charts	411-412
26 MOLD REMEDIATION	271-276	38 SUSPENDED CEILINGS	413-417
27 OUTBUILDINGS	277-278	time & material charts	415-417
28 PAINTING	279-302	39 SWIMMING POOLS	418-419
time & material charts	297-302	40 TEMPORARY	420-421
29 PANELING	303-307	time & material charts	421
time & material charts	305-307	41 TILE	422-423
30 PLASTER & STUCCO	308-314	time & material charts	423
time & material charts	313-314	42 WALL COVERINGS	424-428
31 PLUMBING	315-336	time & material charts	426-428
supply pipe, DWV pipe	315-317	43 WATER EXTRACTION	429-430
exterior lines, pressure valve, underground repairs	317	time & material charts	430
rough plumbing by complete house, room, and fixture	317-320	44 WINDOWS	431-447
faucets, fixtures, tub surrounds, showers, shower doors	320-327	aluminum, vinyl, wood	431-441
water heaters, water softeners	327-328	skylights, storm windows	442-445
septic tanks with leach fields, pumps	328-329	reglazing, repair	445-446
antique style faucets and fixtures	329-332	time & material charts	446-447
time & material charts	332-336	▶ QUICKCALCULATORS	448-469
		▶ INDEX	470

about this book

WHAT'S NEW IN 2021

Everyone is hoping that 2021 will be a bit of a makeup year. In 2020 some manufacturers pulled back production over labor safety issues and fears that demand would collapse during COVID-19 quarantines. Demand did drop for some materials, but soared for others, leaving empty shelves and lumber bins that frustrated contractors for much of 2020. Restoration contractors were well-equipped and quick to adapt to new PPE standards and keep crews busy, but both layoffs and shortages occurred. Much of the 2020 instability will linger in 2021, but materials supplies and labor availability is expected to return to more typical levels even as long-term adaptations -- and new expenses -- continue for the foreseeable future.

A TOOL

This book is a tool, and like all tools it can be misused. It is an excellent tool for the renovation and repair professional. It is not a substitute for experience, skill, and knowledge.

Prices in this book are based on research of actual jobs and successful estimates. They represent an average of the typical conditions. Estimators should compare the conditions described in this book with actual conditions on site and adjust the price accordingly.

UNIQUE TO RENOVATION AND REPAIR WORK

This book is compiled specifically for the unique problems and conditions found in renovation and repair work. It is not a new construction cost book.

Renovation and repair work involve completely different circumstances than those found in new construction.

For example, the renovation or repair professional must work around existing conditions including home contents, access problems, out-of-plumb or out-of-square buildings, outdated materials, existing conditions that violate current building codes.

New-construction professionals have the luxury of placing items in a logical order, but renovation, remodel, or repair professionals must deal with conditions as they find them.

This means that joists have to be replaced in an existing floor system, paint has to be applied in a room where stain-grade base and carpeting are already installed, structures may have to be braced, contents have to be moved or worked around and materials and installation techniques must be matched.

DETERMINING COSTS

All costs in this book are based on typical conditions and typical problems found when remodeling or repairing a structure.

This means a door takes 10 to 15 minutes longer to install than it would in the ideal circumstances found in new construction.

Stairs are more difficult to install around pre-existing walls, wall framing takes longer when walls are typically splicing into existing work, and so on.

Some prices in this book will very closely match prices used in new construction. Other prices will reflect the complex conditions found in renovation and repair and will be dramatically different.

For example, using this book's stair building prices to estimate stair work in a series of 150 tract homes will result in an estimate that is far too high.

THE ART OF ESTIMATING

Estimating is part art, part science. Estimators must consider many factors, including access, crew productivity, special techniques, special abilities, temperament of the owner, and how busy the company is.

A contractor who is desperate for work will estimate much lower than a contractor who is swamped with work.

All of these factors — and many other similar ones — cannot be included in this or any other price book. They are part of the art of estimating.

The science of estimating, which includes prices, typical techniques, and materials, is included in this book.

This book is designed to make the science of estimating easier, which allows you to spend much more time focusing on the art of estimating, where your skill is crucial to the success of your company.

GENERAL VS. SPECIFIC

It is important to note that the more specific the estimator is, the more accurate the final estimate will be.

For example, when an estimator calculates all electrical costs for a typical home using a square foot cost, it may not be as accurate as if the estimator priced each fixture, outlet, and appliance hook-up.

Since the square foot price is based on a typical installation, it will not be exact for a home that is atypical in any way — for example, one with special outdoor lighting or with an expensive crystal fixture in the entry.

The more specific the item, the more exact the prices. The more general an item, the more assumptions must be made.

To help ensure the accuracy of your estimates, we describe any assumptions made when determining general items.

For example, the Rough Carpentry chapter contains a square foot price for estimating 2" by 4" wall framing. To help you make sure that this price will work for you, we describe our assumptions: the stud centers, the number of openings, headers, corners, plates and so forth, that would typically be found in a wall.

rounding

This book rounds hourly wage rates and the material, labor, and equipment components of a unit price.

These prices are rounded to "three significant digits." This means that prices under three digits (including two to the right of the decimal) are not rounded. Prices four digits and larger are rounded to the third digit from the left.

For example:

.23 is not rounded
2.33 is not rounded
23.33 is rounded to 23.30
233.33 is rounded to 233.00
2,333.33 is rounded to 2,330.00
23,333.33 is rounded to 23,300.00

In most cases, the square foot price will apply, but you will always want to carefully consider items that are more general, and if needed, adjust them to fit the conditions.

In the case above, the estimator may want to use the square foot price for average fixtures, then add an allowance for the crystal fixture and the outdoor lighting.

TIME AND MATERIAL CHARTS

Almost all chapters include time and material charts at the end. These time and material charts are designed to show you the materials used, waste, labor rates, labor burden costs, and labor productivity.

When materials with a range of sizes appear, only the small and large size are usually listed.

When materials with a range of qualities appear, only the low and high prices are usually listed.

These charts are designed to give you accurate detail on the exact prices used. When prices change, this book does not become obsolete. Compare current prices with those used and factor accordingly.

MATERIAL COSTS

National average material costs are compiled from surveys of suppliers throughout the country.

Costs for some materials, such as clay tile, building stone and hardwood, will vary a great deal from region to region.

For example, clay tile plants are located near naturally occurring clay sources. Because clay tiles are heavy, the further the tiles have to be shipped, the more expensive the tiles will be. The user of this book must be aware of local price variations.

Materials commonly found in every city are priced based on local delivery. In most cases this will be delivery no greater than 20 miles away from a local source. However, many rural areas have lumber yards that will deliver to a wider area at no additional charge.

Materials that are not commonly available locally, like hand-carved moldings or historical wallpaper, include shipping costs anywhere in North America. Estimators in Hawaii, Alaska and remote areas of Canada should add for additional shipping costs when applicable.

Material waste is often indicated with the items, but it's always a good idea to check the time and material charts for the exact waste calculated for all the components of an item.

Waste indicates material that is discarded during installation. It does not include waste that occurs when materials are taken to storage and ruined, run over at the job site, spilled, improperly cut, or damaged due to mishandling.

These types of occurrences are kept to a minimum by every good contractor, but will still occur on any job site.

Another common waste issue in renovation and repair is when a contractor must buy a minimum quantity for a small repair. For example, to replace a six-inch section of base, it is necessary to buy a piece of base that is eight-feet long or longer. In these cases, use the minimum price.

Material prices may not be listed with the time and material charts in some chapters. In these chapters, little new information would be provided by the materials chart so the space is saved for other information.

For example, a materials chart in the Appliance chapter will not provide an estimator with any new information.

The materials component of the unit price for an oven as listed in the main body of the chapter will tell the estimator how much the oven and connections cost.

Relisting these appliances in a materials chart wastes valuable space.

LABOR COSTS

Labor costs are national average rates that usually are consistent with union labor wages.

See the time and material charts for specific benefit costs and labor rates.

Crew labor rates are an average hourly rate for each member of the crew. For example, a masonry crew might consist of a mason, a mason's helper, and a hod carrier.

The hourly rate for this crew is the average cost of all three. In other words, the hourly rate is for 20 minutes work by the mason, 20 minutes work by the mason's helper, and 20 minutes work by the hod carrier.

Separation of labor in renovation and insurance repair work is much more difficult than is separation of labor on large commercial construction projects.

On a typical repair or renovation job a carpenter may participate in demolition, frame walls, set doors, set toilets, install electrical outlets and fixtures, and do a little painting.

In the jobs analyzed for this cost book, well over 40 percent of the demolition work was done by skilled workers. This is because demolition is often selective, requiring a skilled worker to ensure that additional damage does not occur.

Many renovation and repair companies are relatively small, so skilled workers participate in all phases of construction.

These realities are reflected in the labor costs used in this book. This means that a demolition laborer's hourly rate may seem higher than is normal for an unskilled worker.

The time and material charts show all items that are built into each labor rate.

Some contractors may not provide health insurance or retirement plans to some or all of their workers. Estimators can "back-out" these expenses from the labor costs.

It is critical that estimators examine the Workers' Compensation costs calculated in the wage rates. Some states have Workers' Compensation rates that are double, triple, or even quadruple the national average rates used in this book.

Workers' Compensation rates should be adjusted to match local conditions.

Labor productivity is based on observation of work performed in renovation and repair conditions.

These conditions differ from new construction in many ways, but a few of the most common are:

① difficulty matching existing work, ② access problems, ③ materials that must be more carefully shaped and attached than is typical in new construction, ④ out-of-plumb or out-of-square structures, ⑤ reinforcing, ⑥ more trips and effort are required to find materials, ⑦ much more travel time is required because most jobs will have a relatively small amount of work in some trades, ⑧ more vehicles are required by the renovation or repair contractor because many tradespeople are often traveling between jobs, compared to new construction where crews may spend weeks or months on one job, and because crews tend to be smaller and each crew may need a vehicle, ⑨ more unexpected problems, ⑩ more restrictions in established neighborhoods.

Labor productivity is based on a clean job site where tools are put away and secured at the end of each day.

Depending on the trade, 20 to 30 minutes per eight hours is allowed for clean-up and putting away tools. Normally, skilled workers spend half as much time cleaning up as do unskilled workers.

As is typical in new construction, labor includes unpacking materials, in some cases unloading materials from a truck on site, some travel to pick up minor materials (e.g. a forgotten tube of caulk, or a forgotten tool), typical breaks, lay-out, planning, discussion, coordination, mobilization (many companies meet at a central location each morning to receive instructions), recording hours (including specific information needed for job costing), occasional correction of mistakes in installation, and so forth.

Supervision is not included in these costs but should not generally be required. This is because each crew includes a skilled tradesperson who

normally would not require supervision beyond the normal dispatch and mobilization discussed previously.

EQUIPMENT COSTS

Equipment costs are included only when equipment will be used that is not typically a part of the tools used by the majority of renovation or repair contractors.

For example, each carpenter should have a worm-drive saw, miter box, compressor, nail guns, and so forth. These types of tools are not included in the equipment costs.

However, equipment like cranes, backhoes, concrete saws, and jack hammers are not assumed to be part of the equipment and tools owned by a typical renovation or repair contractor. When these are needed, equipment rates are included in the unit price.

Equipment costs include the typical cost to rent the equipment from a local equipment rental shop. When applicable, they also include fuel or blade costs.

Check each item to determine if it includes delivery to the job site or operator labor. Also be careful to note minimum costs for work where rented equipment is needed.

MARKUP

Prices in this book do not include markup. Insurance repair markup is almost always 20 percent: 10 percent for overhead and 10 percent for profit.

In renovation work on historical structures, markup may be as high as 30 percent, although markup over 20 percent may be "hidden" inside the unit cost. Typical remodeling work markup varies from 15 percent to 25 percent. The most common markup for all types of work is 20 percent.

THE COST LINES

The cost tables in each section of this manual consist of individual tasks or items followed by a description.

Beneath the description is a list of the items to be replaced or removed. For instance, under Appliances on page 17, you'll see Electric range, followed by a list of different ranges. Looking across, you'll see five columns of numbers and symbols. Let me explain how to read the numbers and symbols in those columns.

First let's look at the column headed Craft@Hrs. The Craft@Hrs column shows the recommended crew and manhours per unit for installation. For example, 2A in the Craft@Hrs column means that we recommend a crew of one appliance installer. The crew composition, with the cost per hour, is listed on page 12.

The manhours (following the @ symbol) is our estimate of the crew time required for installation (or demolition) of each unit. Manhours are listed in hundredths of an hour rather than minutes because it's easier to add, subtract, multiply and divide hundredths of a unit. For example, if the Craft@Hrs column shows 2A@.250, the Labor Cost column will show \$15.55. That's the labor cost per unit for a crew of one appliance installer at \$62.20 per hour multiplied by .250 manhours, rounded to the nearest penny. The unit is listed right after the Craft@Hrs, and may be the cost per square foot (sf), linear foot (lf), each (ea), or another unit of measurement.

The crew costs include the basic wage, taxable fringe benefits (vacation pay), Workers' Compensation insurance, liability insurance, taxes (state and federal unemployment, Social Security and Medicare), and typical nontaxable fringe benefits such as medical insurance and retirement. A breakdown of these expenses is included as a percentage in the footnote beneath the Labor table at the end of each section.

If your hourly crew cost is much lower or much higher, you can adjust your totals. For example, if your hourly labor cost is 25 percent less, reduce the labor figures in the cost tables by 25 percent to find your local cost.

The Material column shows your material cost for the item described under the heading.

The Total column is the sum of the Material and Labor cost columns.

CHARTS

Material charts show the material description, the material cost priced per typical unit purchased, the gross coverage, the typical waste, the net coverage after waste has been subtracted, and the resulting materials price including waste and often converted to a different unit of measure.

Equipment charts show the cost to rent equipment, the amount of work that can be done with the equipment per a period of time, and the resulting unit price.

Labor charts show the base wage, then add all additional costs that are based on wage. More information is always listed below this chart. It's important to note the "True" wage before adding labor related expenses. The true wage is the wage rate plus an allowance for vacation time. Since all the other costs must be paid even when an employee is on vacation, it is important that they become a component in the cost calculations when estimating work.

Labor productivity charts show the description of the work, the laborer or crew who will do the work, the average cost per man hour, the productivity and the resulting cost per unit.

REGIONAL DIFFERENCES

Construction techniques vary from region to region. Different cli-

mates and different local customs provide a variety of unique regional methods.

For example, in southern Florida it is common to build the first floor of a home from concrete block capped with a grade beam. This method won't be found in Colorado.

Similarly, coral stone walls won't be commonly found in Denver, although they are widely used in Miami.

Slate roofs are common on historical homes and newer custom homes in Philadelphia but are virtually nonexistent in Rapid City.

Homes in the south often include screened porches which aren't nearly so common in the west.

A Georgia home is much more likely to include a series of architecturally-correct columns with Corinthian capitals than is a home in Minnesota.

A Hawaii home may be built entirely from treated wood, when an Arizona home only uses treated lumber when it contacts dirt or concrete.

Many regional materials and techniques are priced in this book. Keep in mind that you should not use these prices if the item is not common to your area.

NATIONAL ESTIMATOR '21

The software download in the back of this book has all the information that appears in the printed book, but with one advantage. The National Estimator program makes it easy to copy and paste these costs into an estimate, or bid, and then add whatever markup you select. Quarterly price updates on the Web are free and automatic all during 2021. You'll be

prompted when it's time to collect the next update. A connection to the Web is required.

To access the software download, follow the instructions printed on the certificate in the back of the book. The software will run on PCs using Windows XP, Vista, 7, 8, or 10 operating systems.

When you've installed the National Estimator program, click Help on the menu bar to see a list of topics that will get you up and running. Or, go online to www.craftsman-book.com, click on "Support," then "Tutorials" to view an interactive video for National Estimator.

If you have any problems using National Estimator, we'll be glad to help. Free telephone assistance is available from 8 a.m. until 5 p.m. Pacific time, Monday through Friday (except holidays). Call 760-438-7828.

WE WANT TO HEAR FROM YOU

If you have questions or concerns about this cost book, let us hear from you. Send letters to:

Craftsman Book Company
NRI Editor
6058 Corte del Cedro
Carlsbad, CA 92011

abbreviations

ABSAcrylonitrile butadiene styrene	lflineal foot	SBSstyrene butyl styrene
acalternating current	lilineal inch	sfsquare foot
bfboard foot	mone thousand	shsheet
BtuBritish thermal units	mbf1,000 board feet	sisquare inch
CECCalifornia Earthquake Code	mBtu1,000 British thermal units	sq100 square feet
.....(also see page 56)	mhman hour	ststep
cfcubic foot	mimile	sysquare yard
cfmcubic foot per minute	mlf1,000 linear feet	t&gtongue-&-groove edge
cicubic inch	mmmillimeter(s)	TVtelevision
cycubic yard	momonth	UBCUniform Building Code
eaeach	mphmiles per hour	ULUnderwriters' Laboratory
FUTAFederal Unemployment	msf1,000 square feet	vlfvertical linear foot
.....Compensation Act tax	no.number	wkweek
galgallon	ocon center	w/with
GFCIground fault circuit interrupter	ozounce	xby or times
gphgallon(s) per hour	prpair	
gpmgallon(s) per minute	psipounds per square inch	SYMBOLS
hphorsepower	PVCpolyvinyl chloride	/ per
hr(s)hour(s)	qtquant	- through or to
IMCintermediate metal conduit	R/Lrandom length(s)	@ at
kdkiln dried	R/W/Lrandom widths and lengths	% percent
<b(kv)< b="">.....kilovolt(s)</b(kv)<>	RSCrigid steel conduit	\$ U.S. dollars
kva1,000 volt amps	S1S2Esurfaced 1 side, 2 edges	' feet
kwkilowatt(s)	S2Ssurfaced 2 sides	" inches
lb(s)pound(s)	S4Ssurfaced 4 sides	# pound or number

acknowledgements

The editor wishes to gratefully acknowledge the contribution of the following: 18th Century Hardware Co., Inc. - A-Ball Plumbing Supply - A&Y Lumber - American Building Restoration Chemicals, Inc. - American Custom Millwork, Inc. - American Society for Testing and Materials (ASTM) - Anderson Windows - Anthony Lombardo Architectural Paneling Inc. - Anthony Wood Products Incorporated - The Antique Hardware Store - Architectural Components, Inc. - Architectural Woodwork Institute - The Balmer Architectural Art Studios - Bathroom Hardware, Inc. - Bathroom Machineries - Bendix Mouldings, Inc. - Brass Reproductions - Brick Institute of America - C & H Roofing, Inc. - C. G. Girolami & Sons - Caradco - Cataumet Sawmills - CertainTeed - Chadsworth Incorporated - Chelsea Decorative Metal Company - Classic Accents, Inc. - Classic Ceilings - CMW, Inc. - Conant Custom Brass - Conklin Metal Industries - Craftsman Lumber Company - Crown City Hardware Co. - Cumberland General Stores - Cumberland Woodcraft Co. Inc. - Designs in Tile - Dimension Hardwood - Donnell's Clapboard Mill - Driwood Moulding - Eisenhart Wallcoverings - Empire Wood Works - Raymond Enkeboll Designs - James Facenelli, CGR #28 - Focal Point Architectural Products - Four Seasons Sun Rooms - Futurbilt - Garland - Gates Moore - General Electric Company - George Taylor Specialties Co. - Goodwin Heart Pine Company - Gougeon Brothers, Inc. - Grand Era, Inc. - Granville Manufacturing Company - Groff & Hearne Lumber - Hampton Decor - Harris-Tarkett, Inc. - Heatway - Heritage Vinyl Products - Michael Higuera - Italian Tile Center - J. G. Braun Company - Jeffries Wood Works, Inc. - Jennifer's Glass Works - JGR Enterprises - Johnson Paint Company, Inc. - Joseph Biunno Ltd - Kenmore Industries - King's Chandelier Company - Kraftmaid Cabinetry, Inc. - David Lawrence, illustrator - Lasting Impression Doors - Lehman's - Linoleum City, Inc. - Ludowici-Celadon, Inc. - MCA, Inc. - Millwork Specialties - The Millworks, Inc. - Mountain Lumber Co. - National Oak Flooring Manufacturers Association (NOFMA) - National Wood Flooring Association - Northwest Energy, Inc. - Oak Flooring Institute - The Old Fashioned Milk Paint Company, Inc. - Ole Fashion Things - Omega Too - Pagliacco Turning & Milling - Pella Corporation - Permaglaze - Piedmont Home Products, Inc. - Piedmont Mantel & Millwork Ltd - Pinecrest - Radiantec - The Readybuilt Products Company - Rejuvenation Lamp & Fixture, Co. - Runtal Radiators - The Saltbox - Salvage One Architectural Artifacts - Silverton Victorian Millworks - Stairways Inc. - Steptoe and Wife Antiques Ltd - Stromberg's Architectural Stone - The Structural Slate Co. - Sunbilt - Supradur Manufacturing Corporation - Taylor Door - Brian Thaut - Touchstone Woodworks - Turncraft - USG Company - Vande Hey's Roofing Tile Co., Inc. - Velux-America Inc. - Vixen Hill Manufacturing Co. - W. F. Norman Corporation - Watercolors, Inc. - WELco - Western Wood Products Association - Williamsburg Blacksmiths - Windy Hill Forge - Wolverine Technologies - The Wood Factory - Worthington Group Ltd

area modification factors

Construction costs are higher in some cities than in other cities. Use the factors on this and the following page to adapt the costs listed in this book to your job site. Increase or decrease your estimated total project cost by the percentage listed for the appropriate city in this table to find your estimated building cost.

These factors were compiled by comparing the actual construction cost of residential, institutional and commercial buildings in communities throughout the United States. Because these factors are based on completed project costs, they consider all construction cost variables, including labor, equipment and material cost, labor productivity, climate, job conditions and markup.

Use the factor for the nearest or most comparable city. If the city you need is not listed in the table, use the factor for the appropriate state. Note that these location factors are composites of many costs and will not necessarily be accurate when estimating the cost of any particular part of a building. But when used to modify all estimated costs on a job, they should improve the accuracy of your estimates.

ALABAMA-4%	Pine Bluff-11%	Durango-1%	Pensacola-8%	ILLINOIS 4%
Alabama-4%	Russellville-4%	Fort Morgan-2%	Saint Augustine.....-2%	Arlington Heights 14%
Anniston-6%	West Memphis-2%	Glenwood Springs.....4%	Saint Cloud-2%	Aurora 14%
Auburn-4%		Grand Junction0%	St Petersburg-6%	Belleville 0%
Bellamy 5%	CALIFORNIA 9%	Greeley 5%	Tallahassee-6%	Bloomington-1%
Birmingham..... 2%	Alhambra 8%	Longmont 2%	Tampa-1%	Carbondale-4%
Dothan-7%	Bakersfield..... 2%	Pagosa Springs-4%	West Palm Beach-2%	Carol Stream 14%
Evergreen-10%	El Centro 0%	Pueblo 0%		Centralia-3%
Gadsden-9%	Eureka 7%	Salida-6%	GEORGIA-4%	Champaign-2%
Huntsville-1%	Fresno-2%		Albany-6%	Chicago 15%
Jasper-8%	Herlong 9%	CONNECTICUT 8%	Athens-5%	Decatur-7%
Mobile-2%	Inglewood 9%	Bridgeport 6%	Atlanta 12%	Galesburg-4%
Montgomery-2%	Irvine 13%	Bristol 12%	Augusta-2%	Granite City 3%
Scottsboro-4%	Lompoc 3%	Fairfield 9%	Buford-2%	Green River 5%
Selma-5%	Long Beach 9%	Hartford 11%	Calhoun-9%	Joliet 13%
Sheffield 0%	Los Angeles 8%	New Haven 7%	Columbus-3%	Kankakee-3%
Tuscaloosa-4%	Marysville 9%	Norwich 3%	Dublin/Fort Valley-8%	Lawrenceville-6%
	Modesto 1%	Stamford 12%	Hinesville-6%	Oak Park 18%
ALASKA 23%	Mojave 5%	Waterbury 6%	Kings Bay-10%	Peoria 6%
Anchorage 26%	Novato 18%	West Hartford..... 5%	Macon-4%	Peru 2%
Fairbanks 27%	Oakland 24%		Marietta 4%	Quincy 16%
Juneau 19%	Orange 12%	DELAWARE 2%	Savannah-4%	Rockford 3%
Ketchikan 18%	Oxnard 2%	Dover-4%	Statesboro-11%	Springfield 0%
King Salmon 23%	Pasadena 9%	Newark 6%	Valdosta-1%	Urbana-4%
	Rancho Cordova 4%	Wilmington..... 4%		
ARIZONA-4%	Redding-3%		HAWAII 20%	INDIANA-3%
Chambers-8%	Richmond 17%	DISTRICT OF	Aliamanu 22%	Aurora-5%
Douglas-8%	Riverside 4%	COLUMBIA	Ewa 20%	Bloomington-2%
Flagstaff-7%	Sacramento 3%	Washington 12%	Halawa Heights 20%	Columbus-4%
Kingman-5%	Salinas 1%		Hilo 20%	Elkhart-4%
Mesa 3%	San Bernardino 2%	FLORIDA-5%	Honolulu 22%	Evansville 4%
Phoenix 3%	San Diego 8%	Altamonte Springs.....-3%	Kailua 22%	Fort Wayne-1%
Prescott-6%	San Francisco 27%	Bradenton-6%	Lualualei 20%	Gary 8%
Show Low-7%	San Jose 17%	Brooksville-7%	Mililani Town 20%	Indianapolis..... 4%
Tucson-5%	San Mateo 21%	Daytona Beach-9%	Pearl City 20%	Jasper-8%
Yuma 2%	Santa Barbara 7%	Fort Lauderdale..... 2%	Wahiawa 20%	Jeffersonville-5%
	Santa Rosa 16%	Fort Myers-6%	Waianae 20%	Kokomo-8%
ARKANSAS-7%	Stockton 4%	Fort Pierce-10%	Wailuku (Maui)..... 20%	Lafayette-5%
Batesville-9%	Sunnyvale 20%	Gainesville-9%		Muncie-8%
Camden-2%	Van Nuys 8%	Jacksonville-2%	IDAHO-9%	South Bend-2%
Fayetteville-4%	Whittier 8%	Lakeland-8%	Boise-5%	Terre Haute-3%
Fort Smith-7%		Melbourne-8%	Coeur d'Alene.....-10%	
Harrison-12%	COLORADO 1%	Miami 1%	Idaho Falls-9%	
Hope-8%	Aurora 7%	Naples-2%	Lewiston-11%	IOWA-3%
Hot Springs-13%	Boulder 4%	Ocala-12%	Meridian-9%	Burlington 1%
Jonesboro-9%	Colorado Springs.....0%	Orlando 1%	Pocatello-10%	Carroll-11%
Little Rock-3%	Denver 8%	Panama City-11%	Sun Valley-8%	Cedar Falls-4%

Cedar Rapids.....2%	MAINE-5%	Mankato.....-4%	North Platte.....-6%	Ithaca.....-5%
Cherokee.....1%	Auburn.....-4%	Minneapolis.....13%	Omaha.....0%	Jamaica.....14%
Council Bluffs.....-1%	Augusta.....-5%	Rochester.....-1%	Valentine.....-15%	Jamestown.....-7%
Creston.....1%	Bangor.....-6%	St Cloud.....2%	NEVADA1%	Kingston.....-4%
Davenport.....1%	Bath.....-6%	St Paul.....12%	Carson City.....-4%	Long Island.....30%
Decorah.....-8%	Brunswick.....-1%	Thief River Falls.....-2%	Elko.....9%	Montauk.....7%
Des Moines.....5%	Camden.....-10%	Willmar.....-6%	Ely.....-3%	New York (Manhattan) ...31%
Dubuque.....-4%	Cutler.....-7%	MISSISSIPPI-6%	Fallon.....0%	New York City.....31%
Fort Dodge.....-3%	Dexter.....-4%	Clarksdale.....-9%	Las Vegas.....3%	Newcomb.....0%
Mason City.....-3%	Northern Area.....-8%	Columbus.....0%	Reno.....-1%	Niagara Falls.....-6%
Ottumwa.....-6%	Portland.....2%	Greenville.....-14%	NEW HAMPSHIRE-1%	Plattsburgh.....-1%
Sheldon.....-7%	MARYLAND2%	Greenwood.....-10%	Charlestown.....-5%	Poughkeepsie.....1%
Shenandoah.....-14%	Annapolis.....8%	Gulfport.....-6%	Concord.....-3%	Queens.....17%
Sioux City.....5%	Baltimore.....7%	Jackson.....-3%	Dover.....1%	Rochester.....2%
Spencer.....-7%	Bethesda.....13%	Laurel.....-7%	Lebanon.....-3%	Rockaway.....10%
Waterloo.....-3%	Church Hill.....-4%	McComb.....-11%	Littleton.....-6%	Rome.....-4%
KANSAS0%	Cumberland.....-8%	Meridian.....3%	Manchester.....2%	Staten Island.....8%
Colby.....-8%	Elkton.....-5%	Tupelo.....-7%	New Boston.....3%	Stewart.....-5%
Concordia.....-12%	Frederick.....7%	MISSOURI-3%	NEW JERSEY9%	Syracuse.....2%
Dodge City.....-4%	Laurel.....8%	Cape Girardeau.....-5%	Atlantic City.....4%	Tonawanda.....-1%
Emporia.....8%	Salisbury.....-6%	Caruthersville.....-7%	Brick.....2%	Utica.....-6%
Fort Scott.....-6%	MASSACHUSETTS ...12%	Chillicothe.....-4%	Dover.....9%	Watertown.....-1%
Hays.....-13%	Ayer.....6%	Columbia.....-4%	Edison.....13%	West Point.....6%
Hutchinson.....-6%	Bedford.....15%	East Lynne.....4%	Hackensack.....10%	White Plains.....14%
Independence.....29%	Boston.....37%	Farmington.....-8%	Monmouth.....12%	NORTH CAROLINA-4%
Kansas City.....5%	Brockton.....20%	Hannibal.....-2%	Newark.....11%	Asheville.....-7%
Liberal.....14%	Cape Cod.....4%	Independence.....5%	Passaic.....12%	Charlotte.....7%
Salina.....-7%	Chicopee.....7%	Jefferson City.....-5%	Paterson.....7%	Durham.....0%
Topeka.....-1%	Dedham.....18%	Joplin.....-6%	Princeton.....10%	Elizabeth City.....-8%
Wichita.....-4%	Fitchburg.....11%	Kansas City.....6%	Summit.....16%	Fayetteville.....-6%
KENTUCKY-4%	Hingham.....19%	Kirksville.....-15%	Trenton.....7%	Goldsboro.....0%
Ashland.....-4%	Lawrence.....14%	Knob Noster.....3%	NEW MEXICO-8%	Greensboro.....-3%
Bowling Green.....-5%	Nantucket.....9%	Lebanon.....-12%	Alamogordo.....-11%	Hickory.....-8%
Campton.....-11%	New Bedford.....6%	Poplar Bluff.....-10%	Albuquerque.....-3%	Kinston.....-9%
Covington.....2%	Northfield.....2%	Saint Charles.....1%	Clovis.....-11%	Raleigh.....3%
Elizabethtown.....-10%	Pittsfield.....1%	Saint Joseph.....-1%	Farmington.....-1%	Rocky Mount.....-7%
Frankfort.....7%	Springfield.....8%	Springfield.....-8%	Fort Sumner.....-2%	Wilmington.....-6%
Hazard.....-10%	MICHIGAN1%	St Louis.....8%	Gallup.....-7%	Winston-Salem.....-5%
Hopkinsville.....-5%	Battle Creek.....-1%	MONTANA-3%	Holman.....-10%	NORTH DAKOTA4%
Lexington.....1%	Detroit.....7%	Billings.....-2%	Las Cruces.....-8%	Bismarck.....3%
London.....-7%	Flint.....-4%	Butte.....-3%	Santa Fe.....-8%	Dickinson.....15%
Louisville.....2%	Grand Rapids.....1%	Fairview.....12%	Socorro.....-14%	Fargo.....0%
Owensboro.....-4%	Grayling.....-7%	Great Falls.....-6%	Truth or Consequences.....-8%	Grand Forks.....-1%
Paducah.....0%	Jackson.....-1%	Havre.....-9%	Tucumcari.....-8%	Jamestown.....-4%
Pikeville.....-8%	Lansing.....0%	Helena.....-2%	NEW YORK6%	Minot.....9%
Somerset.....-11%	Marquette.....3%	Kalispell.....-6%	Albany.....7%	Nekoma.....-10%
White Plains.....-4%	Pontiac.....12%	Miles City.....-7%	Amityville.....9%	Williston.....21%
LOUISIANA2%	Royal Oak.....7%	Missoula.....-6%	Batavia.....1%	OHIO0%
Alexandria.....4%	Saginaw.....-5%	NEBRASKA-8%	Binghamton.....-2%	Akron.....1%
Baton Rouge.....10%	Traverse City.....-2%	Alliance.....-10%	Bronx.....10%	Canton.....-2%
Houma.....4%	MINNESOTA-1%	Columbus.....-7%	Brooklyn.....7%	Chillicothe.....-2%
Lafayette.....8%	Bemidji.....-6%	Grand Island.....-8%	Buffalo.....1%	Cincinnati.....3%
Lake Charles.....13%	Brainerd.....-3%	Hastings.....-9%	Elmira.....-3%	Cleveland.....3%
Mandeville.....-3%	Duluth.....2%	McCook.....-9%	Flushing.....15%	Columbus.....5%
Minden.....-5%	Fergus Falls.....-10%	Norfolk.....-10%	Garden City.....15%	Dayton.....1%
Monroe.....-8%	Magnolia.....-8%	NEVADA1%	Hicksville.....14%	Lima.....-5%
New Orleans.....2%				Marietta.....-5%
Shreveport.....-4%				Marion.....-6%

Newark.....3%	Punxsutawney.....-3%	Austin.....12%	Lynchburg.....-9%	Powell.....-3%
Sandusky.....-3%	Reading.....2%	Bay City.....39%	Norfolk.....-2%	Rawlins.....8%
Steubenville.....1%	Scranton.....1%	Beaumont.....18%	Petersburg.....-3%	Riverton.....-6%
Toledo.....7%	Somerset.....-9%	Brownwood.....-8%	Radford.....-9%	Rock Springs.....1%
Warren.....-5%	Southeastern.....8%	Bryan.....8%	Reston.....7%	Sheridan.....-3%
Youngstown.....-3%	Uniontown.....-6%	Childress.....-14%	Richmond.....2%	Wheatland.....-3%
Zanesville.....-1%	Valley Forge.....11%	Corpus Christi.....18%	Roanoke.....-9%	
OKLAHOMA-5%	Warminster.....11%	Dallas.....6%	Staunton.....-7%	CANADIAN AREA MODIFIERS
Adams.....-10%	Warrendale.....5%	Del Rio.....0%	Tazewell.....-6%	These figures assume an
Ardmore.....-1%	Washington.....8%	El Paso.....-7%	Virginia Beach.....-3%	exchange rate of \$1.00 Canadian
Clinton.....-3%	Wilkes Barre.....-1%	Fort Worth.....2%	Williamsburg.....3%	to \$0.76 U.S.
Durant.....-11%	Williamsport.....-2%	Galveston.....24%	Winchester.....4%	
Enid.....-4%	York.....-1%	Giddings.....6%		ALBERTA AVERAGE... 13%
Lawton.....-8%	RHODE ISLAND 5%	Greenville.....3%	WASHINGTON 0%	Calgary.....14%
McAlester.....-7%	Bristol.....5%	Houston.....26%	Clarkston.....-8%	Edmonton.....14%
Muskogee.....-8%	Coventry.....5%	Huntsville.....26%	Everett.....2%	Fort McMurray.....12%
Norman.....-4%	Cranston.....6%	Longview.....1%	Olympia.....-2%	
Oklahoma City.....-3%	Davisville.....5%	Lubbock.....7%	Pasco.....1%	BRITISH COLUMBIA
Ponca City.....-1%	Narragansett.....5%	Lufkin.....8%	Seattle.....11%	AVERAGE 7%
Poteau.....-7%	Newport.....5%	McAllen.....-6%	Spokane.....-3%	Fraser Valley.....6%
Pryor.....-6%	Providence.....6%	Midland.....10%	Tacoma.....2%	Okanagan.....6%
Shawnee.....-8%	Warwick.....5%	Palestine.....2%	Vancouver.....3%	Vancouver.....9%
Tulsa.....0%		Plano.....7%	Wenatchee.....-6%	
Woodward.....5%	SOUTH CAROLINA-1%	San Angelo.....-6%	Yakima.....-5%	MANITOBA AVERAGE... 0%
OREGON-3%	Aiken.....4%	San Antonio.....8%		North Manitoba.....0%
Adrian.....-12%	Beaufort.....-2%	Texarkana.....-8%	WEST VIRGINIA-5%	Selkirk.....0%
Bend.....-5%	Charleston.....-1%	Tyler.....-7%	Beckley.....-5%	South Manitoba.....0%
Eugene.....-3%	Columbia.....2%	Victoria.....12%	Bluefield.....0%	Winnipeg.....0%
Grants Pass.....-5%	Greenville.....8%	Waco.....-3%	Charleston.....4%	
Klamath Falls.....-8%	Myrtle Beach.....-8%	Wichita Falls.....-9%	Clarksburg.....-7%	NEW BRUNSWICK
Pendleton.....-3%	Rock Hill.....-6%	Woodson.....-3%	Fairmont.....-11%	AVERAGE-13%
Portland.....10%	Spartanburg.....-4%	UTAH-3%	Huntington.....-4%	Moncton.....-13%
Salem.....-2%		Clearfield.....0%	Lewisburg.....-14%	
PENNSYLVANIA-1%	SOUTH DAKOTA-6%	Green River.....-3%	Martinsburg.....-5%	NEWFOUNDLAND/
Allentown.....3%	Aberdeen.....-7%	Ogden.....-9%	Morgantown.....-4%	LABRADOR AVERAGE...-3%
Altoona.....-8%	Mitchell.....-6%	Provo.....-6%	New Martinsville.....-9%	
Beaver Springs.....-5%	Mobridge.....-9%	Salt Lake City.....1%	Parkersburg.....1%	NOVA SCOTIA
Bethlehem.....4%	Pierre.....-10%	VERMONT-5%	Romney.....-7%	AVERAGE-8%
Bradford.....-8%	Rapid City.....-8%	Albany.....-7%	Sugar Grove.....-8%	Amherst.....-8%
Butler.....-2%	Sioux Falls.....-1%	Battleboro.....-4%	Wheeling.....5%	Nova Scotia.....-7%
Chambersburg.....-7%	Watertown.....-4%	Beecher Falls.....-8%	WISCONSIN 0%	Sydney.....-8%
Clearfield.....-3%	TENNESSEE-2%	Bennington.....-6%	Amery.....-1%	ONTARIO AVERAGE..... 7%
DuBois.....-10%	Chattanooga.....2%	Burlington.....4%	Beloit.....5%	London.....7%
East Stroudsburg.....-5%	Clarksville.....1%	Montpelier.....-4%	Clam Lake.....-8%	Thunder Bay.....6%
Erie.....-6%	Cleveland.....-1%	Rutland.....-7%	Eau Claire.....-2%	Toronto.....7%
Genesee.....-4%	Columbia.....-7%	Springfield.....-6%	Green Bay.....3%	
Greensburg.....-4%	Cookeville.....-8%	White River Junction.....-5%	La Crosse.....0%	QUEBEC AVERAGE-1%
Harrisburg.....3%	Jackson.....-2%	VIRGINIA-4%	Ladysmith.....-2%	Montreal.....-1%
Hazleton.....-3%	Kingsport.....-5%	Abingdon.....-9%	Madison.....8%	Quebec City.....-1%
Johnstown.....-9%	Knoxville.....-2%	Alexandria.....10%	Milwaukee.....6%	
Kittanning.....-6%	McKenzie.....-8%	Charlottesville.....-6%	Oshkosh.....4%	SASKATCHEWAN
Lancaster.....-1%	Memphis.....1%	Chesapeake.....-4%	Portage.....0%	AVERAGE 4%
Meadville.....-9%	Nashville.....2%	Culpeper.....-5%	Prairie du Chien.....-7%	La Ronge.....3%
Montrose.....-4%	TEXAS 5%	Farmville.....-12%	Wausau.....-3%	Prince Albert.....2%
New Castle.....-3%	Abilene.....-2%	Fredericksburg.....-5%	WYOMING-1%	Saskatoon.....5%
Philadelphia.....11%	Amarillo.....-2%	Galax.....-10%	Casper.....1%	
Pittsburgh.....6%	Arlington.....1%	Harrisonburg.....-6%	Cheyenne/Laramie.....-2%	
Pottsville.....-8%			Gillette.....3%	

crews

CRAFT CODE	AVG. COST /HR	CREW COMPOSITION	CRAFT CODE	AVG. COST /HR	CREW COMPOSITION
1A	\$54.40	acoustic ceiling installer	1I	\$50.30	insulation installer
2A	\$62.20	appliance installer	2I	\$57.60	cabinet installer
3A	\$74.20	appliance refinisher			laborer
4A	\$64.20	awning installer	3I	\$66.80	flooring installer
5A	\$48.50	awning installer's helper	4I	\$49.60	flooring installer's helper
6A	\$56.40	awning installer	5I	\$58.20	flooring installer
		awning installer's helper			flooring installer's helper
1B	\$39.60	cleaning laborer	6I	\$69.00	paneling installer
2B	\$87.20	post & beam carpenter	7I	\$51.60	paneling installer's helper
3B	\$62.10	post & beam carpenter's helper	2L	\$46.00	cabinet installer's helper
4B	\$74.70	post & beam carpenter	3L	\$42.20	masking & moving laborer
		post & beam carpenter's helper	1M	\$71.90	mason
1C	\$69.20	carpenter	2M	\$66.00	mason's helper
5C	\$51.60	carpenter's helper	3M	\$50.90	hod carrier
6C	\$60.40	carpenter	4M	\$62.90	mason
		carpenter's helper			mason's helper
1D	\$48.10	demolition laborer			hod carrier / laborer
2D	\$56.30	drywall hanger	5M	\$69.00	mason
		drywall hanger's helper			mason's helper
3D	\$64.20	drywall hanger	6M	\$117.00	stone carver
4D	\$48.40	drywall hanger's helper	7M	\$49.30	mobile home repair specialist
5D	\$64.80	drywall taper	10	\$89.70	equipment operator
6D	\$59.10	drywall hanger	20	\$64.50	concrete saw operator
		drywall hanger's helper	4P	\$65.80	plasterer
		drywall taper	5P	\$59.20	plasterer's helper
5E	\$44.80	excavation laborer	6P	\$62.50	plasterer
6E	\$67.30	excavation laborer			plasterer's helper
		equipment operator	7P	\$79.50	plumber
7E	\$74.40	electrician	8P	\$60.30	paneling installer
8E	\$55.40	electrician's helper			paneling installer's helper
9E	\$64.90	electrician	9P	\$60.70	plumber's helper
		electrician's helper	3R	\$67.60	retaining wall installer
1F	\$65.80	concrete form installer	4R	\$80.20	roofer
2F	\$47.80	concrete laborer	5R	\$68.00	roofer's helper
3F	\$56.80	concrete form installer	6R	\$74.10	roofer
		concrete laborer			roofer's helper
4F	\$60.40	carpenter (fence installer)	1S	\$55.10	susp. ceiling installer
		carpenter's helper			susp. ceiling installer's helper
5F	\$67.10	painter	2S	\$62.90	susp. ceiling installer
6F	\$64.80	concrete finisher	3S	\$47.20	susp. ceiling installer's helper
7F	\$53.60	concrete finisher's helper	4S	\$68.10	siding installer
8F	\$59.20	concrete finisher	5S	\$50.90	siding installer's helper
		concrete finisher's helper	6S	\$59.50	siding installer
9F	\$58.00	concrete form installer			siding installer's helper
		concrete laborer	7S	\$61.30	security system installer
		concrete finisher	8S	\$77.80	swimming pool installer
		concrete finisher's helper	9S	\$58.60	water extractor
1G	\$90.80	compaction grouting specialist	1T	\$63.70	tile layer
2G	\$69.30	compaction grouting specialist	7Z	\$46.10	mildew remediation specialist
		concrete laborer	8Z	\$28.60	mildew remediation assistant
1H	\$56.90	hazardous materials laborer	9Z	\$37.40	mildew remediation specialist
2H	\$72.40	HVAC installer			mildew remediation assistant
3H	\$53.50	wallpaper hanger			

Craft@Hrs Unit Material Labor Total

Acoustic Ceilings

Minimum charge.

	Craft@Hrs	Unit	Material	Labor	Total
for acoustic ceiling tile work	1A@1.25	ea	24.40	68.00	92.40

1/2" on strips. 12" x 12" tiles stapled in place. Includes 12" x 12" ceiling tiles, staples, and installation labor. Does not include furring strips. Includes 3% waste.

1/2" ceiling tiles on furring strips					
replace, smooth face	1A@.025	sf	1.49	1.36	2.85
replace, fissured face	1A@.025	sf	1.90	1.36	3.26
replace, textured face	1A@.025	sf	2.22	1.36	3.58
replace, patterned face	1A@.025	sf	2.33	1.36	3.69
remove only	1D@.012	sf	—	.58	.58

1/2" on flat ceiling. 12" x 12" tiles glued in place. Includes 12" x 12" ceiling tiles, glue, and installation labor. Includes 3% waste.

1/2" ceiling tiles on flat ceiling					
replace, smooth face	1A@.029	sf	1.49	1.58	3.07
replace, fissured face	1A@.029	sf	1.90	1.58	3.48
replace, textured face	1A@.029	sf	2.22	1.58	3.80
replace, patterned face	1A@.029	sf	2.33	1.58	3.91
remove only	1D@.016	sf	—	.77	.77

5/8" on strips. 12" x 12" tiles stapled in place. Includes 12" x 12" ceiling tiles, staples, and installation labor. Does not include furring strips. Includes 3% waste.

5/8" ceiling tiles on furring strips					
replace, smooth face	1A@.025	sf	1.90	1.36	3.26
replace, fissured face	1A@.025	sf	2.22	1.36	3.58
replace, textured face	1A@.025	sf	2.46	1.36	3.82
replace, patterned face	1A@.025	sf	2.62	1.36	3.98
remove only	1D@.012	sf	—	.58	.58

5/8" on flat ceiling. 12" x 12" tiles glued in place. Includes 12" x 12" ceiling tiles, glue, and installation labor. Includes 3% waste.

5/8" ceiling tiles on flat ceiling					
replace, smooth face	1A@.029	sf	1.90	1.58	3.48
replace, fissured face	1A@.029	sf	2.22	1.58	3.80
replace, textured face	1A@.029	sf	2.46	1.58	4.04
replace, patterned face	1A@.029	sf	2.62	1.58	4.20
remove only	1D@.016	sf	—	.77	.77

3/4" on strips. 12" x 12" tiles stapled in place. Includes 12" x 12" ceiling tiles, staples, and installation labor. Does not include furring strips. Includes 3% waste.

3/4" ceiling tiles on furring strips					
replace, smooth face	1A@.025	sf	2.22	1.36	3.58
replace, fissured face	1A@.025	sf	2.46	1.36	3.82
replace, textured face	1A@.025	sf	2.56	1.36	3.92
replace, patterned face	1A@.025	sf	2.83	1.36	4.19
remove	1D@.012	sf	—	.58	.58

	Craft@Hrs	Unit	Material	Labor	Total
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3/4" on flat ceiling. 12" x 12" tiles glued in place. Includes 12" x 12" ceiling tiles, glue, and installation labor. Includes 3% waste.

3/4" ceiling tiles on flat ceiling					
replace, smooth face	1A@.029	sf	2.22	1.58	3.80
replace, fissured face	1A@.029	sf	2.46	1.58	4.04
replace, textured face	1A@.029	sf	2.56	1.58	4.14
replace, patterned face	1A@.029	sf	2.83	1.58	4.41
remove	1D@.016	sf	—	.77	.77

Additional costs for acoustical ceiling tile.

add for 3/4" tiles with fire rating	—	sf	.42	—	.42
add for aluminum-coated tiles	—	sf	.61	—	.61

Furring strips. Includes 1" x 2" furring strips, nails, construction adhesive as needed, and installation labor. Furring strips placed as fireblocking is included. Includes 4% waste.

replace 1" x 2" furring strips 12" on center	1A@.007	sf	.36	.38	.74
remove	1D@.009	sf	—	.43	.43

Repair loose ceiling tile.

repair loose acoustic tile	1A@.253	ea	.16	13.80	13.96
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Angled install for ceiling tile.

add 24% for diagonal install
add 31% for chevron install
add 40% for herringbone install

Time & Material Charts (selected items)

Acoustic Ceiling Materials

1/2" thick acoustic tile (per 12" x 12" tile)					
smooth face, (\$1.25 each, 1 sf, 3% waste)	—	sf	1.28	—	1.28
fissured face, (\$1.68 each, 1 sf, 3% waste)	—	sf	1.73	—	1.73
textured face, (\$1.92 each, 1 sf, 3% waste)	—	sf	1.97	—	1.97
patterned face, (\$2.08 each, 1 sf, 3% waste)	—	sf	2.15	—	2.15
5/8" thick acoustic tile (per 12" x 12" tile)					
smooth face, (\$1.68 each, 1 sf, 3% waste)	—	sf	1.73	—	1.73
fissured face, (\$1.92 each, 1 sf, 3% waste)	—	sf	1.97	—	1.97
textured face, (\$2.23 each, 1 sf, 3% waste)	—	sf	2.29	—	2.29
patterned face, (\$2.33 each, 1 sf, 3% waste)	—	sf	2.39	—	2.39
3/4" thick acoustic tile (per 12" x 12" tile)					
smooth face, (\$1.92 each, 1 sf, 3% waste)	—	sf	1.97	—	1.97
fissured face, (\$2.23 each, 1 sf, 3% waste)	—	sf	2.29	—	2.29
textured face, (\$2.30 each, 1 sf, 3% waste)	—	sf	2.36	—	2.36
patterned face, (\$2.53 each, 1 sf, 3% waste)	—	sf	2.60	—	2.60

Index

A

- Abbreviations.....8
Access doors, mobile homes.....219
Acid wash, swimming pool.....419
Acoustic ceiling texture.....101
 compound.....103
 minimum charge.....101
Acoustic ceilings.....13-15
 aluminum-coated tiles.....14
 angled installation.....14
 cleaning.....39
 fire rated.....14
 furring strips.....14
 painting.....279
 repair.....14
 T&M charts.....14-15
 tiles.....13-14
Acoustic tile, cleaning.....39
Acoustical plaster.....308
Adhesives, construction.....379
Adjustable jack.....221
Adobe pavers.....247
Aggregate, exposed.....62
Air conditioning
 central.....212
 recharge refrigerant.....212
 through-wall.....212
 wiring.....107
Air-borne mold.....271
Airless sprayer unit, rental.....210
Alarm system, wiring.....108, 114
Allowance, light fixture.....116
Aluminum
 capitals.....51-52
 column bases.....53
 columns.....49, 50
 pilasters.....49, 50
 roofing, corrugated.....346
 roofing, ribbed.....347
 shingles.....339
 siding.....393
 swimming pool.....418
 wall cap.....254
Aluminum skirting, mobile home.....226
Aluminum window.....431-434
 awning.....432
 casement.....432
 double-hung.....433
 elliptical.....432
 fixed (picture).....434
 grilles and grid.....431
 half-elliptical.....431
 half-round.....431
 quarter-round.....432
 round.....432
 single-hung.....433
 sliding.....433
 storm.....444
American bond.....241
Ames taping tools.....103
Anaglypta
 dado.....425
 frieze.....425
 pelmet.....425
 wall coverings.....425
Analysis, asbestos.....209
Anchor, mobile home.....221
Anchor-beam joint.....365
Anchored tieback.....337
Angle iron, lintel.....257
Antenna, television.....114
Anti-fungal fog.....275
Antimicrobial spray.....274
Antique style door, repair.....81
Antique style plumbing
 bathtub.....331-332
 drain.....330
 faucets.....329
 toilet.....331
 tub supply lines.....330
Appliances.....15-25
 cleaning.....39
 clothes dryer.....23
 dishwasher.....20
 electric oven/range.....17-18
 gas oven/range.....16-17
 microwaves.....20
 mobile home.....219
 range hood.....19
 refinish.....22
 refrigerator/freezer.....21-22
 T&M charts.....24-25
 trash compactor.....24
 washing machine.....22-23
 wiring.....107
Apron molding, window.....157-158
Arch
 brick wall.....242
 keystone.....250
 spandrel, gingerbread.....172
 stone veneer.....250
 stone wall.....249
Architrave
 door.....251-252
 exterior.....156
 interior.....156
 painting.....288
 plaster.....311
 stone.....251-252
 stucco.....312
 window.....252
Area modification factors.....9-11
Asbestos removal.....209-210
Ash
 entry door.....85
 flooring.....202
 interior door, veneer.....78
 plywood paneling.....303
Ashlar stone
 brick bond style.....241
 fireplace face.....191
 fireplace hearth.....191
 veneer.....249
 wall.....248
Asphalt
 driveway.....65
 fill pothole.....66
 graded base.....65
 overlay.....65
 repair.....66
 seal.....66
Asphalt shingles.....339-342
 3-tab.....339-340
 diamond.....340
 hexagonal.....340
 laminated.....340-342
 reseal.....342
 tear out and discard.....342
 tear out and replace.....341-342
ASTM clay roofing tile upgrades.....345
Astragal molding.....159
Attic insulation cellulose.....215-216
Attic stair, disappearing.....405
Auger, rental.....69
Awning window
 aluminum.....432
 vinyl.....435-436
 wood.....439
Awnings.....25-29
 aluminum.....25-27
 canvas.....27
 carport.....25
 cleaning.....39
 door.....26
 downspout.....26
 fascia.....26
 painting.....279
 patio cover.....25-26
 post.....25
 roll up.....27
 roof panel.....26
 T&M charts.....28-29
 vinyl.....27
 window.....26

B

- Backfill, foundation wall.....130
Backhoe, rental.....70
Backhoe/loader, rental.....132
Backing, wall tile.....246

- Ball and dowel trim.....169
Ballast, light.....122
Balustrade
 1/4 turn stair rail.....408
 1/2 turn stair rail.....408
 goose neck.....408
 paint.....295
 pine.....406
 poplar.....406
 red oak.....407
 redwood.....407
 remove & reinstall.....406-407
 sawn.....408
 volute end.....408
Bar doors.....88
Bar sink faucet.....321
Barricade tape.....421
Barricades.....421
Base
 asphalt.....65
 block.....154-155
 cabinets, kitchen.....33-34
 column.....53
 flatwork.....62
 rubber.....201
 shower.....326
 terrazzo.....199
 tile.....199
Base molding
 block.....154
 clamshell.....151
 mask.....229
 pattern.....152
 remove & reinstall.....151-152
 rubber.....201
 shoe molding.....152
 tile.....199
Baseboard heaters.....115
 mobile home, electric.....222
 wiring.....107-108
Basement excavation.....130
Basketweave
 brick bond.....241
 paving.....248
Basketweave fence.....139
Bathroom
 faucet.....320
 heaters, wiring.....107
 light bar.....116
 mask.....229
 rough plumbing.....318
 sink.....321-322
 sink plumbing.....319
 vanity cabinet.....37
Bathroom fans.....112-113
 wiring.....107

with heat lamp.....	112	QuickCalculator.....	450-451	Board-on-board		Bullnose starting step.....	405
with heater.....	113	sloping interior.....	355	fence.....	141	Bungalow siding.....	396
Bathroom hardware.....	29-33	Bed mold.....	161	paneling.....	304	Butcherblock countertop.....	37
cleaning.....	40	Beech flooring.....	202	siding.....	394	Buttress foundation.....	64-65, 74
cup & toothbrush holder.....	30	Belt rail, mobile home.....	223	Bond beam		Bypassing doors.....	77
door clothes hanger.....	30	Bent connecting members.....	363-364	block wall.....	246	jamb & casing.....	78
mirror.....	32	Bent with truss		swimming pool, repair.....	418	paint.....	286
robe hook.....	30	oak.....	363-364	Bonds, brick.....	241		
shelf.....	30	pine.....	362-363	Bookcases			
shower rod.....	31	Beveled glass lite, panel door.....	81	built-in.....	166		
soap dish.....	30	Beveled siding.....	396	painting.....	289		
soap dispenser.....	31	Bibb.....	320	Border, wallpaper.....	424		
T&M charts.....	32-33	Bidets		Bow roof truss, mobile home.....	224		
tissue holder, recessed.....	31	faucet.....	320	Bow window, framing.....	357		
toilet paper dispenser.....	31	finish plumbing.....	324	Bowl-shade light fixtures.....	120		
towel bar.....	31	plumbing.....	319	shades.....	125		
towel ring.....	31	Billiard table style light fixture.....	120	Braces			
wash cloth bar.....	31	Birch		diagonal.....	363-364		
Bathtub, antique style.....	331	flooring.....	202	framing.....	379		
drain.....	330	plywood paneling.....	303	Brackets			
faucet.....	330	veneer plywood.....	175	closet shelving.....	165		
refinished.....	331	Birch veneer doors.....	77-78, 83	gingerbread.....	170		
reproduction.....	332	Bird screen, chimney.....	187	paint.....	291		
shower conversion.....	330	Bitumen roofing.....	351	stair.....	408		
slipper style.....	332	Black steel supply pipe.....	315	Brass supply pipe.....	315		
supply lines.....	330	Block and brick wall.....	233-236, 238	Breaker panel.....	110		
Bathtub/shower doors.....	327	cavity.....	238-239	Breaker, circuit.....	112		
Bathtubs.....	324	Block moldings.....	154	Brick			
antique style.....	331-332	Block walls		arch.....	242		
drain, antique style.....	331, 332	bond beam.....	246	bonds.....	241		
faucet.....	321	colors.....	245	common.....	231		
folding plastic door.....	327	concrete.....	242-243	fire.....	186		
plumbing.....	319, 324	curved.....	241	fireplace face.....	190		
sliding glass door.....	327	cut hole in.....	257	fireplace hearth.....	191		
slipper.....	332	fluted.....	245	painting.....	293		
surround.....	326	glass.....	247	paving.....	247		
surround, cultured marble.....	423	glazed.....	243-244	salvage.....	256		
with shower.....	325	grade beam cap.....	246	used.....	256		
with whirlpool jets.....	325	inserts, polystyrene.....	245	veneer.....	240		
Batt insulation.....	216	insulation.....	245	Brick and block wall.....	233-236		
Batten doors.....	82	interlocking concrete.....	245	cavity.....	238-239		
Batten seam roofing		point.....	293	Brick walls.....	231-232, 237, 239		
copper.....	348	parging.....	246	arch.....	242		
lead.....	348	pilaster.....	245	cavity.....	239		
repair.....	348	reinforcement.....	245	cleaning.....	257		
stainless steel.....	348	retaining.....	245	curved.....	241		
terne.....	348	retaining walls.....	338	cut opening.....	257		
Bay window, framing.....	357	screen.....	244	double wythe.....	232-233		
Beam pocket.....	357	slump.....	243	mortar.....	261		
Beams		split-face.....	244	openings.....	241		
curved.....	359	split-rib.....	244	pressure wash.....	257		
glue laminated.....	359	Blown fiberglass insulation.....	215	quoins.....	250		
hand-hewn.....	362	Board		raked joints.....	242		
header.....	358	finish.....	175	repair.....	256		
micro-laminated.....	360	over plywood siding.....	394	repoint.....	255		
oak.....	361, 364	rigid foam insulation.....	216	single wythe.....	237		
pine.....	360, 363	Board fence.....	140	steam clean.....	257		
Bearing wall		lattice cap.....	140-141	triple wythe.....	237		
beam pocket.....	362	Board up, emergency.....	420	Building permit fees.....	138		
interior, per bf.....	357	Board-and-batten		Built-in oven cabinet.....	35		
interior, per lf.....	353	fence.....	142	Built-in vacuum systems, wiring.....	108		
interior, per sf.....	355-356	paneling.....	304	Built-up roofing.....	349		
		siding.....	394				

C

Cabinets.....	33-39
bathroom vanity.....	37
built-in oven.....	35
cleaning.....	40
countertop.....	36-37
doors.....	35
drawer fronts.....	35
foil face.....	33
full height.....	34-35
grades.....	33
island.....	34
kitchen.....	33
medicine.....	32
mobile home.....	219
oven.....	35
paint.....	286
refinish.....	36
repair.....	36
T&M charts.....	38-39
utility.....	34
vanity.....	37
Cable	
electric-resistance heating.....	115
service entrance.....	110-111
Café doors.....	88
paint.....	285
Calculations	
formulas & conversions.....	449
material quantities.....	450-463
surface areas.....	464-469
California Earthquake Code (CEC).....	357
bracing.....	357
requirements.....	56
California fill.....	375
Canvas awnings.....	27
Cap	
chimney.....	187
grade beam, block wall.....	246
wall.....	254
Capitals	
contemporary.....	50
Corinthian.....	51
Doric.....	51
Empire.....	51
Erechtheum.....	51
painting.....	280
pedestals, repair.....	55
repair.....	52
Roman Ionic.....	52
Scamozzi.....	52

- Temple-of-the-Winds 52
 Tuscan 51
 Carbon monoxide detectors
 replacement 114
 wiring 108
 Carpentry
 finish 151, 220
 rough 353
 sleepers on concrete 204
 windows 446
 Carpet
 cleaning 43
 cove 198
 germicide/mildewcide treatment 429
 glue-down 197
 hang and dry carpet in plant 429
 indoor-outdoor 197
 installation 197
 pad 198
 remove wet carpet and pad 429
 stair installation 197
 tile 198
 water extraction 429
 wool 197
 Carports 25
 painting 279
 Carved wood onlay 174-175
 Carving, stone 256
 Casement window
 aluminum 432
 vinyl 435
 wood 439
 Casing
 clamshell 152-153
 curved pattern 153-154
 door or window 220
 mask 229
 mobile home 220
 moldings 153
 paint 283
 strip 297
 Casing & jamb
 closet door 78
 exterior doors 87
 interior door 79
 Cast stone architrave 251
 Cast-in-place plaster mold 310
 Cast-iron DWV pipe 316
 repack joint 316
 Caulk expansion joint,
 swimming pool 419
 Caution labels 209
 Cavity walls 239
 insulation 239
 CDX plywood sheathing 376
 CEC bracing 357
 CEC rebar
 concrete footings 56
 concrete foundations 57-58
 concrete piers 59-60
 grade beams 60
 single-pour footing 58-59
 Cedar
 board fence 140-141
 board siding 394
 board-and-batten fence 142
 board-on-board fence 141
 closet lining 165
 fence posts 139
 gate 139-143
 molding 151
 picket fence 142-143
 plywood paneling 303
 shingles 343
 veneer plywood 175
 Ceiling
 coffered 168
 cove molding 160
 cove, finish carpentry 220
 fans 122
 finishes, tear-out 273
 Lincrusta coverings 425
 paint 290
 panels, mobile home 227
 plaster medallion 311
 Ceiling and wall panel,
 mobile home 227
 Ceiling tile
 concealed grid 413
 painting 279
 suspended 413
 Ceiling, acoustic
 angled installation 14
 fire-rated tiles 14
 furring strips 14
 T&M charts 14-15
 tiles 13-14
 Ceilings
 coffered 168
 concealed grid 413
 cottage cheese texture 101
 suspended 413
 Cellulose attic insulation 215
 Cement fiber shingle siding 393
 Ceramic tile
 cleaning 45
 flooring 199
 Ceramic veneer panels 250
 Chain, security 95
 Chain-link fence 143-144
 gate 144
 temporary 420
 Chair rail molding 158
 Chandeliers 116-117
 Channel
 metal furring 101-102
 rustic siding 395
 Cherry
 closet jamb & casing 78
 entry door 86
 exterior jamb & casing 87
 flooring 202
 frame-and-panel wall 305
 interior jamb & casing 79
 molding 151
 plywood paneling 303
 Cherry veneer
 bypassing door 77
 door 83
 exterior jamb & casing 87
 folding door 77
 interior door 78
 interior jamb & casing 79
 plywood 175
 Chestnut veneer plywood 175
 Chickhee hut 278
 Chimney
 bird screen 187
 cap 187
 concrete footings 61
 cricket 378
 pipe 189
 pot 188
 reline 187
 saw-kerf flashing 351
 Chimney range hood 19
 Circline fixtures 122
 Circuit breakers 112
 Circular stairs 404
 Clamshell molding
 base 151
 casing 152-153
 Clapboard siding 396
 Clean-out, fireplace 189
 Clean-up, final construction 45
 Cleaning 39-48
 final construction 45
 labor 46
 masonry 257
 rule of thumb 274
 T&M charts 46-48
 Closers, door 95
 Closet doors
 bypassing 77
 folding 77
 jamb & casing 78
 Closets
 cedar lining 165
 organizer system 165
 rod 165
 shelves 165
 Clothes dryers 23
 cleaning 39
 wiring 108
 Clothes hanger 30
 Clothes line, mobile home 219
 Clothes washing machines 22-23
 cleaning 39
 plumbing 319
 wiring 107
 Coating, foundation 64
 Coffered ceiling 168
 painting 290
 Cold-air grille 213
 Columns
 bases 52-55
 cleaning 40
 fluted 49
 lally 359
 painting 280
 pedestal 53
 plaster 310
 repair 50
 round 49
 square 50
 stucco 312
 T&M charts 54-55
 tapered 49
 Combination storm door,
 mobile home 220
 Common bond 241
 Compaction grouting 65
 Compactor, rental 135
 Complete house
 electrical 105
 plumbing 317-318
 wiring 105
 Composite
 capitals 51, 52
 column bases 53
 columns 49-50
 pilasters 49-50
 Compound
 acoustic ceiling texture 103
 cottage cheese texture 103
 joint 102-103
 texture 103
 Computer network, wiring 109
 Concealed grid, ceiling tile 413
 Concrete 56-74
 chimney footing 61
 cleaning 40
 curb & gutter 63
 driveway 61
 dye 73
 epoxy, repair 56
 equipment pad 61
 equipment rental 69-70
 exposed aggregate 62
 flatwork 61-62
 footings 56-57
 foundations 57-59
 grade beams 60
 lintel 257
 painting 280
 pargeting 63
 pavers 247
 piers 59, 359
 pump truck 64
 rebar 62
 retaining walls 337
 roofing tile 345
 sawing 64, 74
 sidewalk 62
 slab base 62
 stamping 63, 73
 steps 63
 swimming pool 418
 T&M charts 66-74

vapor barrier.....	62	Corian.....	36	Crystal chandeliers.....	119	Dolly Varden siding.....	396
wall coping stones.....	254	cultured granite.....	36	Crystal wall fixtures.....	118	Dome skylight.....	442
wire mesh.....	62	cultured marble.....	36	Cultured marble		Door awnings.....	26
Concrete block		cultured onyx.....	36	bathtub surround.....	423	Door bells	
bond beam.....	246	Formica.....	36	countertop.....	36	replacement.....	112
colors.....	245	granite.....	37	window sill.....	423	wiring.....	107, 109
high strength.....	245	maple.....	37	Cultured stone veneer.....	250	Door chimes	
interlocking.....	245	oak.....	37	Cup & toothbrush holder.....	30	replacement.....	112
painting.....	293	plastic laminate.....	36	Curb & gutter.....	63, 73	wiring.....	107, 109
walls.....	242-243	repair.....	37	Curved post & beam framing.....	362	Door hardware.....	94-99, 220
Concrete core drill, rental.....	70	solid surface.....	36	Custom milling		closers.....	95
Concrete pump truck, rental.....	69	solid wood.....	37	doors.....	81	deadbolts.....	94
Concrete saw, rental.....	69	stainless steel.....	37	moldings.....	164	demolition.....	98
Concrete wall & footing,		tile.....	37	Cut stone		garage doors.....	97
QuickCalculator.....	452-453	Cove		retaining wall.....	337	hinges.....	95-96
Conductor, downspout.....	398, 401	carpet.....	198	sill.....	254	hinges, storm door.....	96
Conduit.....	109, 111	molding.....	159	stool.....	254	kick plate.....	96
Cones, traffic.....	421	vinyl.....	201	trim.....	253	knocker.....	96
Connection fees.....	138	CPVC supply pipe.....	316	Cypress		labor costs.....	97
Construction adhesive.....	379	Crack repair, concrete.....	56	custom-milled doors.....	80	labor productivity.....	98
Construction clean-up.....	45	Craft codes.....	12	entry doors.....	86	letter plate.....	96
Consultant, environmental.....	272	Crane, rental.....	70	molding.....	151	locks.....	94-96
Contacts, security system.....	390	Crawl space excavation.....	130			push plate.....	96
Containment.....	272	Crews.....	12			security chain.....	95
mold.....	271	acoustic ceilings.....	15			stops.....	96
walls, asbestos.....	209	appliances.....	24			sweep.....	99
Contemporary capital.....	50	asbestos.....	210			T&M charts.....	97-99
Control panel, security system.....	390	awnings.....	28-29			thumb latches.....	95
Controls, garage doors.....	90	bathroom hardware.....	32			weatherstripping.....	97
Convection fireplace.....	185	cabinets.....	38			Doors.....	219
Cook tops.....	15-17	carports.....	28-29			access.....	219
cleaning.....	39	columns.....	55			antique.....	80-81
downdraft vent.....	19	concrete.....	70-71			architrave.....	251-252
wiring.....	108	demolition & hauling.....	76			bar.....	88
Cooler, evaporative.....	213	description.....	12			bathtub enclosure.....	327
Coping stones.....	254	door hardware.....	97			batten.....	82
Coping, swimming pool.....	418	doors.....	90			bypassing.....	77
Copper		drywall.....	104			cabinet.....	35
roofing.....	348	electrical.....	126-127			café.....	88
supply pipe.....	315	excavation.....	135			cleaning.....	40-41
Coral stone wall.....	248	fences.....	149			closet.....	77
Corbel, gingerbread.....	171	finish carpentry.....	182			cypress, custom milled.....	80
Core drill, rental.....	70	fireplaces.....	193-194			Dutch.....	83
Core drilling, concrete.....	64	flooring.....	206			entry.....	84-86
Corinthian capital.....	51	framing.....	382			entry, mobile home.....	219
Corner bead.....	102	hazardous materials.....	210			fir, custom milled.....	80
molding.....	161	HVAC.....	214			fire-rated.....	78
Corner block molding.....	154	insulation.....	218			fireplace.....	189
Cornice		masking and moving.....	230			folding.....	77
stone.....	253	masonry.....	265			French.....	78
window, gingerbread.....	173	painting.....	299			French, exterior.....	83
Corrugated roofing		paneling.....	306			full-louvered.....	78
aluminum.....	346	plaster and stucco.....	313			garage.....	90
concrete tile.....	346	plumbing.....	333			half-louvered.....	79
fiberglass.....	347	retaining walls.....	338			hardboard.....	77, 78
galvanized steel.....	347	roofing.....	352			header, gingerbread.....	171
Corrugated siding, fiberglass.....	393	rough carpentry.....	382			interior.....	78
Costs, determining.....	4	security systems.....	391			mahogany, custom milled.....	81
Cottage cheese texture.....	101, 103	siding installation.....	401			mirrored.....	78
Countertops		suspended ceilings.....	417			oak, custom milled.....	81
butcher block.....	37	Cricket.....	378			painting.....	281
ceramic tile.....	37	Crown molding.....	161-162			panel.....	80
cleaning.....	40						

- pet 89
 pocket 79
 reconditioned antique 80
 redwood, custom milled 80
 shower 327
 sliding patio 89
 sliding patio screen 89
 solid-core interior 78
 stain and varnish 281
 storm/screen 82
 storm/screen, mobile home 220
 stripping paint 297
 T&M charts 90
 tear-out 273
 veneer exterior 83
 Victorian storm 82
 walnut 81
 Doric capital 51
 Dormer
 Dutch hip 373
 gable 372
 gambrel 373
 hip 373
 roof 374
 shed 372
 Double dome skylight 442
 Double-hung window
 aluminum 433
 wood 440
 Douglas fir flooring 203
 Dovetail joint 364
 Downdraft vent, cooktop 19
 Downspout 398
 conductor 398, 401
 rain gutter 401
 Drain, swimming pool 419
 Drawer fronts 35
 Drip cap molding 158-159
 Drip edge 351
 roof 223
 roof, mobile home 223
 Driveway
 asphalt 65
 concrete 61
 gate 144
 Drop-in ceiling panels 415
 Drums & bags, hazmat 273
 Dry rot
 capital repair 52
 column repair 50
 Dryers, clothes 23
 cleaning 39
 Drying fans 275, 429
 Drywall 100-104
 3/8" 100
 1/2" 100
 5/8" 101
 acoustic ceiling texture 101
 cleaning 41
 corner bead 102
 fasteners 102
 fire rated 100
 foil backed 100, 101
 furring channel 101-102
 joint compound 102
 lifter 103
 painting 279
 patching 101
 removal 100
 rental equipment 103
 sound-resistant furring
 channel 101-102
 T&M charts 102
 tape 102
 texture 100, 101
 texture compound 103
 type X 100
 Z channel 102
 Duct, HVAC 211
 Dump fees 75
 asbestos 209
 Dump truck, rental 69
 Dumpsters 75, 272
 Dutch bond 241
 Dutch doors 83
 Dutch hip dormer 373
 DWV pipe 316
 cast iron 316
 PVC 317
 Dye, concrete 63
- ## E
- Earthquake code requirements 56
 Edge wood floor 203
 Elastomeric roofing 349-350
 Electric power, temporary 420
 Electric water heater, mobile home 222
 Electrical 105-129, 220
 120 volt wiring runs .. 105, 107-108
 240 volt wiring runs 108-109
 bathroom fan/heat 112
 bathroom light 116
 breaker panels 110
 cable service 111
 ceiling fan 111
 chandeliers 116-117
 circuit breakers 112
 cleaning 41
 complete house 105
 conduit 109
 conduit service 111
 covers, outlets or switches 113
 detectors 114
 electric metallic tubing 109
 exhaust fans 112-113
 exterior light fixtures 123-124
 exterior post light fixture 124-125
 fans 112-113
 fixture allowance 116
 flood lights 123-124
 fluorescent light fixtures 121-122
 heating 112, 115
 intercom systems 109
 interior light fixtures 116-125
 light fixture quality 115
 lighting 115
 low-voltage runs 109
 mask lighting 229
 outlets and switches 105-106
 porcelain light fixture 123
 Romex 110
 service, overhead 110
 service, underground 110
 sound systems 114
 spot lights 123
 strip channel 123
 strip lighting 123
 switches and outlets 106
 T&M charts 126
 television antenna 114
 testing circuits 114
 thermostats 114
 underground wiring, light post 115
 Electrical-resistance heating
 cable 115
 wiring 107, 108
 Elliptical window
 aluminum 432
 vinyl 435
 wood 438
 Embossed wall coverings, Lincrusta 425
 Embossing, wood 85, 151
 Emergency board up 420
 roof or wall opening 420
 Emergency water extraction 429
 Empire capital 51
 EMT conduit 109
 Encapsulate
 asbestos-acoustical ceiling 209
 framing 275
 rule of thumb 275
 with sealer 274
 Enclosed stairs 402
 Enclosures, swimming pool 278
 Engineer brick 231-232, 234-240
 Engineers fees 138
 English bond 241
 Enrichment, plaster 310
 Entrance chandeliers 116, 118
 Entrance lockset, mobile home 220
 Entry doors 84
 ash 85
 cherry 86
 combination/storm, mobile
 home 220
 cypress 86
 fanlites 88
 fiberglass, mobile home 219
 fir 84
 fixed transom 88
 grades 84
 mahogany 85
 oak 85
 paint grade 84
 painting 281
 redwood 86
 side lites 85-86
 stain grade 84
 steel 84
 walnut 86
 wood 84
 Environmental consultant 271-272
 EPDM elastomeric roofing 349-350
 Epoxy injection, concrete 56
 Equipment
 drywall 103
 personal protection 271
 Equipment charts, about 6
 Equipment rental
 auger 69
 backhoe 70
 concrete pump truck 69
 concrete saw 69
 core drill 70
 crane 70
 dump truck 69
 jackhammer 69
 pressure pot 70
 Erechtheum capital 51
 Estimating 4
 fees 138
 using National Estimator 7
 Evaporative cooler 213
 plumbing 320
 Excavation 130
 backfill 130
 basement 130
 crawl space 130
 footings 130
 foundation, slab and footings 132
 mobilization charge 130
 rental equipment 132
 sewer line trench 131
 slab-on-grade 130
 T&M charts 132
 utility repair 132
 utility trench 130
 water line trench 131
 Exhaust fans 112-113
 Exhaust ventilator, mobile home 219
 Exposed aggregate 62
 Exterior decks 366-367
 Exterior doors
 French 83
 jamb & casing 87
 locksets 94
 remove & reinstall 87
 veneer 83
 Exterior light fixtures 123-125
 Exterior moldings
 architrave 156
 door surround 157
 window surround 157
 Exterior pipe lines 317
 Exterior walls
 framing 354, 356
 mobile home 223

Exterior water supply lines.....317
Extraction, water429

F

Fabric reinforcement338
Face brick231
Face, fireplace.....190-191
Factory stained siding.....397
Factory-built panels.....378
Fan bracket, gingerbread170
Fanlites, entry doors88
Fans
 bathroom exhaust.....112, 113
 ceiling.....122
 drying.....275
 kitchen exhaust.....113
 whole house exhaust.....113
 wiring.....107-108
Fascia.....397
 awning26
 painting.....294
 siding.....397
Fasteners, framing.....379
Faucets
 antique style329, 330
 bathroom sink.....320
 bathtub.....321
 bidet.....320
 kitchen sink.....320
 laundry sink.....320
 quality.....320
 repack.....321
 shower.....321
 wet bar.....321
Fees.....138
 building permit.....138
 dump.....75
 dump, asbestos.....209
 engineering.....138
 estimating.....138
 plan drawing.....138
 sewer connection.....138
 soils engineer.....138
 structural engineer.....138
 water connection.....138
Felt, roofing.....351
Fence posts
 chain-link.....144
 wood.....139
Fences.....139
 basketweave.....139
 board.....140
 board with lattice cap.....140-141
 board-and-batten.....142
 board-on-board.....141
 chain-link.....143-144
 chain-link, temporary.....420
 cleaning.....42
 gate hardware.....143
 masonry.....246

ornamental iron.....147
painting.....286
picket.....142-143
posts, chain-link.....144
posts, wood.....139
safety.....421
seal or stain.....286
T&M charts.....148
vinyl picket.....145
vinyl slat.....146
vinyl three-rail.....146
wood.....139
Fiber and cement shingles.....344
Fiber drums.....209
Fiber tube wrap.....59
Fiberboard sheathing.....376
Fiberglass
 entry door, mobile home.....219
 insulation.....215-216
 roofing, corrugated.....347
 siding, corrugated.....393
 swimming pool.....418
Field stone wall.....248
Fill wood floor.....203
Filters, vent fan.....209
Final construction clean-up.....46
Finials, gable.....173
Finish boards.....175
Finish carpentry.....151-184, 220
 architrave molding.....156
 astragal molding.....159
 base molding.....151
 block molding.....154-155
 bookcase.....166
 carved onlay.....174-175
 casing door or window.....220
 casing molding.....152-153
 cedar closet lining.....165
 ceiling cove.....220
 chair rail molding.....158
 cleaning.....42
 closet organizer.....165
 closet shelving.....165
 coffered ceiling.....168
 corner bead.....161
 cove molding.....159
 crown molding.....161-162
 door surround.....157
 drip cap molding.....158-159
 finish board.....175
 finish plywood.....175
 fireplace mantel.....166
 gimp molding.....220
 gingerbread trim.....169
 hand rail.....162
 head block.....155
 key molding.....154
 mantel.....166-167
 mobile home.....220-221
 niche.....169
 outside corner trim.....221
 overdoor molding.....155

painting.....287
panel molding.....164
porch post.....174
running trim.....169
shoe molding.....221
specialty molding.....162
T&M charts.....176
window cornice.....173
window molding.....157-158
wood key.....154
Fir doors
 custom-milled.....80
 entry.....84-85
 French.....78
Fire brick.....186
Fire-rated doors.....78
Fire-rated drywall.....100
Fireplaces.....185
 cap, chimney.....187
 chimney pipe.....189
 clean-out.....189
 cleaning.....42
 damper.....189
 doors.....189
 facing.....190-191
 fire brick.....186
 flue cap.....187
 forms.....186
 furnace.....186
 gas kit.....190
 gas log lighter.....190
 grate.....188
 hearth.....191-192
 mantel.....167
 mantel beam.....166
 open front.....185
 prefabricated.....185-186
 screen.....188
 T&M charts.....192
 zero clearance.....185-186
Fixed picture window
 aluminum.....434
 vinyl.....436, 437
 wood.....441
Fixed shutter, wood.....399
Fixed skylight.....443
 with vent flap.....443
Fixture, rough plumbing.....318-320
Flashing, roof.....351, 352
 mobile home.....223
Flat seam roofing
 copper.....348
 lead.....348
 repair.....348
 stainless steel.....348
 terne.....348
Flatwork
 base.....62
 concrete.....61
 equipment pad.....61
 lightweight concrete.....61
 rebar.....62

stamping.....63
utility.....61
vapor barrier.....62
wire mesh.....62
Flemish bond.....241
Flexible metal conduit.....109
Flexible molds.....308
Flood lights.....123-124
Floor
 joists.....363-364
 panels.....378
 truss.....369
Floor drains.....320
Flooring.....197
 beech.....202
 birch.....202
 carpet.....197-198
 ceramic tile.....199
 cherry.....202
 cleaning.....43
 Douglas fir plank.....203
 Douglas fir strip.....203
 hardwood.....201-203
 hickory.....202
 longleaf pine plank.....203
 longleaf pine strip.....203
 maple parquet.....202
 maple strip.....201
 marble.....198
 painting.....292
 quarry tile.....199
 red oak parquet.....202
 red oak plank.....202
 red oak strip.....201-202
 resilient tile.....200
 rubber base.....201
 sand, edge and fill.....203
 slate.....199
 sleepers.....204
 southern pine plank.....203
 southern pine strip.....203
 stone.....198
 T&M charts.....204
 teak.....202
 tear-out.....273
 terrazzo.....199-200
 tile.....199
 underlayment.....204
 vinyl.....200
 vinyl cove.....201
 vinyl tile.....200
 walnut.....202
 white oak.....202
 wood.....201-203
Flue, chimney.....187, 189
Fluorescent circline fixtures.....122
Fluorescent strip light.....121
 suspended ceiling.....121
Fluted block wall.....243
Foam insulation board.....216
Foam sheathing.....376
Fog treatment, mold.....275

- Foil wallpaper 424
 Foil-backed drywall 101
 Foil-faced cabinets 33
 Foil-faced foam sheathing 376
 Folding doors 77
 jamb & casing 78
 Footing and foundation wall 58
 Footings 56-57
 excavation 130
 stabilization 74
 Forced-air fireplace 185
 Forced-air furnace 211
 Formica 36
 Forming
 fireplace 186
 footings 56-57
 foundations 57-59
 Foundations
 adjustable jack 221
 anchor 221
 backfill 65
 buttress 64-65, 74
 coating 64
 concrete 57-59
 excavation 64
 mobile home 221
 pargeting 63
 raise, setup, block & level 221
 setup & site prep 221
 sill plate 357
 stabilization 74
 tie-down strap 221
 utility hookup 221
 wall backfill 130
 wall forms 57-58
 Frame-and-panel wall 304-305
 Framing 353
 beams 359-362
 CEC bracing 357
 chimney cricket 378
 deck stairs 367
 decks 366-367
 door 357
 dormer 372-374
 encapsulate 275
 exterior walls 354, 356
 fasteners 379
 floor panels 378
 floor truss 369
 furring strips 368
 header beam 358
 hip in truss roof 375
 interior soffit 377
 interior walls 353, 355-356
 joist system 368-369
 joists 363
 lally column 359
 ledged-and-braced door 82
 mail box 378
 mansard truss roof 376
 metal braces 379
 mold remediation 274
 overhang joint 365
 post & beam 362-364, 385
 posts 358
 rafters 369
 roof 369, 371-372
 roof panels 378
 roof sheathing 376
 roof truss 374-375
 sealing 294
 sheathing 376-377
 sill plate 357
 structural panels 378
 top plate 357
 truss roof 376
 trusses 362
 valley in truss roof 375-376
 wall panels 378
 wall sheathing 376
 walls 357
 windows 357
 Framing lumber
 oak 379
 pine 379
 redwood 379-380
 treated 380
 Free-standing greenhouse 278
 Freezer and refrigerator 20-21
 French doors
 exterior 83
 interior 78
 Frieze
 Anaglypta 425
 Lincrusta 425
 plaster 310
 Full-height cabinets 34-35
 Full-louvered doors 78
 Furnaces
 electric 211
 fireplace 186
 forced-air 211
 gas 211
 heat pump 211
 mobile home 222
 oil 211
 servicing 211
 vent pipe 212
 wiring 107
 Furring channel, metal
 hat-shaped 101-102
 sound resistant 101-102
 Z channel 102
 Furring strips 368
 roofing 346
- G**
- Gable dormer 372
 Gable ornament 173
 Gable roof 369
 hand framed 372
 QuickCalculator 458-459
 rafters, QuickCalculator 454-455
 truss, mobile home 224
 truss, QuickCalculator 456-457
 Galvanized steel
 roofing, corrugated 347
 roofing, ribbed 347
 shingles 339
 supply pipe 315
 swimming pool 418
 Gambrel roof 371
 dormer 373
 trusses 376
 Garage door hardware 97
 Garage doors 90
 cleaning 41
 opener 90
 opener, wiring 107
 painting 286
 springs 90
 Garbage disposals 20
 wiring 107
 Gas fireplace kit 190
 log lighter 190
 Gas furnace 211
 Gas water heaters 223
 mobile home 222
 Gate latch, wiring 109
 Gate opener, electric 147
 Gates
 cedar 139-143
 chain-link 144
 driveway, chain-link 144
 hardware 143
 ornamental iron 147
 pine 140-143
 redwood 139-143
 vinyl picket 145
 vinyl rail 146
 vinyl slot 146
 Gauging plaster 313
 Gazebo 277
 GeoGrid 338
 Germicide/mildewcide treatment 429
 GFCI outlets 105
 Gimp molding 220
 Gingerbread
 arch spandrel 172
 bracket 170
 corbel 171
 door or window header 171
 gable finial 173
 gable ornament 173
 painting 290
 post drop 171
 running trim 169
 spandrel 172
 window cornice 173
 Glazed block walls 243-244
 thinline 247
 Glazing 431
 Glitter, acoustic ceiling 103
 Globe shades 125
 Glove bag 209
 Glue-down carpet 197
 Glue-laminated beam 359
 Goose neck balustrade 408
 Grade beams 60, 68
 cap, block wall 246
 Grades, entry door 84
 Grading, minimum charge 65
 Granite
 countertops 36-37
 venger 251
 wall coping stones 254
 Grass cloth wallpaper 424
 Grate, fireplace 188
 Gravel stop 351
 Greenhouse 278
 Grid, suspended ceiling
 12" x 12" 413
 2' x 2' 414
 2' x 4' 413
 Grille, cold-air 213
 Grilles and grid, windows 431
 Grout supplies 258
 Grouting, compaction 65
 Guard, security 421
 Gun, hopper & compressor, drywall 103
 Gutters 398
 painting 295
 Gypboard
 3/8" 100
 1/2" 100
 5/8" 101
 acoustic ceiling texture 101
 corner bead 102
 fasteners 102
 fire rated 100
 foil backed 100, 101
 furring channel 101, 102
 joint compound 102
 lifter 103
 patching 101
 rental equipment 103
 repair 101
 sound-resistant furring
 channel 101, 102
 T&M charts 102
 tape 102
 texture 100, 101
 texture compound 103
 type X 100
 Z channel 102
 Gypsum cement 258
 Gypsum plaster 309
- H**
- Half-elliptical window
 aluminum 431
 vinyl 434
 wood 437
 Half-lap joint 364

Half-louvered doors.....	79	water, gas.....	327	In-sink hot water dispenser, wiring..	107	exterior doors.....	87
Half-round molding.....	160	wiring.....	107, 108	Indoor-outdoor carpet.....	197	exterior, additional costs.....	87
Half-round window		Heating, temporary.....	420	Infrared detector light.....	125	interior door.....	79
aluminum.....	431	Heating, ventilating and AC.....	211-214	Insulated steel door.....	83	painting.....	283
vinyl.....	434	HEPA vacuum cleaner.....	210	Insulation.....	215	strip paint.....	297
wood window.....	437	Herringbone weave.....	241	attic.....	215, 216	Job site security.....	421
Hammer beam truss.....	362	Hickory		blow into existing wall.....	215	Joint compound.....	103
Hand rail		flooring.....	202	board.....	216	Joints	
deck.....	367	frame-and-panel wall.....	305	cavity wall.....	239	post & beam.....	364
wood.....	162	plywood paneling.....	303	cellulose.....	215	raked.....	242
Hand texture, drywall.....	103	High early strength concrete.....	66	fiberglass.....	215, 216	sill corner.....	364
Hand-carved moldings.....	162-164	High strength concrete block.....	245	foam, foundation wall.....	58	Joist system.....	368-369
Hand-framed dormer.....	372-374	Hinges.....	95-96	loose block.....	245	mobile home.....	224
Dutch hip.....	373	Hip		mineral wool.....	215	QuickCalculator.....	460-461
gable.....	374	dormer.....	373	perlite for block.....	245	Joists.....	368-369
gambrel.....	373-374	roof.....	371-372	polystyrene.....	339	deck.....	366
hip.....	373	truss roof.....	375	polystyrene block inserts.....	245	floor.....	363-364
shed.....	374	Hole repair, concrete.....	56	rigid foam.....	216	laminated l.....	369
Hand-framed roofs.....	371-372	Hood, range.....	19	T&M charts.....	216-217	Jumbo brick.....	233-240
Dutch hip.....	372	Hooks, robe.....	30	tear-out.....	273	Jumping jack compactor.....	135
gable.....	369	Horizontal lap siding, mobile home.....	225	vermiculite.....	215		
gambrel.....	371	Horn, security system.....	391	vermiculite for block.....	245		
hip.....	371	Hose bibb.....	320	Intercoms			
mansard.....	371	Hot water dispenser, wiring.....	107	master station.....	113		
valley.....	371	Housing		remote station.....	113		
Hand-hewn beam.....	362	manufactured.....	219	wiring.....	107, 109		
Hang and dry carpet in plant.....	429	mobile.....	219	Interior architrave.....	156		
Hangers, clothes.....	30	Humidifiers.....	212	Interior bearing wall			
Hanging light fixtures.....	122-123	wiring.....	107	per lf.....	353-354		
Hardboard		Hut, chickhee.....	278	per sf.....	355-356		
doors.....	77-78	HVAC.....	211-222	Interior doors			
lap siding.....	394	air conditioning.....	212	French.....	78		
paneling.....	303	air conditioning with heat.....	212	full-louvered.....	78		
siding.....	394	baseboard heater.....	115	half-louvered.....	79		
underlayment.....	204	baseboard heater, mobile home.....	222	hollow-core.....	78		
Hardware		cleaning.....	43	jamb & casing.....	79		
bathroom.....	29-33	drop-in suspended		lockset.....	95		
door.....	94-99, 220	ceiling panels.....	415	painting.....	282		
Hot-shaped furring channel.....	101-102	duct work.....	211	remove & reinstall.....	79		
Hauling debris.....	75	evaporative cooler.....	213	Interior partition wall.....	353, 355		
Hazardous materials.....	209	furnace.....	211	mobile home.....	223		
drums and bags.....	273	furnace, mobile home.....	222	per bf.....	357		
rental equipment.....	210	furnace service.....	211	per lf.....	353-354		
T&M charts.....	209	furnace vent pipe.....	212	per sf.....	355-356		
Head block molding.....	155	grille.....	213	Interlocking concrete block.....	245		
Header, gingerbread.....	171	heat pump.....	211	Intermediate conduit.....	109		
Header beam		heat register.....	213	Iron fence.....	147		
beam.....	358	heat with air conditioning.....	212	Island cabinets.....	34		
bond.....	241	humidifier.....	212				
wall.....	358	mask heater.....	229				
Hearth, fireplace.....	191-192	mobile home.....	222				
Heat lamps, bathroom exhaust fan..	112	mold remediation.....	274				
Heat pumps.....	211	T&M charts.....	213				
wiring.....	109	thermostat.....	213				
Heat register.....	213	through-wall unit.....	212				
Heaters		through-wall with heat/AC.....	212				
baseboard.....	115	Hydrated lime.....	258				
baseboard, mobile home.....	222						
bathroom, with exhaust fan.....	113						
space.....	115						
through-wall with AC.....	212						
water, electric.....	328						

K

Keene's cement plaster.....	309
Key control, security system.....	390
Key molding.....	154
Key pad, security system.....	390
Key, wood.....	154
Keystone.....	250
Kick plates.....	97
King post truss.....	362
Kitchen cabinets	
base (lower).....	33-34
island.....	34
upper.....	34
utility.....	34
Kitchen fans.....	113
wiring.....	107
Kitchen plumbing.....	319
faucet.....	320
sink.....	322
Kitchen, mask.....	229
Knocker, door.....	96
Knotty pine	
plywood paneling.....	303
veneer plywood.....	175

L

Labor charts, about.....	5, 7
Labor costs.....	5-6
acoustic ceilings.....	15
appliances.....	24
asbestos.....	210
awnings.....	28-29
bathroom hardware.....	32-33
cabinets.....	38
carports.....	28-29
columns.....	55
concrete.....	70

J

J-rail, roof, mobile home.....	223
Jack, adjustable.....	221
Jack, pipe.....	352
Jacket concrete pier.....	61
Jacket grade beams.....	61
Jackhammer with compressor, rental..	69
Jackpost.....	359
Jamb & casing	
closet door.....	78

- demolition & hauling 76
 door hardware 97
 doors 90
 drywall 104
 electrical 126
 excavation 135
 fences 149
 finish carpentry 182
 fireplaces 193
 flooring 206
 framing 382
 hazardous materials 210
 HVAC 213-214
 insulation 217-218
 manufactured housing 228, 276
 masking and moving 230
 masonry 265
 mobile housing 228
 mold remediation 276
 painting 299
 paneling 306
 plaster and stucco 313
 plumbing 333
 retaining walls 338
 roofing 352
 rough carpentry 382
 security systems 391
 siding 400
 stairs 411
 suspended ceilings 416
 tile 423
 wall coverings 427
 water extraction 430
 windows 446-447
 Labor productivity, about 5, 7
 Ladder style reinforcing 258
 Lally column 359
 Laminated beams 359-360
 Laminated I joist 369
 Landfill fees 75
 Landing, deck 367
 Lapped dovetail joint 365
 Latch release, wiring 109
 Latex paint 297
 Lavan veneer
 bypassing door 77
 exterior door 83
 folding door 77
 interior door 78
 plywood 175
 Laundry room, plumbing 318-319
 Laundry sink 323
 faucet 320
 Lava stone wall 248
 Leach field 328
 Lead roofing 348
 Leak detection, swimming pool 418
 Leak repair
 roofing 352
 underwater, swimming pool 419
 Lean-to greenhouse 278
 Ledge-and-braced door 82
 Letter plates 96
 Light fixtures
 allowance 116
 bathroom bar 116
 billiard table 120
 bowl shade 120
 ceiling fan 122
 chandeliers 116-117
 cleaning 41
 complete house 105
 exterior allowance 124
 exterior recessed 124
 exterior wall mount 124
 exterior, with sensor 125
 flood light 123-124
 fluorescent cirdline 122
 fluorescent strip 121-122
 hanging 122-123
 infrared detector 125
 low-voltage wiring 109
 mask 229
 mobile home 220
 motion detector 125
 pendant 119
 porcelain 123
 post light 115, 124-125
 post light, painting 286
 quality 115
 recessed spot 123
 rewire 125
 shower style 119
 strip spot light 123
 wall mount 118, 120-121
 wiring 107
 Light stand, rental 210
 Lighter, gas log 190
 Lighting 115
 Lightweight block wall 242
 Lightweight concrete flatwork 61
 Lime, hydrated 258
 Limestone
 architrave 251-252
 trim 253
 veneer 249, 251
 wall 248
 wall coping stones 254
 Lincrusta 425
 Linen closet shelves 165
 Liner, vinyl, swimming pool 419
 Linoleum flooring 200
 Lintel
 angle iron 258
 concrete 257
 Lites
 entry door 84-86
 exterior door 83
 panel doors 81
 steel entry door 84
 wood entry door 84
 Locks 94-96
 deadbolts 94
 security chain 95
 thumb latches 95
 Locksets
 entry 95
 exterior 94
 interior 95
 mobile-home type 220
 screen door 96
 storm door 96
 thumb latch 95
 Log cabin siding 397
 Log lighter 190
 Longleaf pine flooring 204
 Loose block insulation 245
 Louvered doors 78, 79
 bypassing 77
 folding 77
 Low-tank toilet 331
 Low-voltage outlets/switches 106
 Lower cabinets (base) 33-34
 Lumber 379
 finish boards 175
 prices 353
 Luminous ceiling panels 413-414
- M**
- Machine texture, drywall 100-101
 Magnetic contact 390
 Mahogany
 closet jamb & casing 78
 columns 53
 custom-milled doors 81
 entry door 85
 exterior jamb & casing 87
 finish boards 175
 frame-and-panel wall 305
 interior jamb & casing 79
 molding 151
 plywood paneling 303
 Mahogany veneer
 bypassing door 77
 exterior door 83
 exterior jamb & casing 87
 folding door 77
 interior door 78
 interior jamb & casing 79
 plywood 175
 Mail boxes 378
 Main disconnect, electrical 112
 Manhour costs 6
 Mansard roof 371
 trusses 376
 Mantels 166, 167
 beam 166
 painting 289
 Manufactured housing
 (see Mobile home) 219-228
 Maple
 molding 151
 parquet flooring 202
 plywood paneling 303
 strip flooring 201
 Marble
 architrave 251-252
 coping stones 254
 cultured, window sill 423
 fireplace face 190
 fireplace hearth 191
 flooring 198
 trim 253
 veneer 249, 251
 wall 248
 Markup, about 6
 Masking and moving 229-230
 minimum charge 229
 T&M charts 230
 Masonry 231
 angle iron lintel 258
 architrave 251-252
 block insulation 245
 block walls 242-243
 bond beam 246
 brick/block
 walls 233-234, 236, 238
 brick arch 242
 brick veneer 240
 brick walls 231-232, 239
 brick walls, triple wythe 237
 cavity walls 238-239
 cement 258
 ceramic veneer 250
 cleaning 43, 257
 concrete lintel 257
 cornice stone 253
 cut opening in wall 257
 cut stone 254
 demolition 265
 face brick 231
 fence 246
 fluted block walls 243
 glass block walls 247
 glazed block walls 243-244
 grade beam 246
 keystone 250
 painting 293
 pargeting 283
 pavers 247
 raked joints 242
 rebar 258
 repair brick wall 256
 repair stone 257
 repair stone wall 256
 repoint brick 255
 repoint stone 256
 retaining walls 338
 salvage bricks 256
 screen block 244
 shore opening for repair 257
 slump block walls 243
 split-face block walls 244
 split-rib block walls 244
 stone architrave 251-252

479

Paid leave (see also Labor charts, each section)	5	Parquet flooring		board-and-batten fence.....	142	Plates	
Paint coats.....	279	maple	202	board-on-board fence	141	door.....	96
Painting.....	279-322	red oak.....	202	bypassing door.....	77	kick.....	96
acoustic ceilings.....	279	Particleboard underlayment.....	204	capitals.....	50-52	letter.....	96
awnings and carports.....	279	Partition wall		column bases	53	push.....	96
columns.....	280	per bf	357	columns.....	49-50	sill.....	357
concrete.....	280	per lf	353	exterior jamb & casing	87	top	357
doors.....	281	per sf	354	fence posts.....	139	Plumbing.....	222, 315
drywall, plaster and stucco	279	sloping per sf	355	finish boards	175	antique style fixtures.....	329
fences.....	286	Patch		folding door	77	bathroom.....	318
finish carpentry.....	287	drywall	101	frame-and-panel wall	304	bathtub.....	324
flooring.....	292	roofing.....	352	gate.....	140-143	bathtub & shower.....	325
foundation coating.....	64	Patio covers	25-26	interior jamb & casing.....	79	bidet.....	319
light post	286	Patio doors	89	louvered doors.....	77-78	cleaning.....	44
masking.....	229-230	cleaning.....	41	molding.....	151	complete house	317
masonry.....	293	paint.....	285	newel	409	DWV pipe.....	316
medicine cabinet	286	screen	89	picket fence	142-143	exterior lines.....	317
moving	230	Pattern base molding.....	152	pilasters.....	49, 50	faucets.....	320
paneling.....	292	Pattern casing molding.....	153-154	stair balustrade	406	finish.....	324
roofing.....	293	Pavers	247	Pipe		fixtures only	318
rough carpentry	294	Pecan veneer plywood	175	black steel supply	315	pumps.....	329
seal asbestos.....	209	Pedestal sink.....	330	brass water supply	315	refrigerator	22
siding.....	294	Pedestals.....	53	cast-iron DWV.....	316	rough-in	318-319
stairs	295	Peep hole	97	chimney.....	189	septic system.....	328
stripping	296-297	Pegboard.....	303	copper water supply.....	315	shower stall.....	325
stucco.....	279	Pelmet, Anaglypta.....	425	CPVC water supply.....	316	sinks.....	321
swimming pool.....	419	Pendant light fixtures.....	119	furnace vent	212	supply pipe.....	315
T&M charts.....	297	Perfatape, drywall	102	galvanized steel water supply.....	315	T&M charts.....	332
wallpaper.....	296	Perlite plaster.....	309	PVC DWV	317	toilets	324
windows.....	296	Permit fees	138	PVC water supply.....	316	underground line repair.....	317
Pan, shower.....	326	Personal protection equipment.....	271	underground line repair.....	317	water heater.....	327, 328
Panel doors.....	80	Pet doors	89	Pipe jack	352	water heater, mobile home.....	222
antique.....	81	Phone, wiring.....	109	Plan drawing fee	138	water shut-off valve	317
bypassing.....	77	Pick-up truck.....	76	Plank flooring		water softener	328
folding doors.....	77	Picket fences		Douglas fir	203	water supply pipe	315
paint.....	281	ornamental iron	147	longleaf pine.....	204	Plywood	
remove & reinstall	81	paint.....	287	red oak.....	202	finish.....	175
repair.....	81	vinyl.....	145	southern pine	203	paneling	303
transom, with glass.....	88	wood.....	142-143	Plaster		sheathing.....	376-377
Panel molding corner radius.....	164	Picture window		acoustical.....	308	siding	394
Panel, breaker.....	110	aluminum fixed	434	architrave.....	311	T1-11 siding	394
Paneling.....	303	vinyl fixed	436-437	capitals.....	50-52	underlayment	204
angled installation.....	304	wood fixed	441	cast-in-place mold.....	310	veneer	175
board-and-batten	304	Piers.....	59-60	ceiling medallion.....	311	Pocket doors	79-80
board-on-board	304	precast concrete.....	359	cleaning.....	41, 44	Polyethylene	
cleaning.....	43	Pilasters.....	52-53	column bases	53	bags.....	209
frame-and-panel wall	304-305	bases.....	55	columns.....	49-50, 310	sheeting.....	209
hardboard.....	303	block wall	245	curved wall.....	310	Polypropylene shutter	399
painting.....	292	fluted.....	49	enrichment.....	310	Polystyrene insulation.....	239
pegboard	303	pedestals	55	enrichment repair	308	inserts.....	245
plywood.....	303	plaster	310	frieze.....	310	Pool, swimming	418
T&M charts.....	305	repair.....	50	gypsum.....	309	enclosure	278
tongue-&-groove	304	replacement	49	installed on wood lath.....	310	Poplar	
wall molding for.....	303	square	50	Keene's cement	309	finish boards	175
Panels		stucco	312	molding.....	310	molding.....	151
control, security system	390	T&M charts.....	54, 55	painting.....	279	newel	409
structural, factory-built	378	tapered.....	49	perlite or vermiculite	309	stair balustrade	406
Panic button	391	Pile retaining walls.....	337	pilasters.....	49-50, 310	Porcelain light fixture.....	123
Paper wallpaper.....	424	Pillbox toilet, antique style.....	331	production mold	310	Porch posts	174
Pargeting		Pine		T&M charts.....	313	painting.....	292
block walls.....	246	basketweave fence	139	thin-coat.....	309	Portable toilet	421
concrete.....	63	board fence	140-141	Plastic safety fence	421		

Post & beam framing.....	362, 385
joints.....	364
oak.....	363
pine.....	362
Post bracket, gingerbread.....	170
Post drop.....	171
Post lights.....	124-125
underground wiring.....	115
Posts	
awning.....	25
fence, chain-link.....	144
fence, wood.....	139
framing.....	358, 380
light, painting.....	286
lumber.....	358
mail box.....	378
metal for post light.....	124-125
porch.....	174
porch, painting.....	292
redwood for post light.....	125
Pot, chimney.....	188
Pothole, filling.....	66
Power, temporary electric.....	420
Precast concrete pier.....	60, 359
Prefabricated decontamination unit.....	209
Prefabricated fireplace.....	185-186
Prefinished flooring.....	201-202
Pressure mat.....	391
Pressure pot, rental.....	70
Pressure wash, masonry.....	257
Prismatic room,	
QuickCalculator.....	464-465
Production mold, plaster.....	310
Productivity charts, labor.....	7
Profit.....	6
Pump truck.....	64
rental.....	69
Pumps	
submersible water.....	329
sump.....	329
wiring.....	108
Purlins.....	363, 364
Push plates.....	96
PVC	
conduit.....	109
DWV pipe.....	317
pipe.....	316
roofing.....	350

Q

Quarry tile flooring.....	199
Quarter-round molding.....	160-161
Quarter-round window	
aluminum.....	432
vinyl.....	435
wood.....	438
Quartersawn red oak strip flooring.....	201
Queen post truss.....	362
QuickCalculators.....	448-469
bearing wall.....	450-451
concrete wall & footing.....	452-453

gable roof rafters.....	454-455
gable roof trusses.....	456-457
gable roofing.....	458-459
joist system.....	460-461
mathematics.....	449
non-bearing wall.....	462-463
prismatic room.....	464-465
quantity.....	450-463
rectangular room.....	466-467
round room.....	468-469
surface area.....	464-469
Quoins.....	250

R

Radiant heat system, wiring.....	108
Radon detectors.....	114
wiring.....	108
Rafter	
gable roof.....	369
mobile home.....	224
Rafter joints	
bird's mouth.....	366
tongue & fork joint.....	366
Rail fences, vinyl.....	146
Rail, hand.....	162
Railing, deck.....	367
Railroad tie retaining walls.....	337
Rain gutters.....	398
painting.....	295
Raked joints.....	242
Range	
cleaning.....	39
downdraft vent.....	19
electric.....	17, 18
gas.....	15-16
restaurant style.....	16
wiring.....	107, 109
Range hoods.....	19
cleaning.....	39
wiring.....	108
Ready mix concrete.....	66
Rebar.....	64, 69, 258
concrete footings.....	56-59
concrete foundations.....	57-59
concrete piers.....	59
flatwork.....	62
grade beams.....	60
Recessed ceiling tile.....	414
Recessed light fixtures.....	123-124
Recharge A/C system.....	212
Reclaimed longleaf pine flooring.....	204
Reconditioned door.....	80-81
Rectangular room,	
QuickCalculator.....	466-467
Red oak	
finish boards.....	175
folding door.....	77
molding.....	151
newel.....	410
parquet flooring.....	202
plank flooring.....	202

plywood paneling.....	303
stair balustrade.....	407
strip flooring.....	201-202
veneer door.....	83
veneer plywood.....	175
Redwood	
basketweave fence.....	139
board fence.....	140-141
board-and-batten fence.....	142
board-on-board fence.....	141
capitals.....	50-52
column bases.....	53
columns.....	49-50
custom-milled doors.....	80
decking.....	367
entry doors.....	86
exterior jamb & casing.....	87
fence posts.....	139
framing lumber.....	380
furring strips.....	379
gate.....	139-143
molding.....	151
newel.....	410
picket fence.....	142-143
pilasters.....	49-50
post, exterior post light.....	125
posts.....	358, 380
stair balustrade.....	407
steps and railing, mobile home.....	225
Refinish cabinets.....	36
Refinished antique bathtub.....	331
Reflective barricades.....	421
Refreshment center.....	22
Refrigerant, AC.....	212
Refrigerator/freezer.....	21-22
bottom-load freezer.....	21
cabinet match.....	22
cleaning.....	39
counter-depth.....	22
plumbing.....	22, 320
refinish.....	22
refreshment center.....	22
side-by-side.....	21
top-load freezer.....	21
Refuse chute.....	75
Regional pricing.....	6, 9-11
Register, heat.....	213
Reglaze window.....	445-446
RegROUT tile.....	423
swimming pool.....	418
Reinforcement, block wall.....	245
Reinforcing wire strip.....	258
Relevel	
mobile home.....	221
suspended ceiling grid.....	414-415
Reline chimney.....	187
Remediation, mold.....	271
Rental equipment	
asbestos.....	210
auger.....	69
backhoe.....	70
concrete.....	69-70
concrete core drill.....	70

concrete pump truck.....	69
concrete saw.....	69
crane.....	70
demolition & hauling.....	76
drywall.....	103
drywall lifter.....	103
dump truck.....	69
excavation.....	132
hazardous materials.....	210
jackhammer.....	69
mold containment.....	272
pressure pot.....	70
tractor-mounted auger.....	69
water extraction.....	430
Repack faucet.....	321
Replaster swimming pool.....	419
Repoint masonry.....	255
brick.....	255
stone.....	256
Reproduction antique bathtub.....	332
Resawn beveled siding.....	396
Resilient tile floor.....	200
Respirator.....	209
cartridge.....	209
Restaurant style gas range.....	16
Retaining walls.....	337-338
anchored tieback.....	337
concrete.....	337
fabric reinforcement.....	338
interlocking block.....	337
pile.....	337
railroad tie.....	337
stone.....	337
T&M charts.....	338
tieback.....	337
Retirement cost.....	5
Rewire light fixture.....	125
Ribbed roofing	
aluminum.....	347
galvanized steel.....	348
Rigid foam insulation board.....	216
Rigid metal conduit.....	109
River stone wall.....	248
RMC conduit.....	109
Robe hook.....	30
Rock (mineral) wool insulation.....	215
Rods	
closet.....	165
shower curtain.....	31
Roll roofing.....	342
Roll-up awnings.....	27
Roman brick.....	231, 233, 235-240
Roman Ionic capital.....	52
Romex.....	110
Roof	
curb, skylight.....	442
vent.....	352
window.....	443
Roof framing	
dormer.....	374
gable.....	369
gambrel.....	371
hand-framed roofs.....	369-374

- hip 371-372
 mansard 371
 panels 378
 purlins 363-364
 sheathing 376
 truss 374-376
 Roofing 339-352
 aluminum shingles 339
 asphalt shingles 339, 342
 built-up 349
 clay tile 344, 345
 concrete tile 346
 copper 348
 corrugated aluminum 346
 corrugated fiberglass 347
 corrugated galvanized steel 347
 drip edge 351
 EDPM elastomeric 349-350
 felt 351
 fiber and cement shingles 344
 flashing 351, 352
 furring strips 346
 ice shield 351
 lead 348
 leak repair 352
 metal tile 344
 mission clay tile 345
 mobile home 223
 modified bitumen 351
 painting 293
 PVC 350
 ribbed aluminum 347
 ribbed galvanized steel 347
 roll roofing 342
 SCPE elastomeric 349
 seamed metal 349
 slate 343
 Spanish clay tile 345
 stainless steel 348
 steel shingles 339
 T&M charts 352
 terne 348
 water shield 351
 wood shakes 344
 wood shingles 343
 Room, mask 229
 Rosewood veneer plywood 175
 Rough carpentry 353
 beams 359-362
 CEC bracing 357
 deck stairs 367
 decks 366-367
 dormers 374
 exterior walls 354, 356
 floor joist 369
 furring strips 368
 hand-framed roof 369-374
 header beam 358
 interior walls 353, 355, 356
 joist system 368
 joists 363
 lally column 359
 mobile home 223
 post & beam 362, 364
 posts 358
 rafters 369
 roof 369
 sealing 294
 sill plate 357
 T&M charts 379
 top plate 357
 wall framing 357
 Rough plumbing 318
 bathroom 319
 by fixture 319
 by room 318
 complete house 318
 Round room, QuickCalculator... 468-469
 Round window 432
 aluminum 432
 vinyl 435
 wood 438
 Rounding, math 4
 Rubber base 201
 Rubble stone 190
 fireplace face 191
 fireplace hearth 191
 wall 248
 Run, wire 107-109
 Running trim, gingerbread 169
 Rustic siding, channel 395
 S4S finish boards 175
 Safety fence 421
 Safety tape 421
 Sailor course 241
 Salvage bricks 256
 Sand 258
 Sandblast, masonry wall 257
 Sanding, wood floor 204
 Sandstone 252
 architrave 253
 trim 253
 veneer 249, 251
 wall 248
 Saw, concrete, rental 69
 Sawing concrete 64
 Sawn stair balustrade 408
 Scaffolding 420
 Scamozzi capital 52
 Scarf joint 366
 Schedule 40 CPVC supply pipe 316
 Schedule 40 PVC supply pipe 316
 Scissors truss 362
 SCPE elastomeric roofing 349
 Screen 445
 bird, chimney 187
 fireplace 189
 Screen block 244
 Screen doors 82
 lockset 96
 sliding patio 89
 Screws, drywall 102
 Seal off, asbestos work 209
 Seal, asphalt driveway 66
 Sealant, encapsulation 209
 Sealer 297
 Sealing, framing 294
 Seamed metal roof repair 349
 Security chain 95
 Security guard 421
 Security systems 390
 contacts 390
 control panel 390
 horns 391
 key control 390
 key pad 390
 motion detectors 391
 panic button 391
 pressure mat 391
 sirens 391
 smoke detectors 391
 sound detectors 391
 T&M charts 391
 wiring 108
 Security, job site 421
 Septic system with leach field 328
 Service entrance 110-111
 cable 110-111
 conduit 111
 rigid steel mast 111
 Service, electrical 105-129
 Sewer connection fee 138
 Sewer line 317
 trench excavation 131
 Shake/shingle wood siding 393
 Shakes, wood 344
 Shaper knife 81
 Shear panel sheathing 377
 Sheathing 376
 fiberboard 376
 foam 376
 OSB 377
 plywood 376-377
 roof 376
 shear panel 377
 sound-deadening 376
 tongue-and-groove 377
 waferboard 377
 wall 376
 Shed dormer 372
 Shed, storage 277
 Sheetrock (drywall) 100-104
 Shelf, brackets and rod 165
 Shelving 30
 bathroom 165
 closet 165
 linen closet 165
 Shingle siding 393
 cement fiber 393
 shake or wood 393
 Shingles 339
 aluminum 339
 asphalt 339-342
 cedar 343
 fiber and cement 344
 galvanized steel 339
 wood 343
 wood shakes 344
 Shiplap siding 395
 Shock treatment, swimming pools 419
 Shoe molding 221
 Shotcrete slope stabilization 338
 Shower 31
 curtain rod 422
 tile 119
 Shower style light fixtures 326
 Showers 325
 base 327
 bathtub combination 321
 door 326
 faucet 326
 pan 319
 plumbing 325
 stall 317
 Shut-off valve, water supply 399
 Shutters 401
 install 225
 mobile home 294
 painting 399
 polypropylene 399
 wood 399
 Side-lites, entry door 85
 ash 86
 cypress 85
 fir 85
 mahogany 85
 oak 86
 redwood 84
 steel 86
 walnut or cherry 84
 wood 84
 Sidewalk 62
 concrete 63
 stamping 62
 Sidewall exhaust ventilator, mobile home 219
 Siding 393-397
 aluminum 393
 beveled 396
 board over plywood 394
 board and batten 394
 board on board 396
 bungalow 393
 cement fiber shingle 395
 channel rustic 396
 clapboard 44-45
 cleaning 396
 Dolly Varden 397
 factory stained siding 397
 fascia 397
 fiberglass corrugated 394
 hardboard 394
 hardboard lap 397
 log cabin 397

mobile home.....	225	Sleepers.....	204	3-foot wide utility.....	402	Stone walls.....	248
painting.....	294	Sliding doors		attic, disappearing.....	405	arch.....	249
plywood T1-T11.....	394	cleaning.....	40	balustrade.....	406-408	cleaning.....	257
plywood, stained cedar boards.....	394	patio doors.....	40, 89	bracket.....	408	curved.....	249
rain gutter.....	398	Sliding windows		bullnose starting step.....	405	cut opening.....	257
resawn beveled.....	396	aluminum window.....	433	circular.....	404	mortar.....	261
shake or wood shingle.....	393	vinyl.....	436	cleaning.....	45	pressure wash.....	257
shiplap.....	395	wood.....	441	deck.....	367	quoins.....	250
shutter.....	399	Slope stabilization.....	338	mitered steps.....	405	repoint.....	256
soffit.....	397	Sloping exterior wall.....	356	newel.....	409	steam clean.....	257
T&M charts.....	400	Sloping partition wall.....	355	painting.....	295	Stool, cut stone.....	254
tongue & groove.....	395	Slump block wall.....	243	spiral.....	405	Stops, door.....	96
vinyl.....	393	Smoke detectors.....	114, 391	straight.....	402	Storage shed.....	277
Sill		wiring.....	108	T&M charts.....	411	Storage trailer.....	420
corner joints.....	364	Smoke stains, cleaning.....	39	tread trim.....	409	Storm doors	
cultured marble.....	423	Smooth-face glass block wall.....	247	utility.....	402	hinges.....	96
cut stone.....	254	Soap dispenser.....	31	winders.....	404	lockset.....	96
plate.....	357	Soap holder.....	30	Stall, shower.....	325	Storm windows.....	444-445
tile.....	423	Soffit.....	397	Stamping concrete.....	63	aluminum.....	444
Single-dome skylight.....	442	framing.....	377	Standard brick.....	231-234, 236-240	wood.....	444-445
Single-hung window		painting.....	295	Standing seam roofing		Stoves	
aluminum.....	433	tongue & groove.....	397	copper.....	348	cleaning.....	39
vinyl.....	436	Soils engineer fee.....	138	repair.....	349	electric.....	16-18
wood.....	440	Soldier course.....	241	stainless steel.....	348	gas.....	15-16
Single-pour footing/foundation.....	58-59	Solid-core fire-rated doors.....	78	terne.....	348	wiring.....	107, 109
Single-wythe brick wall.....	231-232	Sound blanket, suspended ceiling.....	415	Starting step, bullnose.....	405	Straight stairs.....	402
Sink faucet.....	320-321	Sound detector.....	391	Steel		Strip flooring	
repack.....	321	Sound-deadening sheathing.....	376	frame and railing, wood steps.....	226	Douglas fir.....	203
Sinks		Southern pine		roofing.....	348	longleaf pine.....	204
bathroom.....	321-322	plank flooring.....	203	roofing, corrugated.....	347	red oak.....	201
finish plumbing.....	324	strip flooring.....	203	roofing, ribbed.....	347	southern pine.....	203
kitchen.....	322	Space heaters.....	115	shingles.....	339	Strip lights.....	121, 123
laundry.....	323	Space-saver gas range.....	15	Steel doors.....	83	electric strip channel.....	123
pedestal.....	330	Spalled concrete repair.....	56	entry.....	84	Strip point.....	296-297
rough-in fixtures.....	319-320	Spandrel, gingerbread.....	172	exterior jamb & casing.....	87	Strip room.....	75
wet bar.....	323	arch.....	172	interior jamb & casing.....	79	Strip wallpaper.....	424
Siren, security system.....	391	Spanish tile roof.....	345	Step, flashing.....	351	Structural engineer fee.....	138
Site prep, foundation.....	221	Speakers.....	114	Steps		Structural panels.....	378
Skirting, mobile home.....	226-227	wiring.....	109	concrete.....	63	Stucco	
aluminum.....	226	Specialty molding.....	162	mobile home.....	225-226	additional costs.....	311
vinyl.....	226-227	Spiral stairs.....	405	straight.....	402	architrave.....	312
wood.....	227	prefabricated.....	405	wood.....	225	capitals.....	50-52
Skylight.....	442	Split-face block wall.....	244	Stone		cleaning.....	43
accessories.....	443-444	Split-rib block wall.....	244	capitals.....	50-52	column bases.....	53
dome.....	442	Spot light fixtures.....	123	column bases.....	53	columns.....	49-50, 312
double dome.....	442	Spray, antimicrobial.....	274	columns.....	49, 50	painting.....	279
fixed.....	443	Stack bond.....	241	fireplace face.....	190	pilasters.....	49-50, 312
fixed with vent flap.....	443	Stain.....	298	fireplace hearth.....	191	portland cement.....	311
mobile home.....	228	Stain and varnish		flooring.....	198	quoins.....	250
roof curbs.....	442	columns.....	280	pilasters.....	49-50	synthetic.....	311
roof window.....	443	doors.....	281	retaining wall.....	337	T&M charts.....	313
single dome.....	442	medicine cabinet.....	286	trim.....	253	Submersible water pump.....	329
triple dome.....	442	stairs.....	295	Stone architrave		Sump pumps.....	329
ventilating.....	228, 442	wall paneling.....	292	door.....	251-252	wiring.....	108
Slab, concrete.....	61-62	wood floor.....	292	window.....	252	Supply lines, antique style.....	330
equipment pad.....	61	wood trim.....	288	Stone carving.....	256	Supply pipe	
sawing.....	64	Stainless steel roofing.....	348	Stone repair.....	256-257	black steel.....	315
stamping.....	63	Stair balusters.....	406	Stone veneer		brass.....	315
Slab-on-grade excavation.....	130	pine.....	406	arch.....	250	copper.....	315
Slat fences, vinyl.....	146	redwood.....	407	ashlar.....	249	CPVC.....	316
Slate		Stairs.....	402-404	cultured.....	250	galvanized steel.....	315
flooring.....	199	1/4 turn.....	403	rubble.....	249	PVC.....	316
roofing.....	343	1/2 turn.....	403				
veneer.....	251						

- Surround
 bathtub 326
 painting 289
 shower 326
Surround molding 157
Suspended ceilings 413-415
 12" x 12" 413
 2' x 2' 414
 2' x 4' 413-414
 cleaning 45
 drop-in HVAC panels 415
 grid for ceiling tile 413
 luminous panels 413
 sound blanket 415
 T&M charts 415
Swamp cooler 213
 plumbing 320
Sweep, door 97
Swimming pools 418-419
 acid wash 419
 aluminum 418
 border, tile 419
 caulk expansion joint 419
 close for winter 419
 concrete 418
 coping 418
 deck 418
 drain 419
 enclosure 278
 fiberglass 418
 galvanized steel 418
 leak repair, underwater 419
 liner, vinyl 419
 minimum charge 418
 open for summer 419
 paint 419
 replaster 419
 shock treatment 419
Switches
 120 volt 105-106
 240 volt 106
 3 way 105
 covers 106
 exterior 106
 low voltage 106
 outlets with wiring 105
 waterproof 106
Synthetic stone
 capitals 50-52
 column bases 53
 columns 49-50
 pilasters 49-50
Synthetic stucco 311
- T**
- T1-11 plywood siding 394
Tape
 drywall 102
 safety 421
Taping tools, drywall 103
- Teak
 flooring 202
 frame-and-panel wall 305
 molding 151
 veneer plywood 175
Tear-out 273
 ceiling finishes 273
 complete room 273
 door 273
 flooring 273
 insulation 273
 wall finishes 273
Telephone, wiring 109
Television
 antenna 114
 outlet wiring 109
Temple-of-the-Winds capital 52
Temporary 420-421
 barricades 421
 chain-link fence 420
 emergency board up 420
 heating 420
 job site security 421
 office trailer 420
 portable toilet 421
 power, electric 420
 safety fence 421
 safety tape 421
 scaffolding 420
 security guard 421
 storage trailer 420
 T&M charts 421
 traffic cones 421
Terra roofing 348
Terra cotta wall cap 254
Terrazzo flooring tile 199-200
 base 199
Testing 272
 mold 271
Texturing drywall 100-101
 equipment 103
Thatched roof 278
Thermostats 213
 replacement 114
 wiring 109
Thin-coat plaster 309
Thinline glass block wall 247
Threshold 97-99
Thumb latches 95
Tie-down strap 221
Tieback, anchored 337
Ties
 masonry 259
 retaining walls 337
Tile 422
 accessory 422
 base 199
 bathtub surround 422
 border, swimming pool 419
 carpet 198
 cleaning 45
 fireplace face 191
 fireplace hearth 192
 flooring 199
 linoleum flooring 200
 quarry flooring 199
 regROUT 423
 repair 423
 replace single tile 423
 resilient flooring 200
 shower 422
 terrazzo flooring 199-200
 T&M charts 423
 window sill 423
 with cultured marble 422
Tile roofing
 clay 344-345
 concrete 346
 metal 344
 mission 345
 Spanish 345
Tile, suspended ceiling
 12" x 12" 413
 2' x 2' 414
 2' x 4' 413-414
 concealed grid 413
Tile walls
 clay backing 246
 gypsum partition 247
 structural 246
Timbers, oak 379
Time and material charts (T&M)
 about 5
 acoustic ceilings 14-15
 appliances 24-25
 asbestos 209
 awnings 28-29
 bathroom hardware 32-33
 cabinets 38-39
 carports 28
 cleaning 46-48
 columns 54-55
 concrete 66-74
 concrete flatwork 68
 concrete footings 66-67
 concrete pier 67
 demolition & hauling 76
 door hardware 97-99
 doors 91-94
 drywall 102
 electrical 126
 excavation 132
 fences 148
 finish carpentry 176
 fireplaces 192
 flooring 204
 foundation wall 67
 grade beams 68
 hazardous materials 209
 HVAC 213-214
 insulation 216-218
 masking and moving 230
 masonry 258-270
 mobile home 228
 mold remediation 276
 painting 297-302
 paneling 305-307
 pilasters 54, 55
 plaster 313-314
 plumbing 332-336
 rebar 69
 retaining walls 338
 roofing 352
 rough carpentry 379-389
 security systems 391
 sidewalks 68
 siding 400
 stairs 411-412
 stucco 313
 suspended ceilings 415-417
 temporary 421
 tile 423
 wall coverings 426-428
 water extraction 430
 windows 446-447
Tissue holder 31
Toilet
 paper dispenser 31
 seat 324
Toilets
 antique style 331
 finish plumbing 324
 portable 421
Tongue & fork joint 364
Tongue & groove
 paneling 304
 sheathing 377
 siding 395
Toothbrush holder 30
Top plate 357
Towel bar 31
Towel ring 31
Towing, mobile home 222
Track, pocket doors 80
Tractor-mounted auger, rental 69
Traffic cones 421
Trailer 420
 office 420
 storage 420
Transom, entry doors 88
Transport fees, mobile home 222
Trash compactors 24
 cleaning 39
 wiring 108
Tread trim, stairs 409
Treated framing lumber 274, 380
Treated pine
 basketweave fence 139
 board fence 140-141
 board-and-batten fence 142
 board-on-board fence 141
 gate 140-143
 picket fence 142-143
Treated plywood sheathing 377
Trenching 130-131
Trenching machine, rental 135

Index

plumbing.....	319	skylight dome.....	442	switches, low voltage.....	106	southern pine plank.....	203
sink.....	323	skylight double dome.....	442	T&M charts.....	126	southern pine strip.....	203
White maple plywood paneling.....	303	skylight fixed.....	443	testing circuits.....	114	teak.....	202
White oak.....		skylight roof window.....	443	underground supply.....	110	walnut.....	202
flooring.....	202	skylight single dome.....	442	Wood door.....		white oak.....	202
plywood paneling.....	303	skylight triple dome.....	442	cypress, custom milled.....	80	Wood lath.....	310
Whole house electrical wiring.....	105	skylight ventilating.....	443	Dutch.....	83	Wood onlays.....	85, 174-175
Whole house fans.....	113	storm.....	444-445	entry.....	84-86	Wood shakes.....	344
wiring.....	108	T&M charts.....	446	fir, custom milled.....	80	Wood shed.....	277
Winders, stairs.....	404	vinyl.....	434-435	folding.....	77	Wood shingles.....	343
Window.....		vinyl awning.....	435-436	French.....	78	Wood shutter.....	399
apron molding.....	158	vinyl casement.....	435	French, exterior.....	83	Wood siding.....	397
architrave.....	252	vinyl casement double.....	435	interior.....	78	board and batten.....	394
awnings.....	26	vinyl elliptical.....	435	mahogany, custom milled.....	81	board on board.....	394
cleaning.....	45	vinyl fixed picture.....	436-437	oak, custom milled.....	81	bungalow.....	396
framing.....	357	vinyl half-elliptical.....	434	painting.....	281	channel rustic.....	395
gingerbread cornice.....	173	vinyl half-round.....	434	panel.....	80	clapboard.....	396
gingerbread header.....	171	vinyl quarter-round.....	435	redwood, custom milled.....	80	cleaning.....	44-45
molding.....	157-158	vinyl round.....	435	stain and varnish.....	281	Dolly Varden.....	396
screen.....	445	vinyl single-hung.....	436	walnut.....	81	painting.....	294
sill, cultured marble.....	423	vinyl sliding.....	436	Wood embossing.....	85, 151	shake or wood shingle.....	393
sill, cut stone.....	254	wood awning.....	439	Wood fence.....		shiplap.....	395
sill, tile.....	423	wood casement.....	439	basketweave.....	139	tongue & groove.....	395
skylight dome.....	442	wood double-hung.....	440	board.....	140	Wood skirting, mobile home.....	227
stool.....	158	wood elliptical.....	438	board with lattice cap.....	140-141	Wood steps, mobile home.....	225-226
stool, cut stone.....	254	wood fixed picture.....	441	board and batten.....	142	Wood trim, painting.....	287
surround.....	157	wood half-elliptical.....	437	board on board.....	141	Wood window.....	437
Windows.....	228, 431-447	wood half-round.....	437	cleaning.....	42	awning.....	439
aluminum.....	431	wood quarter-round.....	438	gate hardware.....	143	casement.....	439
aluminum awning.....	432	wood round.....	438	painting.....	286	double-hung.....	440
aluminum casement.....	432	wood single-hung.....	440	picket.....	142-143	elliptical oval.....	438
aluminum double-hung.....	433	wood sliding.....	441	posts.....	139	fixed picture.....	441
aluminum elliptical.....	432	wood, storm.....	445	seal or stain.....	286	half-elliptical.....	437
aluminum fixed picture.....	434	Wire mesh, flatwork.....	62	Wood floor.....	201-203	half-round.....	437
aluminum half-elliptical.....	431	Wiring.....		beech.....	202	quarter-round.....	438
aluminum half-round.....	431	120 volt runs.....	107	birch.....	202	round.....	438
aluminum quarter-round.....	432	240 volt runs.....	108	cherry.....	202	single-hung.....	440
aluminum round.....	432	circuit breakers.....	112	cleaning.....	43	sliding.....	441
aluminum single-hung.....	433	complete house.....	105	Douglas fir plank.....	203	storm.....	445
aluminum sliding.....	433	conduit.....	109	Douglas fir strip.....	203	Woodwork, mask.....	229
aluminum storm.....	444	electrical service.....	110	hardwood.....	201-203	Wool carpet.....	197
argon gas.....	431	exterior post light fixture.....	115	hickory.....	202	Workers' compensation (see also	
awning, mobile home.....	228	low-voltage runs.....	109	longleaf pine plank.....	204	Labor charts, each section).....	6
fixed.....	441, 443	outlet covers.....	106	longleaf pine strip.....	204		
glazing options.....	431	outlets.....	105-106	maple parquet.....	202		
grilles and grid.....	431	outlets, 240 volt.....	106	maple strip.....	201		
Low-E.....	431	outlets, low voltage.....	106	painting.....	292		
painting.....	296	Romex.....	110	red oak parquet.....	202		
reglaze.....	445-446	switches.....	106	red oak plank.....	202		
repair.....	446	switches, 120 volt.....	106	red oak strip.....	201-202		
skylight.....	442	switches, 240 volt.....	106	sand, edge and fill.....	204		

XYZ

X bracing.....	379
Yellow pine.....	360, 394
Z channel.....	102
Zero clearance fireplace.....	185-186
Zone control thermostat.....	213

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