

# CHAPTER 10 Costing & Contracting

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## **COST ESTIMATING**

Cost estimating will take you from the planning process into the organizational process. It can be a long and frustrating ordeal if not properly approached.

Major planning decisions should be made prior to costing. Things such as house design and size, construction specifications and desired quality should be determined. All of these decisions should be combined to create a complete set of blueprints with full specifications. These blueprints will provide the basis for all the cost estimates. You will probably need at least a dozen sets of blueprints to use for obtaining your costs. This will allow you to approach many different companies in a short time period, especially when you must leave the plans with the company to allow for an accurate price calculation. You will find that some of your plans will be returned with calculations scribbled all over them, covered with coffee rings, or not returned at all. Plan on getting enough “clean” sets for mortgage applications and building permit approvals.

Cost estimating is not the same as buying. Buying means that you are actually making an agreement to purchase materials or services, whereas costing is just preliminary information gathering. Do not go overboard badgering the companies for “discounts” or price breaks at this time because circumstances could change drastically by the time you are ready to actually sign a contract. Imagine if you had arranged for financing based on your lowest cost estimates, taking into account all the discounts, and then found that when you went to purchase your materials, the company was no longer in business, the material was no longer in stock, the tradesperson was too busy to handle your job, the expiry date on the estimate had elapsed, etc. This would put you in the situation of redoing your cost estimating and probably having to make some pretty drastic adjustments in your financial arrangements. Obtain reasonable cost estimates and plan to do your price dickering just before hiring the company. That will automatically create a small surplus in your financing which can be used as an emergency fund for cost overruns.

The only way you will know if you are getting a reasonable price is by shopping around. You should approach at least three different companies for any one item that you are pricing. The more companies you approach, the more information you will have for cost comparison and the better your chances of finding a good deal. This will also give you an idea of a good alternative company in case your first choice is unable to supply for the material or labour at the last minute.

How do you find all these subtrades and suppliers? You may work for one or be related to one. Your friends may have contacts for you. The companies may advertise in the classified ad section of a newspaper, in the yellow pages or on the door of their business car or truck. Once you start looking, you may be over-

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whelmed at the number of choices you have. For example, the Whitehorse yellow pages alone lists several cabinet companies, and this does not even include all the finishing carpenters who will custom build cabinets.

You could not possibly approach all of these companies, so you will have to somehow narrow the list down to a reasonable number. Possibly select the companies that are located closest to your building site. If you know someone in the construction industry, they may be able to direct you to some good companies. Some home builders issue a list of their subtrades and suppliers to their sales personnel. If there is a show home that you have been impressed with, the sales agent may be able to help you out with some names.

With any material supplier it is recommended that you spend some time looking at the products you are interested in purchasing. Most companies have some sort of a building consultant who can help you find what you are looking for and possibly present some better or lower priced alternatives. With lumber suppliers, in particular, you should walk around the yard and pay attention to the types of material and the general appearance of the stock. If the stock appears to be extremely weathered or in poor condition, you may not want to even bother obtaining an estimate.

Cabinets, floor coverings, electrical fixtures and windows are personal choice items which usually require a lot of looking before deciding on what you will want to include in a cost estimate.

Subtrade choices are a little more difficult because there is usually not a product handy for you to look at and judge. Therefore, it is important to get references and check them out. Try to make arrangements to see a job that is currently in progress. Some building supply companies will recommend subtrades, but you should still check on the quality of the work for yourself.

Another good way to find subtrades is by driving around construction sites and talking to the people working there. This will give you an excellent opportunity to see what kind of work each trade does. If the tradesperson takes pride in their work it will show. When checking on the subtrade's qualifications and reputation, keep these questions in mind:

- **What is the company's background?**
- **How long have they been in business?**
- **Is the company having any financial problems?**
- **Will they guarantee their work? Is it their policy to give refunds or exchanges?**
- **Where and when was the last job they did?**

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When checking with references be sure to ask about service. Did the trade show up when they said they would? Were there any problems with the job and, if so, did the subtrade correct them promptly? Remember, it is wiser to learn from others than to learn by your own mistakes.

Once you have found the companies from which you want to obtain cost estimates, you will have to sit down with them to discuss your house plans and explain any special items that may not be readily apparent on the blueprints.

Do not expect a contractor to read your mind. If it is not on the plan or specifically requested, they will not include it in their quote. Do not surprise them halfway through the job with changes or additional work and expect them to do it for nothing. Are any of the items to be supplied not in stock, requiring a special order? Be sure to find out the availability and how much advance order time is required.

Supply each company with identical plans and information. You cannot compare estimates otherwise. A subtrade or supplier can only provide a competitive bid when they know exactly what you expect.

Following is a list of items that should be included in any estimate:

1. **Company name, address and phone number.**
2. **Reference to you and your project**
  - a) your name
  - b) construction address
  - c) identification of your blueprints as being the basis for the estimate.
3. **Scope of work**

a statement that clearly defines all the work to be done, as well as listing what materials, tools, or equipment are being supplied by the Contractor.
4. **List of materials being supplied:**
  - a) quantity
  - b) quality and grade
  - c) type of material (brand names and model number).

**NOTE:** *An estimate is not necessarily a firm quote. Ask for a firm quote or contract prior to construction.*

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5. **Cost:**
  - a) unit price
  - b) labour and material cost breakdown
  - c) complete price.
  
6. **Payment terms:**
  - a) down payment, progress payments or lump sum payment
  - b) payment due (COD, 30 days, 60 days)
  - c) interest charged on overdue accounts.
  
7. **Special conditions:**
  - a) lead time required
  - b) estimated time required to complete job
  - c) site clean-up
  - d) workers compensation
  - e) permits and inspections
  - f) guarantees or warranties
  - g) any unusual circumstances.
  
8. **Expiry date: for how long is the estimate good?**
  
9. **Signature of accredited company representative.**

Now that you have all the information required for a good cost estimate, you are able to sit down, do some cost and service comparisons and come up with the companies that you will probably hire. It is a good idea to rate at least the top two companies so you will have a ready alternative.

It is important to remember when cost comparing that you do not “compare apples with oranges”, e.g. if you take your blueprints to two lumber suppliers for an estimate, according to their own material take off, one may show a price of \$2,000.00 less than the other. This is not necessarily an accurate comparison. The one that is lower may have a poor estimator who missed some material, and if you went by this price you would have a cost over-run of \$2,000.00 by the time you have bought all the material missed on the estimate.

A method to overcome this problem is to take estimates from three different suppliers and compare the materials to see if anything was missed or if the quantities

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vary drastically. Make a master sheet and list each item and the quantity. For example, two of the suppliers may have missed closet shelving material but the third one has it, or one company listed fifty fewer studs than the others. By cross checking the estimates you will find most of the items which may have been missed. This is a good time to compare the type or quality of materials as well. If, for example, one supplier is listing the price of his interior doors \$20.00 per door higher than everyone else, you should find out why. Possibly, the doors are much higher quality or of a different type than the other suppliers. The company may have bought their stock at a poor time and paid more or he may have just made a mistake when listing the price. On the other hand, if one supplier is quoting a price drastically lower than everyone else, you should check to ensure that they are not planning on supplying an inferior product. This comparison will allow you to find the real lower price.

Some simple math errors can also make an estimate appear very high or low. Check the extensions of the unit price as well as the column additions.

Tradespersons will often include the price for both material and labour in their cost estimate. It is your responsibility to ensure that all material is specified. You do not want to be surprised learning that you are responsible for some small items such as re-bar, snap ties, nails, etc. These small items add up fast and could cause a cost over-run. Try to have the estimate broken down so that you may determine the possible sweat equity value if you do the job yourself. It might also be cheaper to supply your own material, but you will not know unless you have a breakdown to compare with.

When discussing the estimate with the supplier or subtrade, make a written note of any verbal commitments. Your memory, or theirs, may not be as good as you think -especially a month later when the work is actually being done.

Do not forget to also compare services. How quickly can the subtrade make it out to your jobsite, are deliveries free, will they give you 30 day payment terms, etc.? In some cases, a company that is slightly more expensive will end up being the better company because of the other benefits offered.

The more time and effort put into cost estimating, the easier and quicker it will be to arrange financing, hire companies and keep construction under control and flowing smoothly.

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Be careful not to forget about some of the minor things that can add up to a lot of money.

### **Some hidden costs are:**

- Extra fill to be hauled to or from job site; levelling and spreading of fill.
- Provision for power; you may have to rent a power plant or have your power company supply temporary service.
- Pumping out flooded basement.
- Added interest costs on interim financing due to hold-ups because of weather, lack of trade coordination or lost time due to unavailability of materials.
- Extra heating costs if building in winter.
- Shortage of material in initial cost estimates.
- Material delivery costs.
- Theft of material from job site.
- Hauling away of refuse.
- Landscaping.
- Cost of blueprints.
- Legal fees such as land transfers, etc.
- Mortgage registration fees.
- Mortgage inspection fees.
- Fire and liability insurance during construction.
- Installation of stove, washer, dryer, dishwasher, etc.

### **Special rural area costs:**

- The cost of running power and/or gas from the property line to your house.
- The cost of building an approach road to your home.
- The cost of clearing the building site.
- The cost of a septic system and field system.
- Added delivery costs due to travel distance.
- Cost of drilling a well and a pressure system.
- Landscaping for site drainage.

**The following list shows construction items that must be cost estimated.**

### **Building Structure:**

- Surveying
- Excavating and grading
- Concrete
- Foundation wall labour
- Engineering (PWF) (may be required)
- PWF material
- PWF labour
- Dampproofing and weeping tile
- Basement floor labour
- Sand or gravel fill
- Lumber supply (floors, walls, roof)
- Framing labour

### **Mechanical and Electrical:**

- Water and sewer services
- Electrical service
- Heating fuel storage and service
- Plumbing
- Heating
- Electrical (including fixtures)

### **Building Envelope:**

- Windows and exterior doors
- Roofing material
- Roofing labour
- Soffits and fascia
- Siding
- Painting supplies and labour
- Stucco/brick and parging
- Eavestroughing
- Insulation and air/vapour barrier
- Exterior steps and sidewalks

### **Interior Finishing:**

- Drywall, taping and texturing
- Cabinets, vanities and countertops
- Interior doors and woodwork
- Finish carpentry
- Painting supplies
- Painting labour
- Ceramic tiles
- Floor coverings
- Miscellaneous hardware (mirrors, towel bars, door stops, range hood, medicine cabinet, etc.)

By making a detailed checklist of construction items to be costed, you can then add individual material or job specifications. This makes the preparation of a material quantity take-off and ultimately the job of cost estimating much easier.

Ideally, a cost comparison sheet could be prepared for each construction item. The sheet not only states the desired specifications but also allows for quantities and prices from different companies to be charted for quick comparisons. This will require a great deal of preparation work as there are more than 30 different items, but it does make for easier company selection and substitution when you are about to finalize your cost estimating.

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Allowances for non-construction items must be estimated and included in your overall cost total.

- contingency allowance (for missed, unforeseen or rising costs)
- blueprints
- building permits
- taxes
- legal costs
- fire and liability insurance
- interest costs for:
  - unpaid land balance
  - interim financing
  - mortgage draws
  - credit financing (lumber yard, etc.)
- mortgage insurance fee
- land

When obtaining estimates it is necessary to do some form of organizing and checking to ensure that you have not forgotten to price out something. You will also want to be able to quickly add up all your estimates to ensure that you are within your initial construction budget. To help with this you may want to create a “master sheet” which lists all individual construction and non-construction items showing the estimated cost and name of the selected supplier or subtrade.

For mortgage financing application purposes, you should condense this costing information onto a summary sheet similar to the following example.

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N E W C O N S T R U C T I O N C O S T S U M M A R Y

\$		<b>Survey</b>	
		Excavation, Backfill and Grading	
		< Foundation:.....	Concrete/Preserved Wood
		.....	Labour
		.....	Dampproofing and Weeping Tile
		< Basement Floor:.....	Sand/Gravel Fill
		.....	Concrete/ Lumber
		.....	Labour
		Framing Materials (subfloor, walls, roof/trusses, etc.)	
		Framing Labour	
		Windows and Exterior Doors	
		Roofing Material and Labour	
		Soffits, Fascia and Eavestroughing	
		Siding/Stucco/Brick and Parging	
		Exterior Steps and Sidewalks	
		< Services:.....	Water and Sewer
		.....	Electrical, Telephone, Cable T.V.
		.....	Gas/Propane
		Plumbing (including fixtures)	
		Heating	
		Electrical (including fixtures)	
		Drywall	
		Cabinets, Vanities and Countertops	
		Interior Doors and Woodwork	
		Finish Carpentry	
		Painting Materials and Labour	
		Floor Coverings	
		Ceramic Tiles, Bathroom Accessories, Miscellaneous Hardware	
		Other_____	
+		< <b>CONSTRUCTION COSTS</b>	
		Contingency Allowance	
		Blueprints, Permits, Insurance	
		Land	
+		< <b>SUBTOTAL</b>	
		Taxes, Legal and Interest Costs	
		Mortgage Insurance Fee	
+		< <b>TOTAL CONSTRUCTION COSTS</b>	
-		< <b>LESS: Down Payment</b>	
		Loan Amount (including MIF)	



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Do not be too surprised if you are way over budget the first time you add up your estimates. It is very common for people to initially select materials that are just too expensive. A little more research and investigation will usually turn up lower priced materials and subtrades. If the total costs are still too high, you will have to compromise and/or re-estimate some areas of your house. If worse comes to worse, you can also go for a size or design revision on your blueprints. Usually all you need is to catch your breath, grit your teeth and go back out there and shop around for some lower estimates.

When re-estimating, most people automatically go after the higher priced items such as framing materials or the mechanical trades. Quite often though, a small cost reduction of each of the lower priced items will add up to a more substantial saving without a loss in quality of the major construction components. Floor coverings and kitchen cabinets are very personal choice items that can easily put you a couple of thousand dollars over budget.

Another way to lower costs is by doing some of the work yourself. Remember that your main duty is construction management - as a boss would you hire yourself? Be as critical about letting yourself do work on the house as you would in hiring a stranger.

The more work you are able to put into your own home, the less you will have to pay someone else. But be careful not to overextend yourself. Time is a precious commodity that becomes very evident during construction. Family life, full-time job, construction management duties and even sleep all tend to “get in the way” when you are “sweating a job”. If the progress on your house is too slow you will end up spending more on interest and increased material costs. It may be a good idea to arrange your financing as if all jobs are going to be hired out. If you do any work yourself there will be additional funds for finishing details, furnishings, landscaping or even turning it back and applying it against the mortgage.

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Consider these points when planning to do work yourself

- Do you have the knowledge and ability to do a proper job?
- Are you able to do the job by yourself?
- Will you have to rely on the assistance of friends and relatives who may be too “busy” to show up?
- Will you have to buy or rent tools and equipment?
- When will you have time to do the job and how long will it take to complete (evenings, weekends, vacation)?
- Will a delay in completion of this job hold up other work on the house?
- If necessary, will it pass inspection the first time?
- If you do a poor job or get discouraged and quit, how much will it cost to hire someone to fix up or complete the job?

## QUANTITY TAKE-OFFS

A material take-off is a list of the quantity and quality of all construction materials needed to construct your house. You may want to obtain a quantity take-off from an experienced estimator or you can do your own quantity calculations.

Construction knowledge, ability to read plans, measure plans and some common sense are required to do a take-off. The ability to visualize construction (that is, to see the project being built in your mind) as you estimate will help tremendously.

There are three different reasons for obtaining a quantity take-off.

1. You may combine the take-off with other pertinent information for use as a cost estimate form. This allows for good cost comparisons as the companies will be quoting on identical quantities and materials.
2. A quantity take-off can be used as an evaluation guide to check on the accuracy of take-offs given by various companies. If large variances in quantities from different companies are evident, clarification should be

obtained. Some variances may identify a need to change the quantity estimate to an average value based on take-offs supplied by various companies. Doing this would give a more reasonable cost estimate for budgeting calculations. Company take-offs may also list sites that were overlooked in your own take-off. The missing items can then be added to your pricing requests.

3. The take-off can also be used as a reference when ordering materials during construction.

### **Material Count**

There are four basic quantity measures used when doing a material count:

- unit count (i.e. 4 doors)
- linear measure (i.e. 12 ft. baseboard)
- area measure (i.e. 1200 sq. ft. floor area)
- volume measure (i.e. 15 cu. yards of concrete).

You will need house plans, specification list, paper, pencils, scale and a calculator to do a material count. It is suggested that you break the house down into small segments, enabling you to concentrate on one area of the house at a time. Separate worksheets should be created for each of these areas. Then, it is just a matter of doing the necessary calculations and recording the information.

You can calculate quantities by the “accurate method”, but this is more complicated and usually requires detailed knowledge of the actual construction methods to be used. A “rule of thumb” calculation is much simpler and is usually close enough for estimating purposes.

A take-off calculation guide has been included if you decide to do your own material count. It does not cover all items of a house, but there is enough information to get you started. Be creative; you may be able to create your own shortcuts to calculate quantities quickly and accurately.

## TAKE-OFF CALCULATION GUIDE

### 1. CONCRETE FOUNDATIONS

#### ***Accurate Method***

$$\frac{\text{width (ft.)} \times \text{length (ft.)} \times \text{thickness (ft.)}}{27} = \text{cubic yards of concrete}$$

Using the above formula, calculate volumes for strip footings, telepost pads, walls and floor slab. Add 5%-10% for waste and uneven excavation. (Using 26 to divide by in the above formula also gives the extra material you need for a safety factor).

#### ***Rule of Thumb (for 8' x 18' footing and 8' x 8' wall)***

Footings

$$\text{circumference of basement} \times 20 = \text{cubic yards of concrete}$$

Walls

$$\text{circumference of basement} \times 5 = \text{cubic yards of concrete}$$

Rebar

$$\text{rows required} \times \text{circumference of basement}$$

### 2. FLOOR JOISTS

#### ***Accurate Method (16" o.c.)***

$$\text{Length of Wall} \times \frac{3}{4} + 1 + \text{extras} = \text{joists required on each side of basement beam}$$

#### ***Rule of Thumb (16" o.c.)***

$$\text{One joist for every foot of wall} \times 2 = \text{total joists required}$$

## 3. SUB FLOOR PLYWOOD (4' x 8' sheets)

### **Accurate Method**

*floor area - stairwells = covered area*

$$\frac{\text{covered area}}{32} + 2 = \text{sheets required}$$

### **Rule of Thumb**

$$\frac{\text{covered area}}{32} + 2 = \text{sheets required}$$

## 4. SUBFLOOR ADHESIVE

*(PL 400) 6 tubes per thousand sq. ft. floor area*

## 5. WALL FRAMING

### **Accurate Method**

Determine total wall length by adding together length of each wall and partition (including doorways and windows). Remember to calculate 2 x 4 and 2 x 6 walls separately.

Plates

$$\text{total wall length} \times 3 \text{ (+10\% for waste)} = \text{linear ft.}$$

Studs (16" centres)

$$\text{total wall length} \times 0.75 + 2 \text{ studs for each corner, intersection \& opening} = \text{number of studs required}$$

Studs (24 " centres)

$$\frac{\text{Total wall length}}{2} + 2 \text{ studs for each corner etc.} = \text{number of studs required}$$

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Headers (over doors and windows)

*Rough opening of each window or door opening + 3" x 2 = length of material*

Do this calculation for each opening.

Plates

*Total wall length x 3 = linear ft. in random lengths*

Studs (16" centres)

*One stud for every 9" of wall lengths*

Studs (24" centres)

*One stud for every 12" of wall length HEADERS*

**No Rule of Thumb - use accurate calculation**

## 6. WALL SHEATHING (4' x 8' plywood)

$$\frac{(\text{total perimeter} \times \text{wall height}) - \text{major openings}}{32} = \text{no. of sheets}$$

When ordering state: (1) span (outside wall to outside wall)  
(2) overhang  
(3) cantilever (large overhang), if any

Calculation (24" centres)

$$\frac{\text{length of wall in ft.} + 1}{2} = \text{trusses required including gable ends}$$

(May have to add on truss extra if chimney hits on a truss.)

## 6. **Wall Sheathing (Cont.)**

### **If Gable and Trusses are unsheathed**

*span of truss and height of truss = sheets of plywood needed  
to cover both gable ends*

Strapping

*2 x length of the house +6 lineal feet = lineal ft. of 1"x4" for truss strapping*

## 8. **ROOF JOISTS (Conventional Roof)**

*(length of wall supporting joists x 0.75) + 1 = number of joists required  
for each side*

*length of house x 4 = lineal ft. of 2x4 joist strapping required*

## 9. **RAFTERS (Conventional Roof)**

Calculate length required with calculator or draw a scale drawing, and measure length of rafter required, from ridge to end of overhang

*(length of house x 0.75) + 3 = no. of rafters needed for one side of house*

*length of house + 4 ft. = lineal ft. of material needed for ridge board  
(in 12' or 16' lengths)*

*$\frac{\text{total number of rafters ordered}}{2}$  = number of 14' collar ties needed*

## 10. **DRYWALL BACKING**

*length of all interior walls that run with ceiling joists = lineal ft. of 2x6  
backing required*

## 11. ROOF SHEATHING

Find ground area of roof which is area of the house plus all overhangs (2 ft. on each side)

Convert ground area to roof area by adding percentage determined by slope

3/12 +	3.0% of area
4/12 +	5.5% of area
5/12 +	8.5% of area
6/12 +	12% of area
8/12 +	20% of area

**ex. for 1200 sq. ft. house 30' x 40' with 4/12 slope**

*ground area is 34 x 44 ft. = 1496 sq. ft.*

*1496 + (5.5% x 1496) = 1578 sq. ft. roof area*

*$\frac{\text{roof area}}{32} + 2 \text{ or } 3 \text{ sheets} = \text{sheets of plywood required}$*

For cottage roof add 5 or 6 sheets for each cottage end

## 12. SHINGLES

### ***Accurate Method***

*$\frac{\text{total roof area}}{33} = \text{no. of bundles of shingles required}$*

*+ 1 bundle for each 33 ft. of hip or ridge*

*+ 1 bundle for each 81 ft. of eave starter*

1 roll of 6mm poly (40") starter strip for each 273 ft. of eave

### **12. Shingles (Cont.)**

#90 roll roofing (or poly start strip) for each valley.

If roll roofing, 1.5 times the length of each side of valley

1.25 lb. of fibergum per valley

#### **Rule of Thumb**

1 bundle per sheet of plywood

For low-slope roofs (under 4/12 pitch)

Calculate shingles needed as above, but use 235 lb. Low-Slope shingles

Starter Strip should be 45 lb. roll roofing tarred so that the shingles can be tarred to it

Also, need 1-1/4 gal. of roofing cement per 100 sq. ft. of roof area

### **13. PERMAX (Tar Paper) or TYVEK (Air Barrier)**

Total area of walls and gables

### **14. 16' POLY**

(For top plates and partitions butting to outside walls)

*Linear feet of walls = linear feet of poly required*

### **15. SIDING (Cedar)**

*perimeter of house x height of coverage - major doors or windows +20*

*Add Gable end area + 7 tubes of caulking per 1000 sq. ft. + 2-1/2" oval head galvanized siding nails at 15 lb./1000 sq. ft.*

## 16. STUCCO

Wire

*perimeter of house x height of coverage* = *sq. ft. of wire*  
(add gable end area)

15 lb. of 1-1/2" roofing nails per roll of wire

Stucco

$$\frac{\text{sq. ft. of wire needed}}{9} = \text{sq. yard of stucco required}$$

Add cost of parging (depends on type)

## 17. SOFFITS AND FASCIA

Fascia

*perimeter of roof at outside edge of overhang* = *linear ft. of fascia needed*

Soffits

*"J" channel - perimeter of outside wall of house* = *linear ft. of channel required + 1 extra*

$$\frac{\text{perimeter of roof at overhang} \times \text{overhang (2 ft.)}}{17} = \text{pieces of soffit material required}$$

## 18. WINDOW AND DOOR CASING

*(number of windows or doors + 1) x 20 = linear ft. required*

### 19. BASEBOARD

*length of outside walls + (2 x lengths of inside walls) = linear ft. of  
baseboard required*

### 20. INSULATION

*floor area = sq. ft. insulation required for ceiling*

Main floor walls

*8 x (perimeter of house - area of doors and windows) = sq. ft. insulation*

### 21. VAPOUR BARRIER

*area of walls and ceilings + 500 sq. ft. = sq. ft. of poly required*

### 22. DRYWALL

*floor area x 4 = estimate of sq. ft. of drywall required*

**drywall has to be ordered by what piece each wall needs**

Cement

3 - 25 lb. bags per 1000 sq. ft. drywall

Tape

4/S of a roll per 1000 sq. ft. drywall

Bead

Measure all corners and archways to be beaded and order by the piece (comes in 7 or 8 ft. lengths)

## 24. NAILS

### Basement and Joist

50 lb. 3-1/2" coated

### Subfloor

30 lb. 2-1/2" coated per 1000 sq. ft. floor area

### Framing

50 lb. 3-1/2" coated 50 lb. 2" coated for plywood  
5 lb. 3" finish nails for windows, doors and stairs

### Finishing

5 lb. 2" finish (shelf cleats, etc. ) 3 pkg. 15/8" colour finish

### Roofing

3/4 lb. 1" roofing nails per 100 sq. ft. of roof  
1 lb. 1-1/2" roofing nails per 40 linear ft. of ridge

### Drywall

10 lb. 1-1/4" ringed drywall nails per house  
10 lb. 1-1/4" drywall screws per house

## CONTRACTS

After all the preparation work of cost estimating and selecting the “right” contractor, you will probably want to take some precautions to ensure that you obtain a good quality job for the money you pay. Are you sure you will get what you want? If someone is injured on the jobsite, will you be liable? Will the job be finished on time?

Most contractors are reputable business people, and you will probably take great pains to hire those who are competent and honest. Even so, misunderstandings and disagreements may arise. That is why a construction contract is so essential. Although most people ask for an estimate, they sometimes neglect to develop a firm contract between the contractor and themselves. A well thought out, fully documented agreement can serve both parties. It will provide a mutually agreed-upon framework for the performance of duties, the resolution of disputes and payment procedures.

A contract is an agreement between two parties which creates an obligation to do or not to do a particular task. A basic contract consists of an offer, an acceptance and a “consideration” (payment, monetary or otherwise, that will be made for services rendered). The offer is an invitation or request by one person which, if accepted, creates duties and obligations for both parties.

The contract may be either oral or written. Oral contracts have the obvious advantage of being simple, quick and inexpensive. Time is an oral contract’s worst enemy. As time passes, memories fade and details become hazy. The people involved tend to remember only what they want to remember.

Written contracts are a better idea. Remember, it is the agreement which is the contract, whereas the writing is only evidence of that agreement. With respect to building contracts, there is no legal requirement that they be in writing. However, because of their complexity and from a practical point of view it is imperative that the agreement be evidenced by writing it down. Some contractors may protest that their personal integrity is being questioned if they were made to sign a written contract. Very few contractors have a reputation so beyond reproach that their word alone is sufficient. If you cannot get it in writing, perhaps it would be wise to find another contractor. Writing it down also

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clarifies or brings forth misunderstandings, brings undressed concerns forward, and becomes essential in the event of a dispute.

Due to the legally binding nature of the contract once it is entered into, it is most important that the meaning of each term be fully understood. Read the contract including the small print and the reverse sides. Understand the contract; ask questions if in doubt. A contractor may supply a contract, you may obtain a fill-in-the-blank construction agreement or you may write the contract up yourself.

While there is no single perfect kind or form of contract, all good construction agreements should specify the following items.

- The date on which it is signed.
- The date that work is to be commenced, the estimated time to complete construction and the date by which work must be completed; also any penalties for non-compliance.
- Identities, addresses and phone numbers of the parties.
- Location of the property where the work is to be done.
- A detailed description of the work to be performed, either by description within the agreement or by reference to existing plans and specifications or both.
- The labour, materials, tools and equipment to be provided by the contractor and those, if any, to be provided by the owner. The list of materials should include colours, grades, qualities and possibly brand names and model numbers.
- The total price or a simple, non-disputable means of calculating the cost of labour and cost of material.
- The method and terms of payment. If payments are to be spread over the course of construction, the details as to when and in what amounts each payment will be due.

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- A statement of any guarantees or warranties respecting the quality of work and material.
- How changes are to be handled. Any deviation from the written description, plans or specifications should be documented and approved.
- A statement whereby the contractor agrees to respect the norms of municipal and provincial building codes as well as established national residential construction standards. This should include the obtaining of all necessary permits and compliance with all local by-laws and working regulations.
- What happens in the event one party breaches the contract (i.e. interest penalties, forfeiture of deposit, etc.).
- Signature of both parties: you and the contractor.

### **It is also a good idea to include statements to the effect that:**

- The contractor will obtain insurance to protect the homeowner (yourself) from any liability resulting from the work.
- The contractor will clean up and remove debris from the site after completion of the work.
- The contractor will repair or replace property damaged by him in the course of his work.

You may decide to seek the services of a competent construction lawyer to assist with the preparation of a contract or to review your contract. Often an attorney will, for a small fee, review a contract for the essential terms of coverage and protection prior to signing. You should consider this cost of legal services as just another element of construction, like building permits or insurance.

A deposit is a commitment and is not refundable unless the contract clearly and unequivocally states that it will be. If you need to make a deposit, keep it as small as possible. Never prepay anything in full; arrange to pay for work actually com-

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pleted as it is done, and then only after a proper inspection. Do not make the final payment once the work has been completed. Check your Certificate of Title at the Land Title Office for a lien. If no liens are filed within the 30 day lien period, then you can make the final payment.

### LIENS

You may find a lien registered against your property if you have not paid someone for their services or for supplies provided, or if you have paid a contractor for work to be done by a sub-contractor or tradesperson employed by him, or for materials to be provided by a supplier and he has not paid for these services and supplies. You may even have to pay twice for the same thing. That is why checking on the reputation of a subcontractor or supplier is so important. A wage-earner or someone renting equipment to a contractor or sub-contractor may also file a lien for wages or rent owing.

The Builders' Lien Act assists the homeowner by stipulating that he or she has the right to withhold 10% of the value of the work done for 30 days after completion or abandonment. This is called the lien or "holdback" fund which the homeowner is expected to use to pay-out or discharge all or any part of a lien that may be registered within those 30 days.

Once a lien is registered against your property you will not receive further draws from the mortgage company. You can protect yourself by dealing directly with all parties involved, arranging for the materials yourself, etc. Should a problem occur, the first step would be to attempt to settle directly with the affected party. If this is impossible and you wish to discharge the lien quickly, legal advice should be obtained.

Without a doubt, the best policy is to never receive a lien. There are a number of precautions that you can take:

1. Hire only reputable tradespersons.
2. Establish and maintain good lines of communication with your trades persons. A detailed contract is an excellent communication tool.

3. Some companies pay the supplier directly for all materials provided by their tradespersons. An alternative would be to make cheques payable jointly to the tradesperson and their supplier or subcontractor. You must first gain consent from the Contractor should you wish to use this method.

### **INSURANCE**

Contractors and subcontractors who employ workers are required by law to cover those workers with Workers Compensation. If they fail to do so, Workers Compensation can collect the insurance premiums from the homeowner. You should ask your subtrades for a “Workers Compensation Clearance” prior to advancing them their final payment. This clearance is a letter from Workers Compensation stating that their account is paid up to date. This will ensure that you are not left owing workers compensation for your subtrades debt.

During construction, it is also prudent to obtain liability construction insurance to cover injuries and damage around the job site. This insurance can be provided by your agent when you obtain fire insurance and will cover visitors falling, children injuring themselves on your site, materials blowing into and damaging someone else’s property, etc. A small extra cost here can constitute a huge saving if anything should happen.