



American basswood

Black cherry

Black walnut

Northern red oak

Sugar maple

White oak

Yellow birch

Yellow poplar

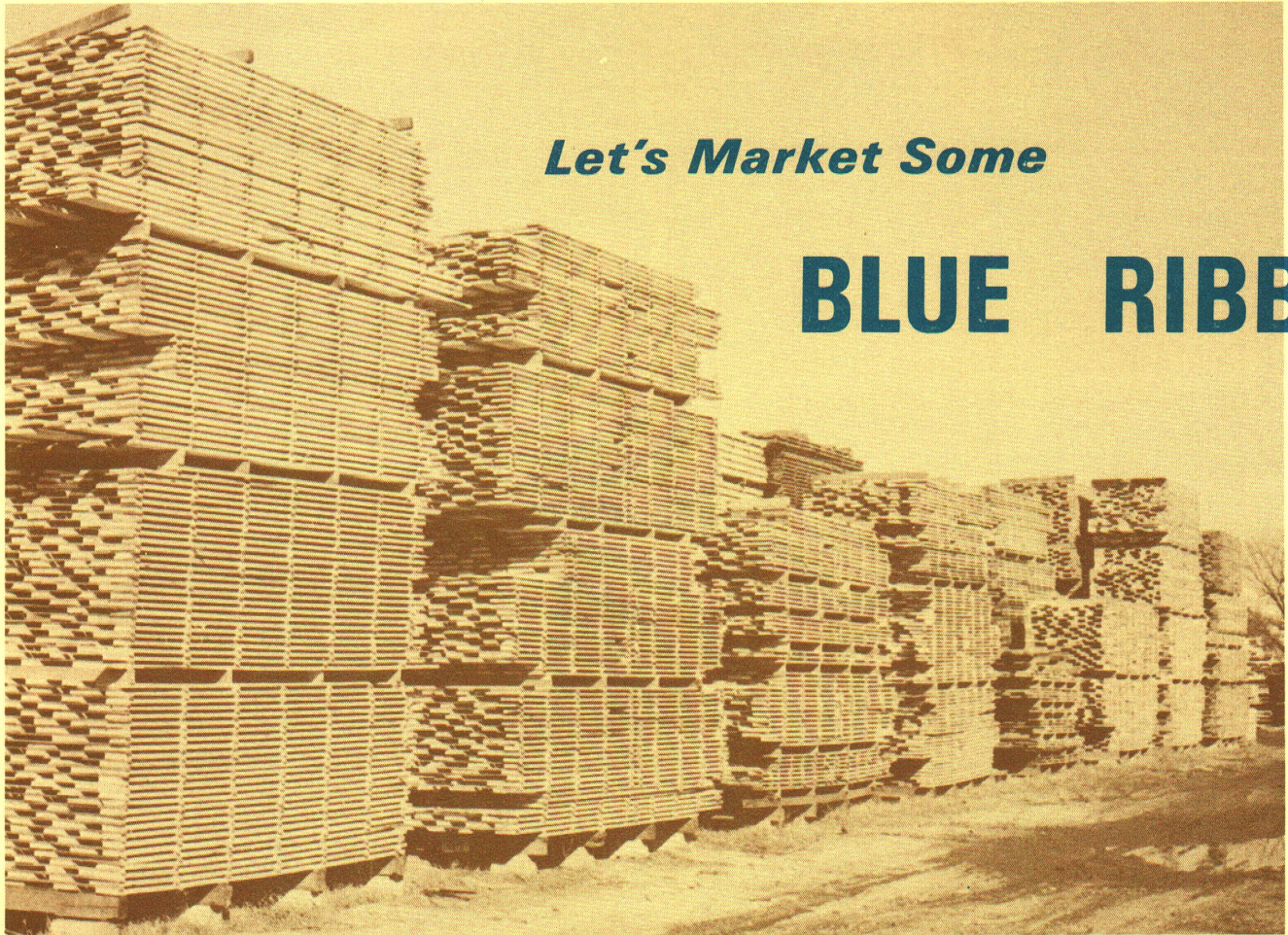
"LET'S MARKET SOME"

# BLUE RIBBON HARDWOODS

No. 6 of a Series

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*Let's Market Some*

# BLUE RIBBON

Figure 1 — Hardwood lumber from the Blue Ribbon species is highly prized by the furniture industry. Here, lumber is stacked for air-drying prior to being kiln-dried.

WITHIN the past few years there has been increasing concern from foresters and others involved in wood production for the diminishing supply of high quality sawlog and veneer-log material. Increased demand by furniture, veneer, paneling and other industries have brought premium prices for select hardwoods, such as yellow birch and black walnut. Other "Blue Ribbon" hardwood species, which are also highly valuable to these same industries, include American basswood, black cherry, northern red oak, sugar maple, white oak and yellow poplar.

Since early in the life of this country, fine hardwoods have been highly prized for furniture, cabinetry, interior trim, veneer, plywood, flooring and industrial uses. Today they are in greater demand than ever due to widely expanding uses (Fig.'s 1 and 2). To supply this demand and take advantage of favorable markets, many forest land owners have sold their quality old-growth timber and are now engaged in producing premium quality logs from second-growth stands. The application of good forest management

practices to existing woodlots, such as protection from fire, grazing and insects, and thinning and removal of diseased or damaged trees, will result in increased production of high quality timber. In addition to working in existing woodlots, some landowners may wish to plant highly valuable species such as black walnut to provide for greater demands in the future.

This publication, the last in a series of six on Blue Ribbon Hardwoods, is designed to assist landowners in realizing maximum potential for quality logs they have produced. Suggestions for proper felling, logging and marketing procedures are offered. Other preceding publications in this series have dealt with such topics as planting, fertilization, weed control, thinning and general management information. (See Extension Bulletins 620, Let's Grow Some Blue Ribbon Hardwoods; E 621, Let's Meet Some Blue Ribbon Hardwoods; E 622, Let's Plant Some Blue Ribbon Hardwoods; E 623, Let's Accelerate Some Blue Ribbon Hardwoods; and E 624, Let's Manage Some Blue Ribbon Hardwoods.)



# HARDWOODS

By MELVIN R. KOELLING  
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## KNOW WHAT YOU ARE SELLING

One of the first steps in logging and marketing sawlogs and veneer log timber is selecting and marking trees to be harvested. While this may be done by the landowner, a competent forester should be consulted to keep the woodland in a state of continual productivity. In most areas, this service is available from local farm or area foresters who are employed by the state.

After the trees to be cut are marked (preferably at the stump and on the first log with a tree marking paint), an estimate should be made of the volume of wood that is to be removed. This will be of value in advertising the trees to proposed buyers and will provide the landowner with information from which he may obtain an indication of potential value. Where several species are represented in the trees marked, separate volume estimates, by species, should be prepared.

To estimate the volume of standing timber, it is necessary to determine the number and size of logs that can be cut from each tree. Sawlog timber is commonly sold on a board-foot basis and estimates are made accordingly. (One board foot is equal to the volume of wood contained in a 12-inch by 12-inch piece of wood, one-inch thick.) Since board-foot volume of a log is influenced by diameter and length, it is necessary to determine these dimensions in order to obtain an estimate of volume. In measuring the standing tree, diameter is measured in inches at a point 4½ feet above the ground (diameter breast high — d.b.h.) and tree height or number of standard logs present may be estimated or measured with a cruising stick or appropriate instrument. Height is measured in terms of the number of 16-foot logs or half-logs present. For example, a tree with a 24-foot bole would contain 1½ logs. Board-foot volume, of course, would be influenced by the diameter of the tree. A tabular presentation of board-foot volumes, for standing trees of varying diameters and heights is shown in Table 1, page 8.

Many different kinds of log rules are available for determining estimates of log volume after the tree is felled. The International ¼-inch rule gives values very close to the actual yield of the log when sawed into lumber. Other log rules are available, however some, like the Doyle, are inaccurate on small diameter logs. An illustration of board-foot values for logs of varying diameters is shown in Table 2, page 8 (International ¼-inch Scale — all logs 16 ft. long). Using this table, a 16 ft. log, 16-inches in diameter at the small end would contain approximately 180 board-feet of lumber.

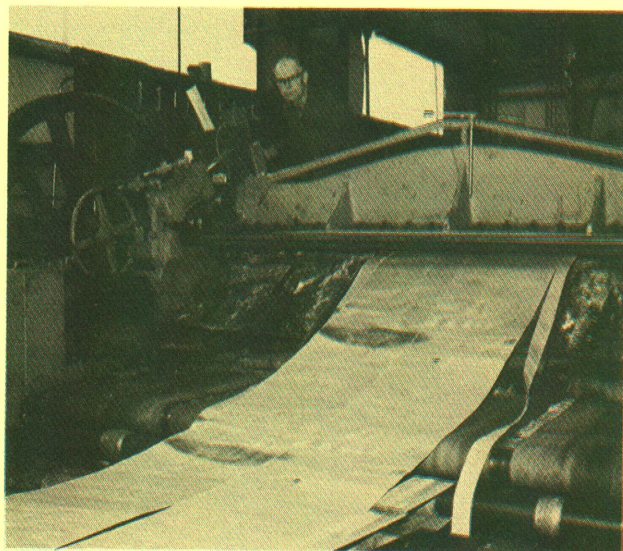


Figure 2 — A rotary lathe cuts many square feet of thin veneer from a single log or bolt. For rotary cutting, the bolts must be sound, and free from defects or foreign materials.



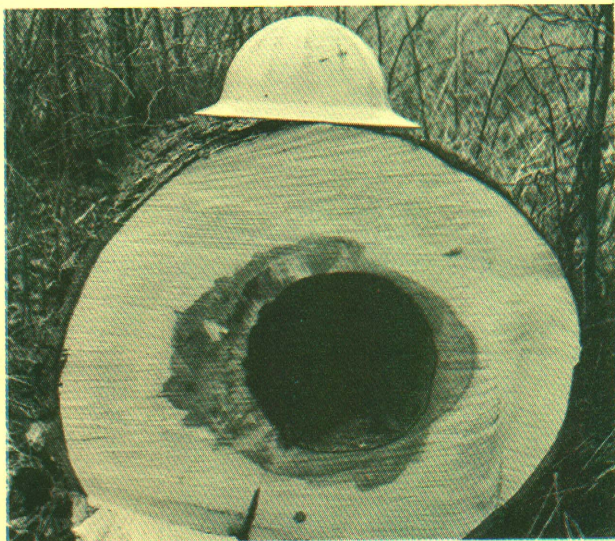


Figure 3 — Not all large diameter trees are sound. This hollow log will yield some clear lumber from the outer edges, but volume and quality are greatly reduced by wood decay in the center.

When selling many of the Blue Ribbon trees, it may be desirable to maintain a record of log quality in addition to volume estimates. Sound, defect-free logs of large diameter may be worth several times as much as normal “woods-run” logs (Fig.’s. 3 and 4), especially with very high value trees, such as black walnut or yellow birch. Knowledge of this fact by both the seller and purchaser can greatly increase the sale price of such logs.

#### FOLLOW GOOD LOGGING PRACTICES

The quality and value of many high-value trees has been reduced through carelessness in harvesting and improper logging techniques. Every precaution should be observed so that the potential value of the Blue Ribbon Hardwoods is not lowered during harvesting operations. While many buyers of saw-log and veneer-log timber prefer to provide their own logging crews, other landowners may wish to fell their own trees and then sell them. Regardless of who does the logging, a few general guidelines should be followed.

An essential part of proper harvesting is to cut the tree as low on the stump as possible. Leaving high stumps can result in several board feet of lumber left in the woods. This is a particularly wasteful practice, since in most trees, the highest quality wood is found in the lower portion of the butt-log. Harvesting black walnut and black cherry trees may mean digging



Figure 4 — White oak, veneer logs harvested from a southern Michigan woodlot. Such logs should be sorted from regular sawlogs and held for a veneer buyer. They are far more valuable when cut into veneer than lumber.

away the soil from the base of the tree and felling the tree at a point below the ground level. This would be especially true if highly figured wood were present (Fig. 5). In some cases, walnut stumps remaining from earlier logging activities have been harvested to obtain additional volumes of valuable figured wood.

The first step in felling a tree is to determine where the tree should fall. Generally, trees should be felled in a direction that will result in minimal damage to the falling tree and to the residual forest stand around the tree. Leaning trees are most conveniently felled in the direction of the lean.

After selecting the direction of fall, an undercut should be made to assist in felling and to reduce damage to the trunk during felling. “Barber-chairs” and splits in the butt log will greatly reduce log value (Fig.’s. 6 and 7). An undercut involves cutting one-fourth to one-half of the way through the tree and removing a small wedge of wood to provide a natural inclination for falling. On high value trees, such as walnut, an unusually deep undercut may be necessary to reduce damage due to the natural splitting tendency of the wood. When possible, the undercut should be made from the stump, and not the log portion of the tree (Fig. 8).

Splits and breakage in the upper portion of the bole may occur when felling trees with very large branches in the crown. The direction of fall should be carefully determined so that the force with which the crooked limbs strike the ground is equalized over the entire length.





Figure 5 — Highly valuable, figured wood is obtained from sound crotches and burls as seen on this black cherry tree. For greatest return, such trees should be harvested by digging out the entire lower log with stump attached.



Figure 7 — Pulled-grain caused by an improper undercut and poor felling technique has resulted in the loss of many board feet of valuable hardwood.

Damage to trees, which will remain in the forest after harvesting, should be considered at the time of felling. Much damage to the residual stand could be avoided by careful selection of felling direction and subsequent care in felling and skidding. Young trees are frequently injured unnecessarily in logging operations. Such injuries may reduce the growth rate of the trees, expose the tree to wood decaying fungi and thus lower quality or alter the form of the tree so that crooked or forked logs are produced.



Figure 6 — “Barber-chair” damage — usually results from too shallow an undercut on leaning trees. Such damage wastes a great deal of valuable wood.

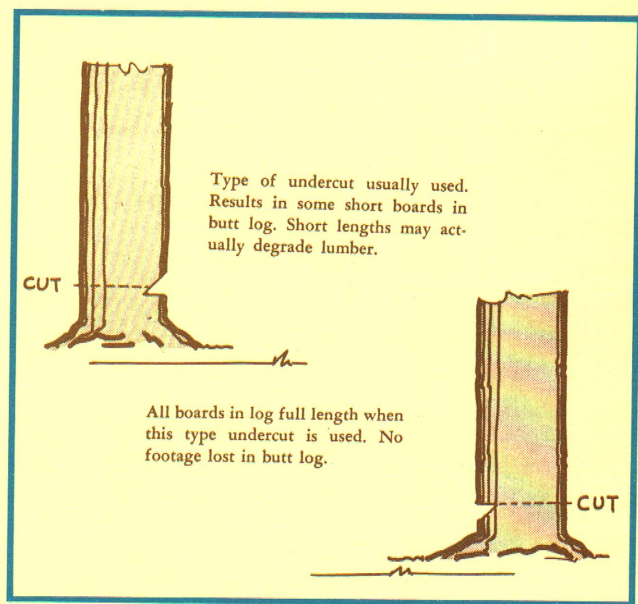


Figure 8 — Diagrams of types of under-cuts usually used in felling trees.

### Bucking the Tree

Bucking or cutting the tree into log lengths can be done in the woods where the tree has fallen or the tree may be skidded out to a central landing and cut into the desired lengths. When the entire bole is skidded to a central landing, care must be exercised to reduce damage to young trees in the remaining stand. The use of skid trails and roads tends to restrict damage to a minimal area.



Total value of the logs in a tree can often be increased through care in cutting the trees into log lengths. Since there is usually a choice of lengths into which the logs may be cut, special care should be given to produce lengths of the highest value possible. Standard saw-log lengths usually run from 8 to 16 feet with intermediate cuts at 2-foot intervals. Veneer logs may often be cut to a specific length as required by the processor. This length should be determined before bucking high quality trees into logs.

In addition to cutting into standard lengths, logs should be cut so they are of the highest possible quality. Such defects as excessive sweep, crook, decay, insect damage, in-grown metal, knots etc., will lower log quality (Fig. 9). Some of these defects may be eliminated or reduced by careful location of the bucking cut. Some general guidelines for maximizing log quality:

1. Make the butt log as free of defect as possible (especially with black walnut).
2. Cut into lengths as sound and straight as possible.
3. Cut at crooks, crotches, knots, where feasible.
4. Cut and leave badly decayed sections of the tree in the woods.
5. Include a trim allowance of 3-inches for each log.

A diagrammatic illustration of bucking procedures for trees of varying conditions is shown in Fig. 10.



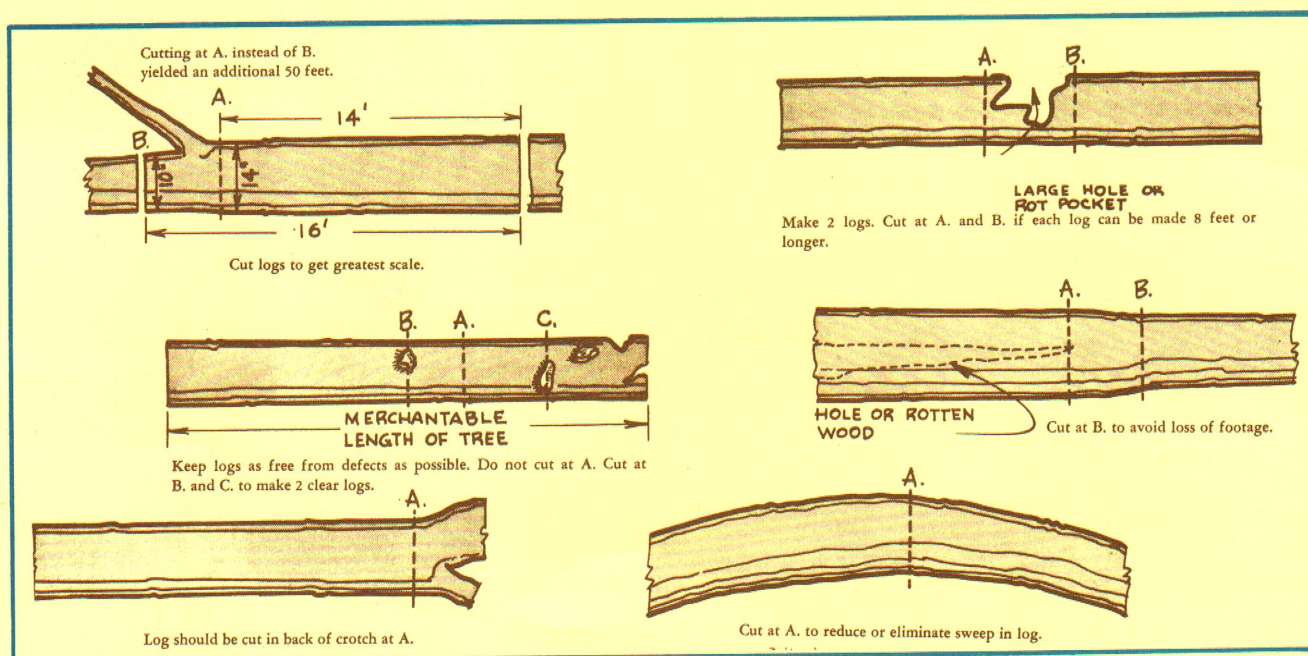
Figure 9 — Fence-row trees lose much of their value because of likelihood of ingrown wire, nails, metal signs, electric fence insulators, etc. Ingrown wires make these black walnut trees of little or no value for veneer or lumber.

### LOCATING MARKETS

Unless there are extenuating circumstances, trees should be harvested only to fill a specific purpose or market. Harvesting sawlog or veneer-log timber and then locating a market may result in lower prices due to slow current market conditions or material cut to improper specifications.

Markets are nearly always available for Blue Ribbon saw-log and veneer log material. In some areas, local mills have standing orders for saw-logs and will buy when delivered to the mill. Other concerns have buyers who cover a designated area. Sometimes rep-

Figure 10 — To minimize loss from branches, defects or sweep, cut trees to obtain logs of the highest possible grade.





representatives of major sawmills and veneer mills are present in the area to secure supplies of raw materials. Unless such a market exists, the landowner who wants to sell timber should contact the local area forester or local county extension office for help in contacting buyers.

While logs should be cut to achieve the highest grade possible, they should also be graded and sorted so that each log is directed to the highest possible use. Veneer quality material should always be sorted separately. Large veneer logs of most Blue Ribbon Hardwood species are worth two to three times their value as sawlogs. Technical assistance in grading can usually be obtained from sawmill operations or from the local area forester or extension office.

### METHODS OF SELLING

There are several methods of selling saw-log and veneer log timber — each with advantages and disadvantages. In the past, many forest land owners have sacrificed much of the value of their timber because they were not aware of its value. However, since greater demand and higher prices have been present, more accurate values are commonly received.

The selling method chosen is often influenced by the kind of timber present and local market conditions. Single-tree sales are not uncommon for black walnut, while diameter limit, log scales and lump-sum sales have been used for other size woodlots. A more common method consists of selling by log tally.

#### Lump-Sum

Although they may be the most convenient, lump-sum sales are usually the least desirable from the landowner's viewpoint. The buyer is often more knowledgeable about timber values and can take advantage of the inexperienced seller. If the lump-sum method is used, the landowner should have an estimate of the volume present and reach an agreement with the buyer regarding restrictions in the method of logging. The use of competitive bids from two or more buyers will enable the seller to receive a more equitable value for his trees. This is especially true when selling single trees or small lots of timber such as black walnut.

#### Log Scale

Standing trees may be sold by log scale that is determined after they are felled and cut into log lengths. Such a method is fair to both seller and buyer if agreement concerning cutting specifications is reached

prior to felling — which trees are to be taken and prices to be paid for logs of varying size and quality. Instead of using an average or woods-run price per unit of measure (usually, per thousand board-feet) a schedule should be followed. This would include prices for logs of differing diameters, length and grade. Provisions should also be included for quality logs of the very high-valued species, such as yellow birch or black walnut.

Other localized methods of selling, such as by count, by lumber tally and custom sawing, are usually done on an individual basis between the seller and buyer.

### TIMBER SALES CONTRACTS

To avoid misunderstandings and eventual disagreements between the seller and buyer, a written timber sales contract should be prepared and in force for every transaction involving standing trees. Such a contract should include:

1. A description and location of the timber to be sold.
2. Method and means of determining volume.
3. Dates and limitations of contract — beginning and termination.
4. Price, time, and manner of payment to be received.
5. Conditions for cutting and removal of the logs.
6. Title and means for settling disputes.

An example of a satisfactory timber-sales contract, is shown on page 8.

### REFERENCES

- Anonymous, 1958. Measuring and Marketing Farm Timber. U.S.D.A. Farmers Bulletin #1210.
- Anonymous, 1967. Growing Walnut for Profit and Pleasure. Unnumbered Publication, American Walnut Manufacturer's Association, Chicago.
- Brush, W. D., 1959. Selling Black Walnut Timber. U.S.D.A. Farmers Bulletin #1459.
- Simmons, F. C., 1962. Logging Farm Crops. U.S.D.A. Farmers Bulletin #2090.
- Wackerman, A. E., 1949. Harvesting Timber Crops. McGraw-Hill Book Company, New York.

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## TIMBER-SALES CONTRACT

Agreement entered into this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_, between \_\_\_\_\_ of \_\_\_\_\_ Name \_\_\_\_\_, Michigan, hereinafter called the seller, and \_\_\_\_\_ Name \_\_\_\_\_ of \_\_\_\_\_, Michigan, hereinafter called the purchaser.

The seller, having the right to sell, agrees to sell to the purchaser all timber that has been marked on both trunk and stump area with \_\_\_\_\_, located in the \_\_\_\_\_ of Section \_\_\_\_\_, Township \_\_\_\_\_ North or South, Range \_\_\_\_\_ East or West, \_\_\_\_\_ County, State of Michigan, subject to the following terms and conditions:

(1) The purchaser agrees to pay the seller the sum of \_\_\_\_\_ (\$\_\_\_\_\_) for said timber. Method and time of payment shall be as follows: \_\_\_\_\_

(2) All timber included in this agreement shall remain the property of the seller until paid for in full.

(3) Unless an extension of time is granted by the seller, this contract shall terminate on \_\_\_\_\_, 19\_\_\_\_, with all rights to remaining timber and products reverting to the seller unless otherwise specified in paragraph 7.

(4) Unmarked trees shall be protected against unnecessary injury, and no unmarked trees shall be cut. Care shall be exercised at all times by the purchaser and his employees against the starting and spreading of fires.

(5) Damage to fences, crops or other property resulting from negligence on the part of the purchaser or his employees shall be replaced, repaired or compensated for by the purchaser.

(6) In case of dispute over the terms of this contract, final decision shall rest with a reputable person to be mutually agreed upon by the parties to this contract, and in case of further disagreement, with an arbitration board of three persons, one to be selected by each party to this contract, and the third to be selected by the first two members of the board.

(7) Special provisions \_\_\_\_\_

Witness(es): \_\_\_\_\_

In Witness Whereof the parties hereto have hereunto set their hands and seals this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_.

\_\_\_\_\_  
Signature of Seller

\_\_\_\_\_  
Post Office Address

\_\_\_\_\_  
Signature of Purchaser

\_\_\_\_\_  
Post Office Address

**TABLE 1 — Estimating Board Feet of Standing Trees\***

Diameter Breast High (inches)	Number of 16-Foot Logs				
	1	1½	2	2½	3
	(Board Feet)				
10	39	51	63	72	80
12	59	78	98	112	127
14	83	112	141	164	186
16	112	151	190	223	256
18	144	196	248	292	336
20	181	248	314	370	427
22	221	304	387	458	528
24	266	368	469	556	644
26	315	436	558	662	767
28	367	510	654	779	904
30	424	591	758	904	1050

\*Projected estimate based on d.b.h. and number of 16-foot logs present using International ¼-inch log rule.

**TABLE 2 — Estimating Board Feet of Standard Logs\***

Top diameter inside bark (inches)	Board Feet	Top diameter inside bark (inches)	Board Feet
6	20	24	425
8	40	26	500
10	65	28	585
12	95	30	675
14	135	32	770
16	180	34	875
18	230	36	980
20	290	38	1095
22	355	40	1220

\*Based on diameter inside bark at small end of 16-foot logs using International ¼-inch scale.

### FOR ADDITIONAL ASSISTANCE

**For educational assistance:**

— Your local County Extension Director — Cooperative Extension Service

**For on the ground forestry advice:**

— Your local Area Forester — Michigan Department of Natural Resources

**For soils work or site selection:**

— Your local Soil Conservationist — County Soil Conservation District — U.S. Soil Conservation Service

**For financial assistance:**

— Your local county office of the Agricultural Stabilization Committee — Agricultural Conservation Program

**For information on forestry and tree farming:**

— Extension Forester, Cooperative Extension Service, Michigan State University, East Lansing, Michigan 48823

— The American Forest Institute, 1835 K Street, N.W., Washington, D.C. 20036

— The Fine Hardwoods Association, 666 North Lake Shore Drive, Chicago, Illinois 60611

— The American Walnut Manufacturers Association, 666 North Lake Shore Drive, Chicago, Illinois 60611