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COMPACT

**TARIF TABLES FOR
MOUNTAIN HEMLOCK**

DEVELOPED FROM AN EQUATION OF TOTAL
STEM CUBIC-FOOT VOLUME

**J.F. BELL
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SUMMARY

In this study, tarif access tables have been formulated as a means of obtaining volume estimates for mountain hemlock [*Tsuga mertensiana* (Bong.) Carr.] on the Deschutes National Forest in the central Cascade Mountains of Oregon. The tables are designed to be used in conjunction with the Comprehensive Tree-Volume Tarif System developed by the Washington State Department of Natural Resources.

A sample of 98 trees and least squares regression technique were used to calculate an equation for cubic-foot volume, which is essential in formulating tarif access tables. Equations for the tarif system have also been used to formulate tables for cubic-foot and Scribner board-foot volume.

INTRODUCTION

Recently, interest in future timber supply and wilderness preservation has focused attention on high-elevation areas of marginal productivity, and on a species found in abundance in such areas, mountain hemlock [*Tsuga mertensiana* (Bong.) Carr.]. Though tree-volume estimation is an important tool of the forest manager in all aspects of planning, volume equations and

tables for mountain hemlock have not been available. The objective of this study was, therefore, to develop tariff access and volume tables for mountain hemlock from data collected on the Deschutes National Forest in the central Cascade Mountains of Oregon. In the process, an equation for total stem cubic-foot volume was developed.

DATA COLLECTION

Ninety-eight trees were sampled throughout the range of mountain hemlock on the Deschutes National Forest. Forty of these were collected as part of a productivity study (Johnson 1981, unpublished) that covered a wide range of site quality, soil type, and elevation. On each plot, the tallest dominant tree with no apparent disease or damage was sectioned at 2-meter intervals along the entire bole as well as stump and also at breast height (approximately 4.5 ft). Diameter was measured both outside and inside the bark. Height was taken from the ground to the bottom of each section and from the ground to the tip.

The other fifty-eight trees were measured to give more complete representation of

diameter and height classes and to increase the data base (Table 1). These were located near the sectioned trees and thus covered the same range of site conditions. Individual trees were selected arbitrarily from the healthy, undamaged component of the stand and measured at stump and breast height. In addition, an average of five upper-stem measurements were made of each of these trees with a Barr and Stroud optical dendrometer. Segment diameter and length were calculated from the readings with a program written for a Hewlett-Packard 97 calculator. The optical dendrometer provided a quick and accurate way (Bell and Groman 1977) of increasing the data base with nondestructive sampling.

VOLUME COMPUTATION

Inside-bark cubic-foot volume including top and stump (CVTS), was calculated with a program written for a Hewlett-Packard 9830A calculator. Inside-bark diameter for the 58 trees measured by dendrometer was found with an equation for bark thickness that was developed from the sectioned-tree data through least squares regression by Craig A. Hendricks, School of Forestry, Oregon State University:

$$DIB = -0.608178 + 0.895169 DOB$$

where DIB is diameter inside bark, and DOB is diameter outside bark at the same point along the tree stem. The coefficient of determination (r^2) is 0.9976 and the mean square residual (MSR) is 0.703904 or ± 0.84 inches. Regression was tried with a height variable; however, it did not contribute to the equation.

Cubic-foot volume was calculated for the segments from various rules (Dilworth 1980, p. 26-29). The stump was treated as a cylinder. Sections within the first 20

TABLE 1. NUMBER OF TREES OF EACH DIAMETER AND HEIGHT IN THE SAMPLE

DBH (in.)	Height (ft)										Total
	30	40	50	60	70	80	90	100	110	120	
7	2										2
8	1	1									2
9		3	1								4
10			2	3							5
11											
12			3	2							5
13					3						3
14			1	2							3
15					5		1				6
16					2	2					4
17					3		1	1			5
18						3		1			4
19					3	3					6
20						3	2	1			6
21						2	1	2	1		6
22					1	1	2	1	1		6
23						2	2	1			5
24						2	1	1			4
25					1		1	2	3		7
26						1	1				2
27								2			2
28							1	2			3
29							1	1			2
30								1			1
31											
32						1					1
33											
34								1			1
35											
36									1		1
37											
38											
39											
40											
41											
42									1		1
43											
44											
45											
46											
47											
48											
49											
50									1		1
Total	3	4	7	7	18	20	14	17	8		98

percent of the total tree height were assumed to be frustums of a neiloid; therefore, the two-end conic formula was used. The assumption was tested with graphical analysis of profiles of the 40 sectioned trees and of some of the 58 supplemental trees as plotted by a Hewlett-Packard 9826A plotter. Plottings supported the finding of Demaerschalk and

Kozak (1977) that the inflection point of change of the tree form from neiloid to paraboloid falls between 20 and 25 percent of the total height from the ground, regardless of species and size class. The remaining sections in the bole, including the last section, were assumed to be frustums of a paraboloid; therefore the Smalian rule was used.

AN EQUATION FOR CVTS

Least squares regression was used to find an equation for CVTS inside bark. Diameter at breast height (DBH) outside bark and total height (HT) were used as independent variables because of simplicity of field measurement, and because they are used with cubic-foot volume in the comprehensive tree-volume tariff system (Turnbull, Little, and Hoyer 1980).

The equations considered were of five types. The first three, linear logarithmic,

mic, linear nonlogarithmic, and nonlinear, are summarized in Table 2. Two other types of equations weighted the linear nonlogarithmic and nonlinear equations. The weight, $1/(DBH^2 \cdot HT)^2$, was used to correct for nonhomogeneity of variance, as suggested by Cunia (1964). The best model from each type was chosen on the basis of MSR, r^2 , and residual plots. To select a final model from these, some of which are not comparably based, we computed an index of fit (Furnival 1961) for each one (Table

TABLE 2. EQUATIONS FOR TOTAL STEM CUBIC-FOOT VOLUME INSIDE BARK.^a

Model Form	Equation	Furnival's index of fit
Linear logarithmic		
LOG CVTS = A + B (LOG DBH) + C (LOG HT)	[1]	4.62
LOG CVTS = A + B (LOG DBH) + C (LOG HT) + D (DBH)	[2]	
Linear nonlogarithmic		
CVTS = A + B (DBH ² · HT)	[3]	4.84 (weighted) ^b
CVTS = A + B (DBH) + C (DBH ² · HT)	[4]	
CVTS = A + B (DBH) + C (HT) + D (DBH ² · HT)	[5]	
CVTS = A + B (DBH ²) + C (HT) + D (DBH ² · HT)	[6]	
Nonlinear		
CVTS = (10 ^A) (DBH ^B) (HT ^C)	[7]	4.64 (weighted) ^c
CVTS = A + (10 ^B) (DBH ^C) (HT ^D) ^d	[8]	

^aBest models were chosen on the basis of mean square residual, r^2 , and residual plots. LOG is the logarithm to the base 10, and A, B, C, D are fitted coefficients.

^b8.78 unweighted.

^c8.14 unweighted.

^dThe intercept in Equation 8 tested to be insignificant.

2). The magnitude of the index value for each equation is influenced by failure of any of three assumptions: that residuals are distributed normally, that they are distributed independently, or that they are distributed with a constant standard error. The equation with the smallest index value best meets the assumptions. In this case, the logarithmic fitted equation is best; however, with such an equation, log bias may be important. Baskerville (1972) suggests a log bias correction requiring normally distributed residuals, but a test developed by Bowman and Shenton (1975) showed that the residuals were not normally

distributed. Therefore, the correction was inappropriate to use. Because of the unknown effect of log bias, the small advantage in index value of Equation 1 (Table 2) appeared to be unwarranted, and weighted nonlinear Equation 7 (Table 2) was chosen for the final model:

$$CVTS = 0.001106485 \cdot (DBH^{1.8140497}) \cdot (HT^{1.2744923})$$

The R^2 is approximately 0.988 and the MSR is $2.6 \cdot 10^{-8}$. Examination of a plot of the residuals showed no trend.

USING THE COMPREHENSIVE TARIF SYSTEM

The comprehensive tree-volume tariff system was developed by K.J. Turnbull, G.R. Little, and G. E. Hoyer through the Washington State Department of Natural Resources (DNR) in the early 1960's. Interest in the system has continued to increase because the tariff tables are a convenient, statistically accurate collection of local volume tables that are applicable to many species.

The publication *Comprehensive Tree-Volume Tariff Tables* (Turnbull et al. 1980) provides tree volume and ratio of volume to basal area in several units of measure for several utilization limits: CVTS; cubic-foot volume with top only, or to 4- and 6-inch tops; Scribner volume (16- and 32-foot logs); and International 1/4-inch board-foot volume (16-foot logs) to a 6-inch top. Growth multipliers are also given.

Access to the local volume tables is simple and accurate. Each volume table, representing a different tree form, is defined by a tariff number that is the cubic-foot volume to a 4-inch top of a tree of 1.0 square foot basal area. To find the tariff number of a stand, 20 to 30 trees representative of the range of DBH should

be sampled by measuring HT of each tree to the nearest 2 feet and DBH to the nearest 0.1 inch. The DBH and HT can then be found in the access tables to determine a tariff number for each of the sample trees. These are then averaged to determine the tariff number for the stand, which identifies the correct volume table. The tariff number for a single tree is found in the same way as that for a single tree of a stand sample. A tariff volume table can then be consulted to find volumes and ratios of volume to basal area from data from a fixed-plot, 3-P, or variable-plot cruise. Further explanation of procedure and examples of tariff-system use are found in the *Comprehensive Tree-Volume Tariff Tables* (Turnbull et al. 1980).

The comprehensive tariff system is not limited to tables but also utilizes formulas adaptable for computer systems (Brackett 1973).

Access tables for determining a tariff number can be developed with volume tables by using the system's interrelated equations, summarized here, and a computer. More detail can be found in DNR Report No. 24 (Brackett 1973) and DNR Note No. 27 (Chambers and Foltz 1979).

The equation for mountain hemlock CVTS can be written for computer use as:

$$\text{CVTS} = 0.001106485 \\ * (\text{DBH} ** 1.8140497) * (\text{HT} ** 1.2744923),$$

the single asterisk meaning to multiply and the double asterisk meaning "taken to the power."

To generate an access table for mountain hemlock (see Tarif Access Tables, page 9), the computer program utilized loops to increment total height (2-foot intervals) and DBH (0.1-inch intervals) for calculating CVTS with the equation. Next, a tarif number was calculated for each of the previously computed volumes by the equation:

$$\text{TARIF} = (\text{CVTS} * 0.912733) \\ /((1.0330 * (1.0 + 1.382937 * \text{EXP } 1.382927 * \text{EXP } (-4.015292 * (\text{DBH}/10)))) * (\text{BA} + 0.087266) - 0.174533)$$

where BA is basal area in square feet for each DBH, and EXP is the exponent function (Brackett 1973, Chambers and Foltz 1979). The tarif numbers were then printed in table form for each HT and DBH.

To generate a volume table, (see Volume Tables, page 39), programs were written with the steps outlined in DNR Report No. 24 (Brackett 1973). Loops were again used to increment total height (10-foot intervals) and DBH (2-foot intervals), and CVTS and tarif were calculated with the equations as before. To find volumes in other merchantable tops and units, equations from DNR Report No. 24 (Brackett 1973) and equation SV6,16 from DNR Note 27 (Chambers and Foltz 1979) were used:

$$\text{Cubic-foot volume to a 4-inch top (CV4)} = \text{Tarif} * (\text{BA} - 0.087266)/0.912733$$

$$\text{Cubic-foot volume to a 6-inch top (CV6)} = \text{Tarif} * (0.993 - 0.993 * 0.62 ** (\text{DBH} - 6.0)) * (\text{BA} - 0.087266)/0.912733$$

$$\text{Cubic-foot volume to an 8-inch top (CV8)} = \text{Tarif} * (0.983 - 0.983 * 0.65 ** (\text{DBH} - 8.6)) * (\text{BA} - 0.087266)/0.912733$$

$$\text{Scribner board-foot volume to a 6-inch top in 16-foot logs (SV6,16)} \\ = (10 ** (0.174439 + 0.117594 * (\text{LOG DBH}) * (\text{LOG}(\text{TARIF}/0.912733)) - 0.8210585 \\ /(\text{DBH} ** 2.0) + 0.236693 * \text{LOG}(\text{TARIF}/0.912733) - 0.00001345 * (\text{TARIF}/0.912733) ** 2.0 - 0.00001937 * (\text{DBH} ** 2.0)) \\ * \text{CV6}$$

Scribner board-foot volume to an 8-inch top in 16-foot logs was approximated with the equation

$$(\text{SV8,16}) = \text{SV6,16} * (0.990 - 0.58 * (0.484 ** (\text{DBH} - 9.5)))$$

from DNR Report No. 24 (Brackett 1973). Also in DNR Note No. 27 is an equation for Scribner board-foot volume to a 6-inch top in 32-foot logs. Tables for the ratio of volume to basal area can also be constructed by using these equations and dividing each volume by the basal area appropriate for the DBH used in the calculation.

APPLICATION AND LIMITATIONS

As we have noted, about 20 to 30 trees should be sampled to find the average tariff number of a stand. In uneven-aged or mixed-species stands, the tariff number system can be used by stratifying the stand by DBH or species and finding two or more tariff numbers (Turnbull et al. 1980). Trees sampled for tariff numbers should be free of abnormalities such as broken tops.

A limitation of tariff tables in general is that they do not indicate volume of individual trees by log position. Thus, there are no direct means for determining defect and grade. A solution is to estimate the number of logs in a tree, then to use Table 1 of *Board-Foot Volume Tables* (Girard and Bruce 1976). Estimating the number of logs in a tree in this way is only for the purpose of grading trees and determining the amount of defect.

The most important limitation of the mountain hemlock volume model is that it is based solely on data from trees from the

Deschutes National Forest. Validation of models requires an independent data set, but because of the limited base, all available observations were included in the model development. Preliminary investigation, using a modification of an accuracy test (Freese 1960, Rennie and Wiant 1978) indicated that the volume equation should be used only within the area where data were collected. Caution should also be used with trees of large diameter and height. Mature mountain hemlock ranges in height from 50 to 100 feet and in diameter from 10 to 20 inches over much of its range (U.S. Department of Agriculture 1965). On better sites, very old trees may reach heights of 150 feet and diameters of 30 to 50 inches. For these larger trees, the reliability of the model is questionable.

Within the limitations, however, the tables provide volume data in many units of measure with minimum field data and are a useful means for managing mountain hemlock on the Deschutes National Forest.

TARIF ACCESS TABLES

DIAMETER (INCHES) : 6.0 - 10.4
 HEIGHT (FEET) : 30 - 70

DBH (IN)	TOTAL HEIGHT (FEET)																				
	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
	TARIF NUMBER																				
6.0	12.8	13.9	15.1	16.2	17.3	18.5	19.7	20.9	22.1	23.4	24.6	25.9	27.2	28.4	29.7	31.1	32.4	33.7	35.1	36.4	37.8
6.1	12.7	13.8	14.9	16.0	17.2	18.4	19.5	20.7	21.9	23.2	24.4	25.6	26.9	28.2	29.5	30.8	32.1	33.4	34.7	36.1	37.4
6.2	12.6	13.7	14.8	15.9	17.0	18.2	19.4	20.5	21.7	22.9	24.2	25.4	26.7	27.9	29.2	30.5	31.8	33.1	34.4	35.8	37.1
6.3	12.5	13.6	14.7	15.8	16.9	18.0	19.2	20.4	21.5	22.7	24.0	25.2	26.4	27.7	29.0	30.2	31.5	32.8	34.1	35.5	36.8
6.4	12.4	13.5	14.5	15.6	16.7	17.9	19.0	20.2	21.4	22.6	23.8	25.0	26.2	27.5	28.7	30.0	31.3	32.5	33.8	35.2	36.5
6.5	12.3	13.3	14.4	15.5	16.6	17.7	18.9	20.0	21.2	22.4	23.6	24.8	26.0	27.2	28.5	29.7	31.0	32.3	33.6	34.9	36.2
6.6	12.2	13.2	14.3	15.4	16.5	17.6	18.7	19.9	21.0	22.2	23.4	24.6	25.8	27.0	28.2	29.5	30.8	32.0	33.3	34.6	35.9
6.7	12.1	13.1	14.2	15.3	16.4	17.5	18.6	19.7	20.9	22.0	23.2	24.4	25.6	26.8	28.0	29.3	30.5	31.8	33.0	34.3	35.6
6.8	12.0	13.0	14.1	15.1	16.2	17.3	18.4	19.6	20.7	21.9	23.0	24.2	25.4	26.6	27.8	29.0	30.3	31.5	32.8	34.1	35.4
6.9	11.9	12.9	14.0	15.0	16.1	17.2	18.3	19.4	20.6	21.7	22.9	24.0	25.2	26.4	27.6	28.8	30.1	31.3	32.6	33.8	35.1
7.0	11.8	12.9	13.9	14.9	16.0	17.1	18.2	19.3	20.4	21.5	22.7	23.9	25.0	26.2	27.4	28.6	29.9	31.1	32.3	33.6	34.8
7.1	11.8	12.8	13.8	14.8	15.9	17.0	18.0	19.2	20.3	21.4	22.5	23.7	24.9	26.0	27.2	28.4	29.6	30.9	32.1	33.4	34.6
7.2	11.7	12.7	13.7	14.7	15.8	16.8	17.9	19.0	20.1	21.3	22.4	23.5	24.7	25.9	27.0	28.2	29.4	30.7	31.9	33.1	34.4
7.3	11.6	12.6	13.6	14.6	15.7	16.7	17.8	18.9	20.0	21.1	22.2	23.4	24.5	25.7	26.9	28.1	29.3	30.5	31.7	32.9	34.1
7.4	11.5	12.5	13.5	14.5	15.6	16.6	17.7	18.8	19.9	21.0	22.1	23.2	24.4	25.5	26.7	27.9	29.1	30.3	31.5	32.7	33.9
7.5	11.5	12.4	13.4	14.4	15.5	16.5	17.6	18.7	19.7	20.8	22.0	23.1	24.2	25.4	26.5	27.7	28.9	30.1	31.3	32.5	33.7
7.6	11.4	12.4	13.3	14.4	15.4	16.4	17.5	18.5	19.6	20.7	21.8	22.9	24.1	25.2	26.4	27.5	28.7	29.9	31.1	32.3	33.5
7.7	11.3	12.3	13.3	14.3	15.3	16.3	17.4	18.4	19.5	20.6	21.7	22.8	23.9	25.1	26.2	27.4	28.5	29.7	30.9	32.1	33.3
7.8	11.2	12.2	13.2	14.2	15.2	16.2	17.3	18.3	19.4	20.5	21.6	22.7	23.8	24.9	26.1	27.2	28.4	29.5	30.7	31.9	33.1
7.9	11.2	12.1	13.1	14.1	15.1	16.1	17.2	18.2	19.3	20.4	21.4	22.5	23.7	24.8	25.9	27.1	28.2	29.4	30.5	31.7	32.9
8.0	11.1	12.1	13.0	14.0	15.0	16.0	17.1	18.1	19.2	20.2	21.3	22.4	23.5	24.6	25.8	26.9	28.0	29.2	30.4	31.6	32.7
8.1	11.1	12.0	13.0	14.0	14.9	16.0	17.0	18.0	19.1	20.1	21.2	22.3	23.4	24.5	25.6	26.8	27.9	29.0	30.2	31.4	32.6
8.2	11.0	11.9	12.9	13.9	14.9	15.9	16.9	17.9	19.0	20.0	21.1	22.2	23.3	24.4	25.5	26.6	27.7	28.9	30.0	31.2	32.4
8.3	10.9	11.9	12.8	13.8	14.8	15.8	16.8	17.8	18.9	19.9	21.0	22.1	23.1	24.2	25.3	26.5	27.6	28.7	29.9	31.0	32.2
8.4	10.9	11.8	12.8	13.7	14.7	15.7	16.7	17.7	18.8	19.8	20.9	21.9	23.0	24.1	25.2	26.3	27.5	28.6	29.7	30.9	32.0
8.5	10.8	11.8	12.7	13.7	14.6	15.6	16.6	17.6	18.7	19.7	20.8	21.8	22.9	24.0	25.1	26.2	27.3	28.4	29.6	30.7	31.9
8.6	10.8	11.7	12.6	13.6	14.6	15.5	16.5	17.6	18.6	19.6	20.7	21.7	22.8	23.9	25.0	26.1	27.2	28.3	29.4	30.6	31.7
8.7	10.7	11.6	12.6	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.6	21.6	22.7	23.8	24.8	25.9	27.0	28.2	29.3	30.4	31.6
8.8	10.7	11.6	12.5	13.5	14.4	15.4	16.4	17.4	18.4	19.4	20.5	21.5	22.6	23.6	24.7	25.8	26.9	28.0	29.2	30.3	31.4
8.9	10.6	11.5	12.5	13.4	14.4	15.3	16.3	17.3	18.3	19.3	20.4	21.4	22.5	23.5	24.6	25.7	26.8	27.9	29.0	30.1	31.3
9.0	10.6	11.5	12.4	13.3	14.3	15.3	16.2	17.2	18.2	19.2	20.3	21.3	22.4	23.4	24.5	25.6	26.7	27.8	28.9	30.0	31.1
9.1	10.5	11.4	12.3	13.3	14.2	15.2	16.2	17.1	18.1	19.2	20.2	21.2	22.3	23.3	24.4	25.5	26.5	27.6	28.8	29.9	31.0
9.2	10.5	11.4	12.3	13.2	14.2	15.1	16.1	17.1	18.1	19.1	20.1	21.1	22.2	23.2	24.3	25.3	26.4	27.5	28.6	29.7	30.9
9.3	10.4	11.3	12.2	13.2	14.1	15.1	16.0	17.0	18.0	19.0	20.0	21.0	22.1	23.1	24.2	25.2	26.3	27.4	28.5	29.6	30.7
9.4	10.4	11.3	12.2	13.1	14.0	15.0	16.0	16.9	17.9	18.9	19.9	20.9	22.0	23.0	24.1	25.1	26.2	27.3	28.4	29.5	30.6
9.5	10.3	11.2	12.1	13.1	14.0	14.9	15.9	16.9	17.8	18.8	19.8	20.9	21.9	22.9	24.0	25.0	26.1	27.2	28.3	29.4	30.5
9.6	10.3	11.2	12.1	13.0	13.9	14.9	15.8	16.8	17.8	18.8	19.8	20.8	21.8	22.8	23.9	24.9	26.0	27.1	28.1	29.2	30.3
9.7	10.3	11.1	12.0	12.9	13.9	14.8	15.8	16.7	17.7	18.7	19.7	20.7	21.7	22.7	23.8	24.8	25.9	26.9	28.0	29.1	30.2
9.8	10.2	11.1	12.0	12.9	13.8	14.7	15.7	16.6	17.6	18.6	19.6	20.6	21.6	22.6	23.7	24.7	25.8	26.8	27.9	29.0	30.1
9.9	10.2	11.1	11.9	12.8	13.8	14.7	15.6	16.6	17.5	18.5	19.5	20.5	21.5	22.6	23.6	24.6	25.7	26.7	27.8	28.9	30.0
10.0	10.1	11.0	11.9	12.8	13.7	14.6	15.6	16.5	17.5	18.5	19.4	20.4	21.4	22.5	23.5	24.5	25.6	26.6	27.7	28.8	29.9
10.1	10.1	11.0	11.8	12.7	13.7	14.6	15.5	16.5	17.4	18.4	19.4	20.4	21.4	22.4	23.4	24.4	25.5	26.5	27.6	28.7	29.7
10.2	10.1	10.9	11.8	12.7	13.6	14.5	15.5	16.4	17.3	18.3	19.3	20.3	21.3	22.3	23.3	24.3	25.4	26.4	27.5	28.6	29.6
10.3	10.0	10.9	11.8	12.6	13.5	14.5	15.4	16.3	17.3	18.2	19.2	20.2	21.2	22.2	23.2	24.3	25.3	26.3	27.4	28.4	29.5
10.4	10.0	10.8	11.7	12.6	13.5	14.4	15.3	16.3	17.2	18.2	19.2	20.1	21.1	22.1	23.1	24.2	25.2	26.2	27.3	28.3	29.4

10 ACCESS TABLES

DIAMETER (INCHES) : 10.5 - 14.9
 HEIGHT (FEET) : 30 - 70

DBH	TOTAL HEIGHT (FEET)																				
	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
(IN)	----- TARIFF NUMBER -----																				
10.5	10.0	10.8	11.7	12.6	13.5	14.4	15.3	16.2	17.2	18.1	19.1	20.1	21.1	22.1	23.1	24.1	25.1	26.1	27.2	28.2	29.3
10.6	9.9	10.8	11.6	12.5	13.4	14.3	15.2	16.2	17.1	18.1	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0	27.1	28.1	29.2
10.7	9.9	10.7	11.6	12.5	13.4	14.3	15.2	16.1	17.0	18.0	19.0	19.9	20.9	21.9	22.9	23.9	24.9	26.0	27.0	28.0	29.1
10.8	9.8	10.7	11.6	12.4	13.3	14.2	15.1	16.0	17.0	17.9	18.9	19.9	20.8	21.8	22.8	23.8	24.8	25.9	26.9	27.9	29.0
10.9	9.8	10.7	11.5	12.4	13.3	14.2	15.1	16.0	16.9	17.9	18.8	19.8	20.8	21.7	22.7	23.7	24.8	25.8	26.8	27.9	28.9
11.0	9.8	10.6	11.5	12.3	13.2	14.1	15.0	15.9	16.9	17.8	18.8	19.7	20.7	21.7	22.7	23.7	24.7	25.7	26.7	27.8	28.8
11.1	9.8	10.6	11.4	12.3	13.2	14.1	15.0	15.9	16.8	17.8	18.7	19.7	20.6	21.6	22.6	23.6	24.6	25.6	26.6	27.7	28.7
11.2	9.7	10.6	11.4	12.3	13.1	14.0	14.9	15.8	16.8	17.7	18.6	19.6	20.6	21.5	22.5	23.5	24.5	25.5	26.6	27.6	28.6
11.3	9.7	10.5	11.4	12.2	13.1	14.0	14.9	15.8	16.7	17.6	18.6	19.5	20.5	21.5	22.4	23.4	24.4	25.4	26.5	27.5	28.5
11.4	9.7	10.5	11.3	12.2	13.1	13.9	14.8	15.7	16.7	17.6	18.5	19.5	20.4	21.4	22.4	23.4	24.4	25.4	26.4	27.4	28.4
11.5	9.6	10.5	11.3	12.1	13.0	13.9	14.8	15.7	16.6	17.5	18.5	19.4	20.4	21.3	22.3	23.3	24.3	25.3	26.3	27.3	28.3
11.6	9.6	10.4	11.3	12.1	13.0	13.9	14.7	15.6	16.6	17.5	18.4	19.3	20.3	21.3	22.2	23.2	24.2	25.2	26.2	27.2	28.3
11.7	9.6	10.4	11.2	12.1	12.9	13.8	14.7	15.6	16.5	17.4	18.4	19.3	20.2	21.2	22.2	23.2	24.1	25.1	26.1	27.2	28.2
11.8	9.5	10.4	11.2	12.0	12.9	13.8	14.7	15.5	16.5	17.4	18.3	19.2	20.2	21.1	22.1	23.1	24.1	25.1	26.1	27.1	28.1
11.9	9.5	10.3	11.2	12.0	12.9	13.7	14.6	15.5	16.4	17.3	18.2	19.2	20.1	21.1	22.0	23.0	24.0	25.0	26.0	27.0	28.0
12.0	9.5	10.3	11.1	12.0	12.8	13.7	14.6	15.5	16.4	17.3	18.2	19.1	20.1	21.0	22.0	22.9	23.9	24.9	25.9	26.9	27.9
12.1	9.5	10.3	11.1	11.9	12.8	13.6	14.5	15.4	16.3	17.2	18.1	19.1	20.0	21.0	21.9	22.9	23.9	24.8	25.8	26.8	27.8
12.2	9.4	10.2	11.1	11.9	12.7	13.6	14.5	15.4	16.3	17.2	18.1	19.0	19.9	20.9	21.9	22.8	23.8	24.8	25.8	26.8	27.8
12.3	9.4	10.2	11.0	11.9	12.7	13.6	14.4	15.3	16.2	17.1	18.0	19.0	19.9	20.8	21.8	22.8	23.7	24.7	25.7	26.7	27.7
12.4	9.4	10.2	11.0	11.8	12.7	13.5	14.4	15.3	16.2	17.1	18.0	18.9	19.8	20.8	21.7	22.7	23.7	24.6	25.6	26.6	27.6
12.5	9.4	10.2	11.0	11.8	12.6	13.5	14.4	15.2	16.1	17.0	17.9	18.9	19.8	20.7	21.7	22.6	23.6	24.6	25.6	26.5	27.5
12.6	9.3	10.1	10.9	11.8	12.6	13.5	14.3	15.2	16.1	17.0	17.9	18.8	19.7	20.7	21.6	22.6	23.5	24.5	25.5	26.5	27.5
12.7	9.3	10.1	10.9	11.7	12.6	13.4	14.3	15.2	16.0	16.9	17.8	18.8	19.7	20.6	21.6	22.5	23.5	24.4	25.4	26.4	27.4
12.8	9.3	10.1	10.9	11.7	12.5	13.4	14.2	15.1	16.0	16.9	17.8	18.7	19.6	20.6	21.5	22.4	23.4	24.4	25.3	26.3	27.3
12.9	9.3	10.0	10.9	11.7	12.5	13.4	14.2	15.1	16.0	16.8	17.7	18.7	19.6	20.5	21.4	22.4	23.3	24.3	25.3	26.3	27.3
13.0	9.2	10.0	10.8	11.6	12.5	13.3	14.2	15.0	15.9	16.8	17.7	18.6	19.5	20.5	21.4	22.3	23.3	24.2	25.2	26.2	27.2
13.1	9.2	10.0	10.8	11.6	12.4	13.3	14.1	15.0	15.9	16.8	17.7	18.6	19.5	20.4	21.3	22.3	23.2	24.2	25.2	26.1	27.1
13.2	9.2	10.0	10.8	11.6	12.4	13.3	14.1	15.0	15.8	16.7	17.6	18.5	19.4	20.4	21.3	22.2	23.2	24.1	25.1	26.1	27.0
13.3	9.2	9.9	10.7	11.6	12.4	13.2	14.1	14.9	15.8	16.7	17.6	18.5	19.4	20.3	21.2	22.2	23.1	24.1	25.0	26.0	27.0
13.4	9.1	9.9	10.7	11.5	12.4	13.2	14.0	14.9	15.8	16.6	17.5	18.4	19.3	20.3	21.2	22.1	23.1	24.0	25.0	25.9	26.9
13.5	9.1	9.9	10.7	11.5	12.3	13.2	14.0	14.9	15.7	16.6	17.5	18.4	19.3	20.2	21.1	22.1	23.0	24.0	24.9	25.9	26.8
13.6	9.1	9.9	10.7	11.5	12.3	13.1	14.0	14.8	15.7	16.6	17.4	18.3	19.2	20.2	21.1	22.0	22.9	23.9	24.9	25.8	26.8
13.7	9.1	9.9	10.6	11.4	12.3	13.1	13.9	14.8	15.6	16.5	17.4	18.3	19.2	20.1	21.0	22.0	22.9	23.8	24.8	25.8	26.7
13.8	9.1	9.8	10.6	11.4	12.2	13.1	13.9	14.8	15.6	16.5	17.4	18.3	19.2	20.1	21.0	21.9	22.8	23.8	24.7	25.7	26.7
13.9	9.0	9.8	10.6	11.4	12.2	13.0	13.9	14.7	15.6	16.4	17.3	18.2	19.1	20.0	20.9	21.9	22.8	23.7	24.7	25.6	26.6
14.0	9.0	9.8	10.6	11.4	12.2	13.0	13.8	14.7	15.5	16.4	17.3	18.2	19.1	20.0	20.9	21.8	22.7	23.7	24.6	25.6	26.5
14.1	9.0	9.8	10.5	11.3	12.2	13.0	13.8	14.7	15.5	16.4	17.2	18.1	19.0	19.9	20.8	21.8	22.7	23.6	24.6	25.5	26.5
14.2	9.0	9.7	10.5	11.3	12.1	12.9	13.8	14.6	15.5	16.3	17.2	18.1	19.0	19.9	20.8	21.7	22.6	23.6	24.5	25.5	26.4
14.3	9.0	9.7	10.5	11.3	12.1	12.9	13.7	14.6	15.4	16.3	17.2	18.0	18.9	19.8	20.7	21.7	22.6	23.5	24.5	25.4	26.4
14.4	8.9	9.7	10.5	11.3	12.1	12.9	13.7	14.6	15.4	16.3	17.1	18.0	18.9	19.8	20.7	21.6	22.5	23.5	24.4	25.4	26.3
14.5	8.9	9.7	10.5	11.2	12.0	12.9	13.7	14.5	15.4	16.2	17.1	18.0	18.9	19.8	20.7	21.6	22.5	23.4	24.4	25.3	26.2
14.6	8.9	9.7	10.4	11.2	12.0	12.8	13.7	14.5	15.3	16.2	17.1	17.9	18.8	19.7	20.6	21.5	22.4	23.4	24.3	25.2	26.2
14.7	8.9	9.6	10.4	11.2	12.0	12.8	13.6	14.5	15.3	16.2	17.0	17.9	18.8	19.7	20.6	21.5	22.4	23.3	24.2	25.2	26.1
14.8	8.9	9.6	10.4	11.2	12.0	12.8	13.6	14.4	15.3	16.1	17.0	17.9	18.7	19.6	20.5	21.4	22.3	23.3	24.2	25.1	26.1
14.9	8.8	9.6	10.4	11.2	11.9	12.8	13.6	14.4	15.2	16.1	17.0	17.8	18.7	19.6	20.5	21.4	22.3	23.2	24.1	25.1	26.0

DIAMETER (INCHES) : 15.0 - 19.4
HEIGHT (FEET) : 30 - 70

DBH (IN)	TOTAL HEIGHT (FEET)																				
	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
15.0	8.8	9.6	10.3	11.1	11.9	12.7	13.5	14.4	15.2	16.1	16.9	17.8	18.7	19.5	20.4	21.3	22.3	23.2	24.1	25.0	26.0
15.1	8.8	9.6	10.3	11.1	11.9	12.7	13.5	14.3	15.2	16.0	16.9	17.7	18.6	19.5	20.4	21.3	22.2	23.1	24.1	25.0	25.9
15.2	8.8	9.5	10.3	11.1	11.9	12.7	13.5	14.3	15.2	16.0	16.8	17.7	18.6	19.5	20.4	21.3	22.2	23.1	24.0	24.9	25.9
15.3	8.8	9.5	10.3	11.1	11.9	12.7	13.5	14.3	15.1	16.0	16.8	17.7	18.5	19.4	20.3	21.2	22.1	23.0	24.0	24.9	25.8
15.4	8.8	9.5	10.3	11.0	11.8	12.6	13.4	14.3	15.1	15.9	16.8	17.6	18.5	19.4	20.3	21.2	22.1	23.0	23.9	24.8	25.8
15.5	8.7	9.5	10.2	11.0	11.8	12.6	13.4	14.2	15.1	15.9	16.8	17.6	18.5	19.4	20.2	21.1	22.0	22.9	23.9	24.8	25.7
15.6	8.7	9.5	10.2	11.0	11.8	12.6	13.4	14.2	15.0	15.9	16.7	17.6	18.4	19.3	20.2	21.1	22.0	22.9	23.8	24.7	25.7
15.7	8.7	9.4	10.2	11.0	11.8	12.6	13.4	14.2	15.0	15.8	16.7	17.5	18.4	19.3	20.2	21.1	22.0	22.9	23.8	24.7	25.6
15.8	8.7	9.4	10.2	11.0	11.7	12.5	13.3	14.2	15.0	15.8	16.7	17.5	18.4	19.2	20.1	21.0	21.9	22.8	23.7	24.6	25.6
15.9	8.7	9.4	10.2	10.9	11.7	12.5	13.3	14.1	14.9	15.8	16.6	17.5	18.3	19.2	20.1	21.0	21.9	22.8	23.7	24.6	25.5
16.0	8.7	9.4	10.2	10.9	11.7	12.5	13.3	14.1	14.9	15.8	16.6	17.4	18.3	19.2	20.0	20.9	21.8	22.7	23.6	24.6	25.5
16.1	8.6	9.4	10.1	10.9	11.7	12.5	13.3	14.1	14.9	15.7	16.6	17.4	18.3	19.1	20.0	20.9	21.8	22.7	23.6	24.5	25.4
16.2	8.6	9.4	10.1	10.9	11.7	12.4	13.2	14.0	14.9	15.7	16.5	17.4	18.2	19.1	20.0	20.9	21.7	22.6	23.6	24.5	25.4
16.3	8.6	9.3	10.1	10.9	11.6	12.4	13.2	14.0	14.8	15.7	16.5	17.4	18.2	19.1	19.9	20.8	21.7	22.6	23.5	24.4	25.3
16.4	8.6	9.3	10.1	10.8	11.6	12.4	13.2	14.0	14.8	15.6	16.5	17.3	18.2	19.0	19.9	20.8	21.7	22.6	23.5	24.4	25.3
16.5	8.6	9.3	10.1	10.8	11.6	12.4	13.2	14.0	14.8	15.6	16.4	17.3	18.1	19.0	19.9	20.7	21.6	22.5	23.4	24.3	25.3
16.6	8.6	9.3	10.0	10.8	11.6	12.4	13.1	13.9	14.8	15.6	16.4	17.3	18.1	19.0	19.8	20.7	21.6	22.5	23.4	24.3	25.2
16.7	8.5	9.3	10.0	10.8	11.6	12.3	13.1	13.9	14.7	15.6	16.4	17.2	18.1	18.9	19.8	20.7	21.6	22.4	23.3	24.3	25.2
16.8	8.5	9.3	10.0	10.8	11.5	12.3	13.1	13.9	14.7	15.5	16.4	17.2	18.0	18.9	19.8	20.6	21.5	22.4	23.3	24.2	25.1
16.9	8.5	9.2	10.0	10.7	11.5	12.3	13.1	13.9	14.7	15.5	16.3	17.2	18.0	18.9	19.7	20.6	21.5	22.4	23.3	24.2	25.1
17.0	8.5	9.2	10.0	10.7	11.5	12.3	13.1	13.9	14.7	15.5	16.3	17.1	18.0	18.8	19.7	20.6	21.4	22.3	23.2	24.1	25.0
17.1	8.5	9.2	10.0	10.7	11.5	12.2	13.0	13.8	14.6	15.5	16.3	17.1	18.0	18.8	19.7	20.5	21.4	22.3	23.2	24.1	25.0
17.2	8.5	9.2	9.9	10.7	11.5	12.2	13.0	13.8	14.6	15.4	16.3	17.1	17.9	18.8	19.6	20.5	21.4	22.3	23.2	24.1	25.0
17.3	8.5	9.2	9.9	10.7	11.4	12.2	13.0	13.8	14.6	15.4	16.2	17.1	17.9	18.7	19.6	20.5	21.3	22.2	23.1	24.0	24.9
17.4	8.4	9.2	9.9	10.7	11.4	12.2	13.0	13.8	14.6	15.4	16.2	17.0	17.9	18.7	19.6	20.4	21.3	22.2	23.1	24.0	24.9
17.5	8.4	9.2	9.9	10.6	11.4	12.2	13.0	13.7	14.5	15.4	16.2	17.0	17.8	18.7	19.5	20.4	21.3	22.2	23.0	23.9	24.8
17.6	8.4	9.1	9.9	10.6	11.4	12.2	12.9	13.7	14.5	15.3	16.1	17.0	17.8	18.7	19.5	20.4	21.2	22.1	23.0	23.9	24.8
17.7	8.4	9.1	9.9	10.6	11.4	12.1	12.9	13.7	14.5	15.3	16.1	16.9	17.8	18.6	19.5	20.3	21.2	22.1	23.0	23.9	24.8
17.8	8.4	9.1	9.8	10.6	11.3	12.1	12.9	13.7	14.5	15.3	16.1	16.9	17.8	18.6	19.5	20.3	21.2	22.1	22.9	23.8	24.7
17.9	8.4	9.1	9.8	10.6	11.3	12.1	12.9	13.7	14.5	15.3	16.1	16.9	17.7	18.6	19.4	20.3	21.1	22.0	22.9	23.8	24.7
18.0	8.4	9.1	9.8	10.6	11.3	12.1	12.9	13.6	14.4	15.2	16.0	16.9	17.7	18.5	19.4	20.2	21.1	22.0	22.9	23.7	24.6
18.1	8.4	9.1	9.8	10.5	11.3	12.1	12.8	13.6	14.4	15.2	16.0	16.8	17.7	18.5	19.4	20.2	21.1	21.9	22.8	23.7	24.6
18.2	8.3	9.1	9.8	10.5	11.3	12.0	12.8	13.6	14.4	15.2	16.0	16.8	17.6	18.5	19.3	20.2	21.0	21.9	22.8	23.7	24.6
18.3	8.3	9.0	9.8	10.5	11.3	12.0	12.8	13.6	14.4	15.2	16.0	16.8	17.6	18.5	19.3	20.2	21.0	21.9	22.8	23.6	24.5
18.4	8.3	9.0	9.8	10.5	11.2	12.0	12.8	13.6	14.3	15.1	16.0	16.8	17.6	18.4	19.3	20.1	21.0	21.9	22.7	23.6	24.5
18.5	8.3	9.0	9.7	10.5	11.2	12.0	12.8	13.5	14.3	15.1	15.9	16.7	17.6	18.4	19.2	20.1	21.0	21.8	22.7	23.6	24.5
18.6	8.3	9.0	9.7	10.5	11.2	12.0	12.7	13.5	14.3	15.1	15.9	16.7	17.5	18.4	19.2	20.1	20.9	21.8	22.7	23.5	24.4
18.7	8.3	9.0	9.7	10.4	11.2	12.0	12.7	13.5	14.3	15.1	15.9	16.7	17.5	18.4	19.2	20.0	20.9	21.8	22.6	23.5	24.4
18.8	8.3	9.0	9.7	10.4	11.2	11.9	12.7	13.5	14.3	15.1	15.9	16.7	17.5	18.3	19.2	20.0	20.9	21.7	22.6	23.5	24.4
18.9	8.3	9.0	9.7	10.4	11.2	11.9	12.7	13.5	14.2	15.0	15.8	16.6	17.5	18.3	19.1	20.0	20.8	21.7	22.6	23.4	24.3
19.0	8.2	9.0	9.7	10.4	11.1	11.9	12.7	13.4	14.2	15.0	15.8	16.6	17.4	18.3	19.1	20.0	20.8	21.7	22.5	23.4	24.3
19.1	8.2	8.9	9.7	10.4	11.1	11.9	12.6	13.4	14.2	15.0	15.8	16.6	17.4	18.2	19.1	19.9	20.8	21.6	22.5	23.4	24.2
19.2	8.2	8.9	9.6	10.4	11.1	11.9	12.6	13.4	14.2	15.0	15.8	16.6	17.4	18.2	19.1	19.9	20.7	21.6	22.5	23.3	24.2
19.3	8.2	8.9	9.6	10.4	11.1	11.9	12.6	13.4	14.2	15.0	15.7	16.6	17.4	18.2	19.0	19.9	20.7	21.6	22.4	23.3	24.2
19.4	8.2	8.9	9.6	10.3	11.1	11.8	12.6	13.4	14.1	14.9	15.7	16.5	17.3	18.2	19.0	19.8	20.7	21.5	22.4	23.3	24.2

12 ACCESS TABLES

DIAMETER (INCHES) : 19.5 - 23.9
 HEIGHT (FEET) : 30 - 70

DBH (IN)	TOTAL HEIGHT (FEET)																				
	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
19.5	8.2	8.9	9.6	10.3	11.1	11.8	12.6	13.3	14.1	14.9	15.7	16.5	17.3	18.1	19.0	19.8	20.7	21.5	22.4	23.2	24.1
19.6	8.2	8.9	9.6	10.3	11.1	11.8	12.6	13.3	14.1	14.9	15.7	16.5	17.3	18.1	19.0	19.8	20.6	21.5	22.3	23.2	24.1
19.7	8.2	8.9	9.6	10.3	11.0	11.8	12.5	13.3	14.1	14.9	15.7	16.5	17.3	18.1	18.9	19.8	20.6	21.5	22.3	23.2	24.1
19.8	8.2	8.9	9.6	10.3	11.0	11.8	12.5	13.3	14.1	14.9	15.6	16.4	17.3	18.1	18.9	19.7	20.6	21.4	22.3	23.1	24.0
19.9	8.1	8.8	9.6	10.3	11.0	11.8	12.5	13.3	14.0	14.8	15.6	16.4	17.2	18.1	18.9	19.7	20.6	21.4	22.3	23.1	24.0
20.0	8.1	8.8	9.5	10.3	11.0	11.7	12.5	13.3	14.0	14.8	15.6	16.4	17.2	18.0	18.9	19.7	20.5	21.4	22.2	23.1	24.0
20.1	8.1	8.8	9.5	10.3	11.0	11.7	12.5	13.2	14.0	14.8	15.6	16.4	17.2	18.0	18.8	19.7	20.5	21.3	22.2	23.1	23.9
20.2	8.1	8.8	9.5	10.2	11.0	11.7	12.5	13.2	14.0	14.8	15.6	16.4	17.2	18.0	18.8	19.6	20.5	21.3	22.2	23.0	23.9
20.3	8.1	8.8	9.5	10.2	11.0	11.7	12.4	13.2	14.0	14.8	15.5	16.3	17.1	18.0	18.8	19.6	20.4	21.3	22.1	23.0	23.9
20.4	8.1	8.8	9.5	10.2	10.9	11.7	12.4	13.2	14.0	14.7	15.5	16.3	17.1	17.9	18.8	19.6	20.4	21.3	22.1	23.0	23.8
20.5	8.1	8.8	9.5	10.2	10.9	11.7	12.4	13.2	13.9	14.7	15.5	16.3	17.1	17.9	18.7	19.6	20.4	21.2	22.1	22.9	23.8
20.6	8.1	8.8	9.5	10.2	10.9	11.7	12.4	13.2	13.9	14.7	15.5	16.3	17.1	17.9	18.7	19.5	20.4	21.2	22.1	22.9	23.8
20.7	8.1	8.8	9.5	10.2	10.9	11.6	12.4	13.1	13.9	14.7	15.5	16.3	17.1	17.9	18.7	19.5	20.3	21.2	22.0	22.9	23.7
20.8	8.1	8.7	9.4	10.2	10.9	11.6	12.4	13.1	13.9	14.7	15.4	16.2	17.0	17.8	18.7	19.5	20.3	21.2	22.0	22.9	23.7
20.9	8.0	8.7	9.4	10.2	10.9	11.6	12.4	13.1	13.9	14.6	15.4	16.2	17.0	17.8	18.6	19.5	20.3	21.1	22.0	22.8	23.7
21.0	8.0	8.7	9.4	10.1	10.9	11.6	12.3	13.1	13.9	14.6	15.4	16.2	17.0	17.8	18.6	19.4	20.3	21.1	22.0	22.8	23.7
21.1	8.0	8.7	9.4	10.1	10.8	11.6	12.3	13.1	13.8	14.6	15.4	16.2	17.0	17.8	18.6	19.4	20.2	21.1	21.9	22.8	23.6
21.2	8.0	8.7	9.4	10.1	10.8	11.6	12.3	13.1	13.8	14.6	15.4	16.2	17.0	17.8	18.6	19.4	20.2	21.1	21.9	22.7	23.6
21.3	8.0	8.7	9.4	10.1	10.8	11.6	12.3	13.0	13.8	14.6	15.4	16.1	16.9	17.7	18.6	19.4	20.2	21.0	21.9	22.7	23.6
21.4		8.7	9.4	10.1	10.8	11.5	12.3	13.0	13.8	14.6	15.3	16.1	16.9	17.7	18.5	19.3	20.2	21.0	21.8	22.7	23.5
21.5		8.7	9.4	10.1	10.8	11.5	12.3	13.0	13.8	14.5	15.3	16.1	16.9	17.7	18.5	19.3	20.1	21.0	21.8	22.7	23.5
21.6		8.7	9.4	10.1	10.8	11.5	12.3	13.0	13.8	14.5	15.3	16.1	16.9	17.7	18.5	19.3	20.1	21.0	21.8	22.6	23.5
21.7		8.7	9.3	10.1	10.8	11.5	12.2	13.0	13.7	14.5	15.3	16.1	16.9	17.7	18.5	19.3	20.1	20.9	21.8	22.6	23.5
21.8		8.6	9.3	10.0	10.8	11.5	12.2	13.0	13.7	14.5	15.3	16.0	16.8	17.6	18.4	19.3	20.1	20.9	21.7	22.6	23.4
21.9		8.6	9.3	10.0	10.7	11.5	12.2	13.0	13.7	14.5	15.2	16.0	16.8	17.6	18.4	19.2	20.1	20.9	21.7	22.6	23.4
22.0		8.6	9.3	10.0	10.7	11.5	12.2	12.9	13.7	14.5	15.2	16.0	16.8	17.6	18.4	19.2	20.0	20.9	21.7	22.5	23.4
22.1		8.6	9.3	10.0	10.7	11.4	12.2	12.9	13.7	14.4	15.2	16.0	16.8	17.6	18.4	19.2	20.0	20.8	21.7	22.5	23.4
22.2		8.6	9.3	10.0	10.7	11.4	12.2	12.9	13.7	14.4	15.2	16.0	16.8	17.6	18.4	19.2	20.0	20.8	21.6	22.5	23.3
22.3		8.6	9.3	10.0	10.7	11.4	12.2	12.9	13.6	14.4	15.2	16.0	16.7	17.5	18.3	19.2	20.0	20.8	21.6	22.5	23.3
22.4		8.6	9.3	10.0	10.7	11.4	12.1	12.9	13.6	14.4	15.2	15.9	16.7	17.5	18.3	19.1	19.9	20.8	21.6	22.4	23.3
22.5		8.6	9.3	10.0	10.7	11.4	12.1	12.9	13.6	14.4	15.1	15.9	16.7	17.5	18.3	19.1	19.9	20.7	21.6	22.4	23.3
22.6		8.6	9.3	10.0	10.7	11.4	12.1	12.9	13.6	14.4	15.1	15.9	16.7	17.5	18.3	19.1	19.9	20.7	21.6	22.4	23.2
22.7		8.6	9.2	9.9	10.7	11.4	12.1	12.8	13.6	14.3	15.1	15.9	16.7	17.5	18.3	19.1	19.9	20.7	21.5	22.4	23.2
22.8		8.5	9.2	9.9	10.6	11.4	12.1	12.8	13.6	14.3	15.1	15.9	16.7	17.4	18.2	19.0	19.9	20.7	21.5	22.3	23.2
22.9		8.5	9.2	9.9	10.6	11.3	12.1	12.8	13.6	14.3	15.1	15.9	16.6	17.4	18.2	19.0	19.8	20.7	21.5	22.3	23.2
23.0		8.5	9.2	9.9	10.6	11.3	12.1	12.8	13.5	14.3	15.1	15.8	16.6	17.4	18.2	19.0	19.8	20.6	21.5	22.3	23.1
23.1		8.5	9.2	9.9	10.6	11.3	12.1	12.8	13.5	14.3	15.0	15.8	16.6	17.4	18.2	19.0	19.8	20.6	21.4	22.3	23.1
23.2		8.5	9.2	9.9	10.6	11.3	12.0	12.8	13.5	14.3	15.0	15.8	16.6	17.4	18.2	19.0	19.8	20.6	21.4	22.2	23.1
23.3		8.5	9.2	9.9	10.6	11.3	12.0	12.8	13.5	14.3	15.0	15.8	16.6	17.4	18.1	18.9	19.8	20.6	21.4	22.2	23.1
23.4		8.5	9.2	9.9	10.6	11.3	12.0	12.7	13.5	14.2	15.0	15.8	16.5	17.3	18.1	18.9	19.7	20.5	21.4	22.2	23.0
23.5		8.5	9.2	9.9	10.6	11.3	12.0	12.7	13.5	14.2	15.0	15.8	16.5	17.3	18.1	18.9	19.7	20.5	21.3	22.2	23.0
23.6		8.5	9.2	9.9	10.6	11.3	12.0	12.7	13.5	14.2	15.0	15.7	16.5	17.3	18.1	18.9	19.7	20.5	21.3	22.2	23.0
23.7		8.5	9.1	9.8	10.5	11.3	12.0	12.7	13.4	14.2	15.0	15.7	16.5	17.3	18.1	18.9	19.7	20.5	21.3	22.1	23.0
23.8		8.5	9.1	9.8	10.5	11.2	12.0	12.7	13.4	14.2	14.9	15.7	16.5	17.3	18.1	18.9	19.7	20.5	21.3	22.1	22.9
23.9		8.5	9.1	9.8	10.5	11.2	12.0	12.7	13.4	14.2	14.9	15.7	16.5	17.2	18.0	18.8	19.6	20.4	21.3	22.1	22.9

DIAMETER (INCHES) : 24.0 - 28.4
 HEIGHT (FEET) : 30 - 70

DBH	TOTAL HEIGHT (FEET)																				
	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
(IN)	----- TARIF NUMBER -----																				
24.0	8.4	9.1	9.8	10.5	11.2	11.9	12.7	13.4	14.2	14.9	15.7	16.4	17.2	18.0	18.8	19.6	20.4	21.2	22.1	22.9	
24.1	8.4	9.1	9.8	10.5	11.2	11.9	12.7	13.4	14.1	14.9	15.7	16.4	17.2	18.0	18.8	19.6	20.4	21.2	22.0	22.9	
24.2	8.4	9.1	9.8	10.5	11.2	11.9	12.6	13.4	14.1	14.9	15.6	16.4	17.2	18.0	18.8	19.6	20.4	21.2	22.0	22.9	
24.3	8.4	9.1	9.8	10.5	11.2	11.9	12.6	13.4	14.1	14.9	15.6	16.4	17.2	18.0	18.8	19.6	20.4	21.2	22.0	22.8	
24.4	8.4	9.1	9.8	10.5	11.2	11.9	12.6	13.4	14.1	14.9	15.6	16.4	17.2	17.9	18.7	19.5	20.3	21.2	22.0	22.8	
24.5	8.4	9.1	9.8	10.5	11.2	11.9	12.6	13.3	14.1	14.8	15.6	16.4	17.1	17.9	18.7	19.5	20.3	21.1	22.0	22.8	
24.6	8.4	9.1	9.8	10.4	11.2	11.9	12.6	13.3	14.1	14.8	15.6	16.4	17.1	17.9	18.7	19.5	20.3	21.1	21.9	22.8	
24.7	8.4	9.1	9.7	10.4	11.1	11.9	12.6	13.3	14.1	14.8	15.6	16.3	17.1	17.9	18.7	19.5	20.3	21.1	21.9	22.7	
24.8	8.4	9.1	9.7	10.4	11.1	11.8	12.6	13.3	14.0	14.8	15.6	16.3	17.1	17.9	18.7	19.5	20.3	21.1	21.9	22.7	
24.9	8.4	9.0	9.7	10.4	11.1	11.8	12.6	13.3	14.0	14.8	15.5	16.3	17.1	17.9	18.6	19.4	20.2	21.1	21.9	22.7	
25.0	8.4	9.0	9.7	10.4	11.1	11.8	12.5	13.3	14.0	14.8	15.5	16.3	17.1	17.8	18.6	19.4	20.2	21.0	21.9	22.7	
25.1	8.4	9.0	9.7	10.4	11.1	11.8	12.5	13.3	14.0	14.8	15.5	16.3	17.0	17.8	18.6	19.4	20.2	21.0	21.8	22.7	
25.2	8.3	9.0	9.7	10.4	11.1	11.8	12.5	13.3	14.0	14.7	15.5	16.3	17.0	17.8	18.6	19.4	20.2	21.0	21.8	22.6	
25.3	8.3	9.0	9.7	10.4	11.1	11.8	12.5	13.2	14.0	14.7	15.5	16.2	17.0	17.8	18.6	19.4	20.2	21.0	21.8	22.6	
25.4	8.3	9.0	9.7	10.4	11.1	11.8	12.5	13.2	14.0	14.7	15.5	16.2	17.0	17.8	18.6	19.4	20.2	21.0	21.8	22.6	
25.5	8.3	9.0	9.7	10.4	11.1	11.8	12.5	13.2	14.0	14.7	15.5	16.2	17.0	17.8	18.5	19.3	20.1	20.9	21.8	22.6	
25.6	8.3	9.0	9.7	10.4	11.1	11.8	12.5	13.2	13.9	14.7	15.4	16.2	17.0	17.7	18.5	19.3	20.1	20.9	21.7	22.6	
25.7	8.3	9.0	9.7	10.3	11.0	11.8	12.5	13.2	13.9	14.7	15.4	16.2	17.0	17.7	18.5	19.3	20.1	20.9	21.7	22.5	
25.8	8.3	9.0	9.6	10.3	11.0	11.7	12.5	13.2	13.9	14.7	15.4	16.2	16.9	17.7	18.5	19.3	20.1	20.9	21.7	22.5	
25.9	8.3	9.0	9.6	10.3	11.0	11.7	12.4	13.2	13.9	14.6	15.4	16.2	16.9	17.7	18.5	19.3	20.1	20.9	21.7	22.5	
26.0	8.3	9.0	9.6	10.3	11.0	11.7	12.4	13.2	13.9	14.6	15.4	16.1	16.9	17.7	18.5	19.3	20.0	20.8	21.7	22.5	
26.1	8.3	8.9	9.6	10.3	11.0	11.7	12.4	13.1	13.9	14.6	15.4	16.1	16.9	17.7	18.4	19.2	20.0	20.8	21.6	22.5	
26.2	8.3	8.9	9.6	10.3	11.0	11.7	12.4	13.1	13.9	14.6	15.4	16.1	16.9	17.7	18.4	19.2	20.0	20.8	21.6	22.4	
26.3	8.3	8.9	9.6	10.3	11.0	11.7	12.4	13.1	13.9	14.6	15.3	16.1	16.9	17.6	18.4	19.2	20.0	20.8	21.6	22.4	
26.4	8.3	8.9	9.6	10.3	11.0	11.7	12.4	13.1	13.8	14.6	15.3	16.1	16.8	17.6	18.4	19.2	20.0	20.8	21.6	22.4	
26.5	8.3	8.9	9.6	10.3	11.0	11.7	12.4	13.1	13.8	14.6	15.3	16.1	16.8	17.6	18.4	19.2	20.0	20.8	21.6	22.4	
26.6	8.2	8.9	9.6	10.3	11.0	11.7	12.4	13.1	13.8	14.6	15.3	16.1	16.8	17.6	18.4	19.1	19.9	20.7	21.5	22.4	
26.7	8.2	8.9	9.6	10.3	10.9	11.6	12.4	13.1	13.8	14.5	15.3	16.0	16.8	17.6	18.4	19.1	19.9	20.7	21.5	22.3	
26.8	8.2	8.9	9.6	10.2	10.9	11.6	12.3	13.1	13.8	14.5	15.3	16.0	16.8	17.6	18.3	19.1	19.9	20.7	21.5	22.3	
26.9	8.2	8.9	9.6	10.2	10.9	11.6	12.3	13.1	13.8	14.5	15.3	16.0	16.8	17.5	18.3	19.1	19.9	20.7	21.5	22.3	
27.0	8.2	8.9	9.5	10.2	10.9	11.6	12.3	13.0	13.8	14.5	15.3	16.0	16.8	17.5	18.3	19.1	19.9	20.7	21.5	22.3	
27.1	8.2	8.9	9.5	10.2	10.9	11.6	12.3	13.0	13.8	14.5	15.2	16.0	16.7	17.5	18.3	19.1	19.9	20.7	21.5	22.3	
27.2	8.2	8.9	9.5	10.2	10.9	11.6	12.3	13.0	13.7	14.5	15.2	16.0	16.7	17.5	18.3	19.1	19.8	20.6	21.4	22.2	
27.3	8.2	8.9	9.5	10.2	10.9	11.6	12.3	13.0	13.7	14.5	15.2	16.0	16.7	17.5	18.3	19.0	19.8	20.6	21.4	22.2	
27.4	8.2	8.8	9.5	10.2	10.9	11.6	12.3	13.0	13.7	14.5	15.2	16.0	16.7	17.5	18.2	19.0	19.8	20.6	21.4	22.2	
27.5	8.2	8.8	9.5	10.2	10.9	11.6	12.3	13.0	13.7	14.4	15.2	15.9	16.7	17.5	18.2	19.0	19.8	20.6	21.4	22.2	
27.6	8.2	8.8	9.5	10.2	10.9	11.6	12.3	13.0	13.7	14.4	15.2	15.9	16.7	17.4	18.2	19.0	19.8	20.6	21.4	22.2	
27.7	8.2	8.8	9.5	10.2	10.9	11.6	12.3	13.0	13.7	14.4	15.2	15.9	16.7	17.4	18.2	19.0	19.8	20.5	21.3	22.1	
27.8	8.2	8.8	9.5	10.2	10.8	11.5	12.2	13.0	13.7	14.4	15.2	15.9	16.7	17.4	18.2	19.0	19.7	20.5	21.3	22.1	
27.9	8.2	8.8	9.5	10.2	10.8	11.5	12.2	12.9	13.7	14.4	15.1	15.9	16.6	17.4	18.2	18.9	19.7	20.5	21.3	22.1	
28.0	8.1	8.8	9.5	10.1	10.8	11.5	12.2	12.9	13.7	14.4	15.1	15.9	16.6	17.4	18.2	18.9	19.7	20.5	21.3	22.1	
28.1	8.1	8.8	9.5	10.1	10.8	11.5	12.2	12.9	13.6	14.4	15.1	15.9	16.6	17.4	18.1	18.9	19.7	20.5	21.3	22.1	
28.2	8.1	8.8	9.5	10.1	10.8	11.5	12.2	12.9	13.6	14.4	15.1	15.8	16.6	17.4	18.1	18.9	19.7	20.5	21.3	22.1	
28.3	8.1	8.8	9.4	10.1	10.8	11.5	12.2	12.9	13.6	14.4	15.1	15.8	16.6	17.3	18.1	18.9	19.7	20.4	21.2	22.0	
28.4	8.1	8.8	9.4	10.1	10.8	11.5	12.2	12.9	13.6	14.3	15.1	15.8	16.6	17.3	18.1	18.9	19.6	20.4	21.2	22.0	

14 ACCESS TABLES

DIAMETER (INCHES) : 28.5 - 32.9
 HEIGHT (FEET) : 30 - 70

DBH (IN)	TOTAL HEIGHT (FEET)																			
	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68
28.5	8.1	8.8	9.4	10.1	10.8	11.5	12.2	12.9	13.6	14.3	15.1	15.8	16.6	17.3	18.1	18.9	19.6	20.4	21.2	22.0
28.6	8.1	8.8	9.4	10.1	10.8	11.5	12.2	12.9	13.6	14.3	15.1	15.8	16.5	17.3	18.1	18.8	19.6	20.4	21.2	22.0
28.7	8.1	8.8	9.4	10.1	10.8	11.5	12.2	12.9	13.6	14.3	15.0	15.8	16.5	17.3	18.1	18.8	19.6	20.4	21.2	22.0
28.8	8.1	8.7	9.4	10.1	10.8	11.5	12.1	12.9	13.6	14.3	15.0	15.8	16.5	17.3	18.0	18.8	19.6	20.4	21.2	22.0
28.9	8.1	8.7	9.4	10.1	10.8	11.4	12.1	12.8	13.6	14.3	15.0	15.8	16.5	17.3	18.0	18.8	19.6	20.4	21.1	21.9
29.0	8.1	8.7	9.4	10.1	10.7	11.4	12.1	12.8	13.6	14.3	15.0	15.7	16.5	17.3	18.0	18.8	19.6	20.3	21.1	21.9
29.1	8.1	8.7	9.4	10.1	10.7	11.4	12.1	12.8	13.5	14.3	15.0	15.7	16.5	17.2	18.0	18.8	19.5	20.3	21.1	21.9
29.2	8.1	8.7	9.4	10.0	10.7	11.4	12.1	12.8	13.5	14.3	15.0	15.7	16.5	17.2	18.0	18.8	19.5	20.3	21.1	21.9
29.3	8.1	8.7	9.4	10.0	10.7	11.4	12.1	12.8	13.5	14.2	15.0	15.7	16.5	17.2	18.0	18.7	19.5	20.3	21.1	21.9
29.4	8.1	8.7	9.4	10.0	10.7	11.4	12.1	12.8	13.5	14.2	15.0	15.7	16.4	17.2	18.0	18.7	19.5	20.3	21.1	21.9
29.5	8.1	8.7	9.4	10.0	10.7	11.4	12.1	12.8	13.5	14.2	15.0	15.7	16.4	17.2	17.9	18.7	19.5	20.3	21.0	21.8
29.6	8.0	8.7	9.4	10.0	10.7	11.4	12.1	12.8	13.5	14.2	14.9	15.7	16.4	17.2	17.9	18.7	19.5	20.2	21.0	21.8
29.7	8.0	8.7	9.3	10.0	10.7	11.4	12.1	12.8	13.5	14.2	14.9	15.7	16.4	17.2	17.9	18.7	19.5	20.2	21.0	21.8
29.8	8.0	8.7	9.3	10.0	10.7	11.4	12.1	12.8	13.5	14.2	14.9	15.7	16.4	17.1	17.9	18.7	19.4	20.2	21.0	21.8
29.9	8.0	8.7	9.3	10.0	10.7	11.4	12.0	12.8	13.5	14.2	14.9	15.6	16.4	17.1	17.9	18.7	19.4	20.2	21.0	21.8
30.0	8.0	8.7	9.3	10.0	10.7	11.3	12.0	12.7	13.5	14.2	14.9	15.6	16.4	17.1	17.9	18.6	19.4	20.2	21.0	21.8
30.1	8.0	8.7	9.3	10.0	10.7	11.3	12.0	12.7	13.4	14.2	14.9	15.6	16.4	17.1	17.9	18.6	19.4	20.2	21.0	21.7
30.2	8.0	8.7	9.3	10.0	10.6	11.3	12.0	12.7	13.4	14.2	14.9	15.6	16.3	17.1	17.9	18.6	19.4	20.2	20.9	21.7
30.3	8.0	8.6	9.3	10.0	10.6	11.3	12.0	12.7	13.4	14.1	14.9	15.6	16.3	17.1	17.8	18.6	19.4	20.1	20.9	21.7
30.4	8.0	8.6	9.3	10.0	10.6	11.3	12.0	12.7	13.4	14.1	14.9	15.6	16.3	17.1	17.8	18.6	19.4	20.1	20.9	21.7
30.5		8.6	9.3	10.0	10.6	11.3	12.0	12.7	13.4	14.1	14.8	15.6	16.3	17.1	17.8	18.6	19.3	20.1	20.9	21.7
30.6		8.6	9.3	9.9	10.6	11.3	12.0	12.7	13.4	14.1	14.8	15.6	16.3	17.0	17.8	18.6	19.3	20.1	20.9	21.7
30.7		8.6	9.3	9.9	10.6	11.3	12.0	12.7	13.4	14.1	14.8	15.6	16.3	17.0	17.8	18.5	19.3	20.1	20.9	21.6
30.8		8.6	9.3	9.9	10.6	11.3	12.0	12.7	13.4	14.1	14.8	15.5	16.3	17.0	17.8	18.5	19.3	20.1	20.8	21.6
30.9		8.6	9.3	9.9	10.6	11.3	12.0	12.7	13.4	14.1	14.8	15.5	16.3	17.0	17.8	18.5	19.3	20.1	20.8	21.6
31.0		8.6	9.3	9.9	10.6	11.3	12.0	12.7	13.4	14.1	14.8	15.5	16.3	17.0	17.8	18.5	19.3	20.0	20.8	21.6
31.1		8.6	9.3	9.9	10.6	11.3	11.9	12.6	13.3	14.1	14.8	15.5	16.2	17.0	17.7	18.5	19.3	20.0	20.8	21.6
31.2		8.6	9.2	9.9	10.6	11.3	11.9	12.6	13.3	14.1	14.8	15.5	16.2	17.0	17.7	18.5	19.2	20.0	20.8	21.6
31.3		8.6	9.2	9.9	10.6	11.2	11.9	12.6	13.3	14.0	14.8	15.5	16.2	17.0	17.7	18.5	19.2	20.0	20.8	21.6
31.4		8.6	9.2	9.9	10.6	11.2	11.9	12.6	13.3	14.0	14.7	15.5	16.2	17.0	17.7	18.5	19.2	20.0	20.8	21.5
31.5		8.6	9.2	9.9	10.6	11.2	11.9	12.6	13.3	14.0	14.7	15.5	16.2	16.9	17.7	18.4	19.2	20.0	20.7	21.5
31.6		8.6	9.2	9.9	10.5	11.2	11.9	12.6	13.3	14.0	14.7	15.5	16.2	16.9	17.7	18.4	19.2	20.0	20.7	21.5
31.7		8.6	9.2	9.9	10.5	11.2	11.9	12.6	13.3	14.0	14.7	15.4	16.2	16.9	17.7	18.4	19.2	19.9	20.7	21.5
31.8		8.6	9.2	9.9	10.5	11.2	11.9	12.6	13.3	14.0	14.7	15.4	16.2	16.9	17.7	18.4	19.2	19.9	20.7	21.5
31.9		8.6	9.2	9.9	10.5	11.2	11.9	12.6	13.3	14.0	14.7	15.4	16.2	16.9	17.6	18.4	19.2	19.9	20.7	21.5
32.0		8.5	9.2	9.8	10.5	11.2	11.9	12.6	13.3	14.0	14.7	15.4	16.1	16.9	17.6	18.4	19.1	19.9	20.7	21.5
32.1		8.5	9.2	9.8	10.5	11.2	11.9	12.6	13.3	14.0	14.7	15.4	16.1	16.9	17.6	18.4	19.1	19.9	20.7	21.4
32.2		8.5	9.2	9.8	10.5	11.2	11.9	12.5	13.2	14.0	14.7	15.4	16.1	16.9	17.6	18.4	19.1	19.9	20.6	21.4
32.3		8.5	9.2	9.8	10.5	11.2	11.8	12.5	13.2	13.9	14.7	15.4	16.1	16.8	17.6	18.3	19.1	19.9	20.6	21.4
32.4		8.5	9.2	9.8	10.5	11.2	11.8	12.5	13.2	13.9	14.7	15.4	16.1	16.8	17.6	18.3	19.1	19.9	20.6	21.4
32.5		8.5	9.2	9.8	10.5	11.2	11.8	12.5	13.2	13.9	14.6	15.4	16.1	16.8	17.6	18.3	19.1	19.8	20.6	21.4
32.6		8.5	9.2	9.8	10.5	11.1	11.8	12.5	13.2	13.9	14.6	15.4	16.1	16.8	17.6	18.3	19.1	19.8	20.6	21.4
32.7		8.5	9.2	9.8	10.5	11.1	11.8	12.5	13.2	13.9	14.6	15.3	16.1	16.8	17.5	18.3	19.1	19.8	20.6	21.4
32.8		8.5	9.1	9.8	10.5	11.1	11.8	12.5	13.2	13.9	14.6	15.3	16.1	16.8	17.5	18.3	19.0	19.8	20.6	21.3
32.9		8.5	9.1	9.8	10.5	11.1	11.8	12.5	13.2	13.9	14.6	15.3	16.0	16.8	17.5	18.3	19.0	19.8	20.6	21.3

18 ACCESS TABLES

DIAMETER (INCHES) : 46.5 - 50.0
 HEIGHT (FEET) : 30 - 70

DBH (IN)	TOTAL HEIGHT (FEET)																				
	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
46.5				8.5	9.1	9.7	10.4	11.0	11.6	12.3	12.9	13.6	14.3	14.9	15.6	16.3	17.0	17.7	18.4	19.1	19.9
46.6				8.5	9.1	9.7	10.4	11.0	11.6	12.3	12.9	13.6	14.3	14.9	15.6	16.3	17.0	17.7	18.4	19.1	19.9
46.7				8.5	9.1	9.7	10.3	11.0	11.6	12.3	12.9	13.6	14.3	14.9	15.6	16.3	17.0	17.7	18.4	19.1	19.8
46.8				8.5	9.1	9.7	10.3	11.0	11.6	12.3	12.9	13.6	14.2	14.9	15.6	16.3	17.0	17.7	18.4	19.1	19.8
46.9				8.5	9.1	9.7	10.3	11.0	11.6	12.3	12.9	13.6	14.2	14.9	15.6	16.3	17.0	17.7	18.4	19.1	19.8
47.0				8.5	9.1	9.7	10.3	11.0	11.6	12.3	12.9	13.6	14.2	14.9	15.6	16.3	17.0	17.7	18.4	19.1	19.8
47.1				8.5	9.1	9.7	10.3	11.0	11.6	12.2	12.9	13.6	14.2	14.9	15.6	16.3	17.0	17.7	18.4	19.1	19.8
47.2				8.5	9.1	9.7	10.3	11.0	11.6	12.2	12.9	13.6	14.2	14.9	15.6	16.3	17.0	17.7	18.4	19.1	19.8
47.3				8.5	9.1	9.7	10.3	11.0	11.6	12.2	12.9	13.6	14.2	14.9	15.6	16.3	17.0	17.7	18.4	19.1	19.8
47.4				8.5	9.1	9.7	10.3	10.9	11.6	12.2	12.9	13.5	14.2	14.9	15.6	16.3	16.9	17.6	18.4	19.1	19.8
47.5				8.5	9.1	9.7	10.3	10.9	11.6	12.2	12.9	13.5	14.2	14.9	15.6	16.2	16.9	17.6	18.3	19.1	19.8
47.6				8.5	9.1	9.7	10.3	10.9	11.6	12.2	12.9	13.5	14.2	14.9	15.6	16.2	16.9	17.6	18.3	19.1	19.8
47.7				8.5	9.1	9.7	10.3	10.9	11.6	12.2	12.9	13.5	14.2	14.9	15.5	16.2	16.9	17.6	18.3	19.0	19.8
47.8				8.5	9.1	9.7	10.3	10.9	11.6	12.2	12.9	13.5	14.2	14.9	15.5	16.2	16.9	17.6	18.3	19.0	19.8
47.9				8.5	9.1	9.7	10.3	10.9	11.6	12.2	12.9	13.5	14.2	14.9	15.5	16.2	16.9	17.6	18.3	19.0	19.7
48.0				8.5	9.1	9.7	10.3	10.9	11.6	12.2	12.9	13.5	14.2	14.8	15.5	16.2	16.9	17.6	18.3	19.0	19.7
48.1				8.5	9.1	9.7	10.3	10.9	11.6	12.2	12.8	13.5	14.2	14.8	15.5	16.2	16.9	17.6	18.3	19.0	19.7
48.2				8.4	9.1	9.7	10.3	10.9	11.5	12.2	12.8	13.5	14.2	14.8	15.5	16.2	16.9	17.6	18.3	19.0	19.7
48.3				8.4	9.0	9.7	10.3	10.9	11.5	12.2	12.8	13.5	14.2	14.8	15.5	16.2	16.9	17.6	18.3	19.0	19.7
48.4				8.4	9.0	9.7	10.3	10.9	11.5	12.2	12.8	13.5	14.2	14.8	15.5	16.2	16.9	17.6	18.3	19.0	19.7
48.5				8.4	9.0	9.7	10.3	10.9	11.5	12.2	12.8	13.5	14.1	14.8	15.5	16.2	16.9	17.6	18.3	19.0	19.7
48.6				8.4	9.0	9.6	10.3	10.9	11.5	12.2	12.8	13.5	14.1	14.8	15.5	16.2	16.9	17.6	18.3	19.0	19.7
48.7				8.4	9.0	9.6	10.3	10.9	11.5	12.2	12.8	13.5	14.1	14.8	15.5	16.2	16.9	17.6	18.3	19.0	19.7
48.8				8.4	9.0	9.6	10.3	10.9	11.5	12.2	12.8	13.5	14.1	14.8	15.5	16.2	16.9	17.5	18.2	19.0	19.7
48.9				8.4	9.0	9.6	10.3	10.9	11.5	12.2	12.8	13.5	14.1	14.8	15.5	16.2	16.8	17.5	18.2	18.9	19.7
49.0				8.4	9.0	9.6	10.2	10.9	11.5	12.2	12.8	13.5	14.1	14.8	15.5	16.1	16.8	17.5	18.2	18.9	19.7
49.1				8.4	9.0	9.6	10.2	10.9	11.5	12.1	12.8	13.5	14.1	14.8	15.5	16.1	16.8	17.5	18.2	18.9	19.6
49.2				8.4	9.0	9.6	10.2	10.9	11.5	12.1	12.8	13.4	14.1	14.8	15.5	16.1	16.8	17.5	18.2	18.9	19.6
49.3				8.4	9.0	9.6	10.2	10.9	11.5	12.1	12.8	13.4	14.1	14.8	15.4	16.1	16.8	17.5	18.2	18.9	19.6
49.4				8.4	9.0	9.6	10.2	10.9	11.5	12.1	12.8	13.4	14.1	14.8	15.4	16.1	16.8	17.5	18.2	18.9	19.6
49.5				8.4	9.0	9.6	10.2	10.9	11.5	12.1	12.8	13.4	14.1	14.8	15.4	16.1	16.8	17.5	18.2	18.9	19.6
49.6				8.4	9.0	9.6	10.2	10.8	11.5	12.1	12.8	13.4	14.1	14.8	15.4	16.1	16.8	17.5	18.2	18.9	19.6
49.7				8.4	9.0	9.6	10.2	10.8	11.5	12.1	12.8	13.4	14.1	14.7	15.4	16.1	16.8	17.5	18.2	18.9	19.6
49.8				8.4	9.0	9.6	10.2	10.8	11.5	12.1	12.8	13.4	14.1	14.7	15.4	16.1	16.8	17.5	18.2	18.9	19.6
49.9				8.4	9.0	9.6	10.2	10.8	11.5	12.1	12.8	13.4	14.1	14.7	15.4	16.1	16.8	17.5	18.2	18.9	19.6
50.0				8.4	9.0	9.6	10.2	10.8	11.5	12.1	12.7	13.4	14.1	14.7	15.4	16.1	16.8	17.5	18.2	18.9	19.6

DIAMETER (INCHES) : 6.0 - 10.4
 HEIGHT (FEET) : 70 - 110

DBH	TOTAL HEIGHT (FEET)																				
	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
(IN)	TARIF NUMBER																				
6.0	37.8	39.2	40.6	42.0	43.4	44.8	46.2	47.7	49.1	50.6	52.1	53.5	55.0	56.5	58.0	59.5	61.1	62.6	64.1	65.7	67.2
6.1	37.4	38.8	40.2	41.6	43.0	44.4	45.8	47.2	48.7	50.1	51.6	53.0	54.5	56.0	57.5	59.0	60.5	62.0	63.5	65.1	66.6
6.2	37.1	38.5	39.8	41.2	42.6	44.0	45.4	46.8	48.2	49.7	51.1	52.6	54.0	55.5	57.0	58.5	60.0	61.5	63.0	64.5	66.0
6.3	36.8	38.1	39.5	40.9	42.2	43.6	45.0	46.4	47.8	49.2	50.7	52.1	53.6	55.0	56.5	58.0	59.4	60.9	62.4	63.9	65.5
6.4	36.5	37.8	39.2	40.5	41.9	43.3	44.6	46.0	47.4	48.8	50.3	51.7	53.1	54.6	56.0	57.5	58.9	60.4	61.9	63.4	64.9
6.5	36.2	37.5	38.8	40.2	41.5	42.9	44.3	45.7	47.0	48.4	49.8	51.3	52.7	54.1	55.6	57.0	58.5	59.9	61.4	62.9	64.4
6.6	35.9	37.2	38.5	39.9	41.2	42.6	43.9	45.3	46.7	48.1	49.5	50.9	52.3	53.7	55.1	56.6	58.0	59.5	60.9	62.4	63.9
6.7	35.6	36.9	38.2	39.6	40.9	42.2	43.6	44.9	46.3	47.7	49.1	50.5	51.9	53.3	54.7	56.1	57.6	59.0	60.4	61.9	63.4
6.8	35.4	36.6	37.9	39.3	40.6	41.9	43.3	44.6	46.0	47.3	48.7	50.1	51.5	52.9	54.3	55.7	57.1	58.6	60.0	61.4	62.9
6.9	35.1	36.4	37.7	39.0	40.3	41.6	42.9	44.3	45.6	47.0	48.3	49.7	51.1	52.5	53.9	55.3	56.7	58.1	59.6	61.0	62.4
7.0	34.8	36.1	37.4	38.7	40.0	41.3	42.6	44.0	45.3	46.6	48.0	49.4	50.7	52.1	53.5	54.9	56.3	57.7	59.1	60.6	62.0
7.1	34.6	35.9	37.1	38.4	39.7	41.0	42.3	43.7	45.0	46.3	47.7	49.0	50.4	51.8	53.1	54.5	55.9	57.3	58.7	60.1	61.6
7.2	34.4	35.6	36.9	38.2	39.5	40.8	42.1	43.4	44.7	46.0	47.4	48.7	50.0	51.4	52.8	54.2	55.5	56.9	58.3	59.7	61.2
7.3	34.1	35.4	36.7	37.9	39.2	40.5	41.8	43.1	44.4	45.7	47.0	48.4	49.7	51.1	52.4	53.8	55.2	56.6	57.9	59.3	60.7
7.4	33.9	35.2	36.4	37.7	38.9	40.2	41.5	42.8	44.1	45.4	46.7	48.1	49.4	50.7	52.1	53.5	54.8	56.2	57.6	59.0	60.4
7.5	33.7	34.9	36.2	37.4	38.7	40.0	41.2	42.5	43.8	45.1	46.4	47.8	49.1	50.4	51.8	53.1	54.5	55.8	57.2	58.6	60.0
7.6	33.5	34.7	36.0	37.2	38.5	39.7	41.0	42.3	43.6	44.9	46.2	47.5	48.8	50.1	51.5	52.8	54.1	55.5	56.9	58.2	59.6
7.7	33.3	34.5	35.8	37.0	38.2	39.5	40.7	42.0	43.3	44.6	45.9	47.2	48.5	49.8	51.1	52.5	53.8	55.2	56.5	57.9	59.3
7.8	33.1	34.3	35.5	36.8	38.0	39.3	40.5	41.8	43.0	44.3	45.6	46.9	48.2	49.5	50.8	52.2	53.5	54.8	56.2	57.5	58.9
7.9	32.9	34.1	35.3	36.6	37.8	39.0	40.3	41.5	42.8	44.1	45.4	46.6	47.9	49.2	50.6	51.9	53.2	54.5	55.9	57.2	58.6
8.0	32.7	33.9	35.1	36.4	37.6	38.8	40.1	41.3	42.6	43.8	45.1	46.4	47.7	49.0	50.3	51.6	52.9	54.2	55.6	56.9	58.2
8.1	32.6	33.7	34.9	36.2	37.4	38.6	39.8	41.1	42.3	43.6	44.9	46.1	47.4	48.7	50.0	51.3	52.6	53.9	55.3	56.6	57.9
8.2	32.4	33.6	34.8	36.0	37.2	38.4	39.6	40.9	42.1	43.4	44.6	45.9	47.2	48.4	49.7	51.0	52.3	53.6	55.0	56.3	57.6
8.3	32.2	33.4	34.6	35.8	37.0	38.2	39.4	40.6	41.9	43.1	44.4	45.6	46.9	48.2	49.5	50.8	52.0	53.4	54.7	56.0	57.3
8.4	32.0	33.2	34.4	35.6	36.8	38.0	39.2	40.4	41.7	42.9	44.1	45.4	46.7	47.9	49.2	50.5	51.8	53.1	54.4	55.7	57.0
8.5	31.9	33.1	34.2	35.4	36.6	37.8	39.0	40.2	41.5	42.7	43.9	45.2	46.4	47.7	49.0	50.2	51.5	52.8	54.1	55.4	56.7
8.6	31.7	32.9	34.1	35.2	36.4	37.6	38.8	40.0	41.2	42.5	43.7	44.9	46.2	47.5	48.7	50.0	51.3	52.5	53.8	55.1	56.4
8.7	31.6	32.7	33.9	35.1	36.2	37.4	38.6	39.8	41.0	42.3	43.5	44.7	46.0	47.2	48.5	49.7	51.0	52.3	53.6	54.9	56.2
8.8	31.4	32.6	33.7	34.9	36.1	37.3	38.4	39.6	40.8	42.1	43.3	44.5	45.8	47.0	48.2	49.5	50.8	52.0	53.3	54.6	55.9
8.9	31.3	32.4	33.6	34.7	35.9	37.1	38.3	39.5	40.7	41.9	43.1	44.3	45.5	46.8	48.0	49.3	50.5	51.8	53.1	54.4	55.6
9.0	31.1	32.3	33.4	34.6	35.7	36.9	38.1	39.3	40.5	41.7	42.9	44.1	45.3	46.6	47.8	49.0	50.3	51.6	52.8	54.1	55.4
9.1	31.0	32.1	33.3	34.4	35.6	36.7	37.9	39.1	40.3	41.5	42.7	43.9	45.1	46.3	47.6	48.8	50.1	51.3	52.6	53.9	55.1
9.2	30.9	32.0	33.1	34.3	35.4	36.6	37.7	38.9	40.1	41.3	42.5	43.7	44.9	46.1	47.4	48.6	49.9	51.1	52.4	53.6	54.9
9.3	30.7	31.8	33.0	34.1	35.3	36.4	37.6	38.8	39.9	41.1	42.3	43.5	44.7	45.9	47.2	48.4	49.6	50.9	52.1	53.4	54.6
9.4	30.6	31.7	32.8	34.0	35.1	36.3	37.4	38.6	39.8	40.9	42.1	43.3	44.5	45.7	47.0	48.2	49.4	50.7	51.9	53.2	54.4
9.5	30.5	31.6	32.7	33.8	35.0	36.1	37.3	38.4	39.6	40.8	42.0	43.1	44.3	45.6	46.8	48.0	49.2	50.4	51.7	52.9	54.2
9.6	30.3	31.4	32.6	33.7	34.8	36.0	37.1	38.3	39.4	40.6	41.8	43.0	44.2	45.4	46.6	47.8	49.0	50.2	51.5	52.7	54.0
9.7	30.2	31.3	32.4	33.5	34.7	35.8	37.0	38.1	39.3	40.4	41.6	42.8	44.0	45.2	46.4	47.6	48.8	50.0	51.3	52.5	53.7
9.8	30.1	31.2	32.3	33.4	34.5	35.7	36.8	38.0	39.1	40.3	41.4	42.6	43.8	45.0	46.2	47.4	48.6	49.8	51.1	52.3	53.5
9.9	30.0	31.1	32.2	33.3	34.4	35.5	36.7	37.8	39.0	40.1	41.3	42.5	43.6	44.8	46.0	47.2	48.4	49.6	50.9	52.1	53.3
10.0	29.9	30.9	32.0	33.2	34.3	35.4	36.5	37.7	38.8	40.0	41.1	42.3	43.5	44.6	45.8	47.0	48.2	49.4	50.7	51.9	53.1
10.1	29.7	30.8	31.9	33.0	34.1	35.3	36.4	37.5	38.7	39.8	41.0	42.1	43.3	44.5	45.7	46.9	48.1	49.3	50.5	51.7	52.9
10.2	29.6	30.7	31.8	32.9	34.0	35.1	36.2	37.4	38.5	39.7	40.8	42.0	43.1	44.3	45.5	46.7	47.9	49.1	50.3	51.5	52.7
10.3	29.5	30.6	31.7	32.8	33.9	35.0	36.1	37.2	38.4	39.5	40.7	41.8	43.0	44.1	45.3	46.5	47.7	48.9	50.1	51.3	52.5
10.4	29.4	30.5	31.6	32.7	33.8	34.9	36.0	37.1	38.2	39.4	40.5	41.7	42.8	44.0	45.2	46.3	47.5	48.7	49.9	51.1	52.3

20 ACCESS TABLES

DIAMETER (INCHES) : 10.5 - 14.9
 HEIGHT (FEET) : 70 - 110

DBH	TOTAL HEIGHT (FEET)																				
	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
(IN)	-----																				
	----- TARIFF NUMBER -----																				
10.5	29.3	30.4	31.5	32.5	33.6	34.7	35.9	37.0	38.1	39.2	40.4	41.5	42.7	43.8	45.0	46.2	47.3	48.5	49.7	50.9	52.1
10.6	29.2	30.3	31.3	32.4	33.5	34.6	35.7	36.8	38.0	39.1	40.2	41.4	42.5	43.7	44.8	46.0	47.2	48.4	49.6	50.7	51.9
10.7	29.1	30.2	31.2	32.3	33.4	34.5	35.6	36.7	37.8	39.0	40.1	41.2	42.4	43.5	44.7	45.8	47.0	48.2	49.4	50.6	51.8
10.8	29.0	30.1	31.1	32.2	33.3	34.4	35.5	36.6	37.7	38.8	39.9	41.1	42.2	43.4	44.5	45.7	46.9	48.0	49.2	50.4	51.6
10.9	28.9	30.0	31.0	32.1	33.2	34.3	35.4	36.5	37.6	38.7	39.8	40.9	42.1	43.2	44.4	45.5	46.7	47.9	49.0	50.2	51.4
11.0	28.8	29.9	30.9	32.0	33.1	34.1	35.2	36.3	37.4	38.6	39.7	40.8	41.9	43.1	44.2	45.4	46.5	47.7	48.9	50.1	51.2
11.1	28.7	29.8	30.8	31.9	33.0	34.0	35.1	36.2	37.3	38.4	39.6	40.7	41.8	42.9	44.1	45.2	46.4	47.6	48.7	49.9	51.1
11.2	28.6	29.7	30.7	31.8	32.8	33.9	35.0	36.1	37.2	38.3	39.4	40.5	41.7	42.8	43.9	45.1	46.2	47.4	48.6	49.7	50.9
11.3	28.5	29.6	30.6	31.7	32.7	33.8	34.9	36.0	37.1	38.2	39.3	40.4	41.5	42.7	43.8	44.9	46.1	47.2	48.4	49.6	50.7
11.4	28.4	29.5	30.5	31.6	32.6	33.7	34.8	35.9	37.0	38.1	39.2	40.3	41.4	42.5	43.7	44.8	45.9	47.1	48.3	49.4	50.6
11.5	28.3	29.4	30.4	31.5	32.5	33.6	34.7	35.8	36.9	37.9	39.1	40.2	41.3	42.4	43.5	44.7	45.8	47.0	48.1	49.3	50.4
11.6	28.3	29.3	30.3	31.4	32.4	33.5	34.6	35.7	36.7	37.8	38.9	40.0	41.2	42.3	43.4	44.5	45.7	46.8	48.0	49.1	50.3
11.7	28.2	29.2	30.2	31.3	32.3	33.4	34.5	35.5	36.6	37.7	38.8	39.9	41.0	42.1	43.3	44.4	45.5	46.7	47.8	49.0	50.1
11.8	28.1	29.1	30.2	31.2	32.2	33.3	34.4	35.4	36.5	37.6	38.7	39.8	40.9	42.0	43.1	44.3	45.4	46.5	47.7	48.8	50.0
11.9	28.0	29.0	30.1	31.1	32.2	33.2	34.3	35.3	36.4	37.5	38.6	39.7	40.8	41.9	43.0	44.1	45.3	46.4	47.5	48.7	49.8
12.0	27.9	28.9	30.0	31.0	32.1	33.1	34.2	35.2	36.3	37.4	38.5	39.6	40.7	41.8	42.9	44.0	45.1	46.3	47.4	48.5	49.7
12.1	27.8	28.9	29.9	30.9	32.0	33.0	34.1	35.1	36.2	37.3	38.4	39.5	40.5	41.7	42.8	43.9	45.0	46.1	47.3	48.4	49.5
12.2	27.8	28.8	29.8	30.8	31.9	32.9	34.0	35.0	36.1	37.2	38.3	39.3	40.4	41.5	42.6	43.8	44.9	46.0	47.1	48.3	49.4
12.3	27.7	28.7	29.7	30.8	31.8	32.8	33.9	34.9	36.0	37.1	38.1	39.2	40.3	41.4	42.5	43.6	44.7	45.9	47.0	48.1	49.3
12.4	27.6	28.6	29.6	30.7	31.7	32.7	33.8	34.8	35.9	37.0	38.0	39.1	40.2	41.3	42.4	43.5	44.6	45.7	46.9	48.0	49.1
12.5	27.5	28.5	29.6	30.6	31.6	32.7	33.7	34.7	35.8	36.9	37.9	39.0	40.1	41.2	42.3	43.4	44.5	45.6	46.7	47.9	49.0
12.6	27.5	28.5	29.5	30.5	31.5	32.6	33.6	34.7	35.7	36.8	37.8	38.9	40.0	41.1	42.2	43.3	44.4	45.5	46.6	47.7	48.9
12.7	27.4	28.4	29.4	30.4	31.4	32.5	33.5	34.6	35.6	36.7	37.7	38.8	39.9	41.0	42.1	43.2	44.3	45.4	46.5	47.6	48.7
12.8	27.3	28.3	29.3	30.3	31.4	32.4	33.4	34.5	35.5	36.6	37.6	38.7	39.8	40.9	42.0	43.0	44.1	45.3	46.4	47.5	48.6
12.9	27.3	28.2	29.3	30.3	31.3	32.3	33.3	34.4	35.4	36.5	37.5	38.6	39.7	40.8	41.8	42.9	44.0	45.1	46.2	47.4	48.5
13.0	27.2	28.2	29.2	30.2	31.2	32.2	33.3	34.3	35.3	36.4	37.4	38.5	39.6	40.7	41.7	42.8	43.9	45.0	46.1	47.2	48.4
13.1	27.1	28.1	29.1	30.1	31.1	32.1	33.2	34.2	35.2	36.3	37.4	38.4	39.5	40.6	41.6	42.7	43.8	44.9	46.0	47.1	48.2
13.2	27.0	28.0	29.0	30.0	31.0	32.1	33.1	34.1	35.2	36.2	37.3	38.3	39.4	40.5	41.5	42.6	43.7	44.8	45.9	47.0	48.1
13.3	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.1	36.1	37.2	38.2	39.3	40.4	41.4	42.5	43.6	44.7	45.8	46.9	48.0
13.4	26.9	27.9	28.9	29.9	30.9	31.9	32.9	34.0	35.0	36.0	37.1	38.1	39.2	40.3	41.3	42.4	43.5	44.6	45.7	46.8	47.9
13.5	26.8	27.8	28.8	29.8	30.8	31.8	32.8	33.9	34.9	35.9	37.0	38.0	39.1	40.2	41.2	42.3	43.4	44.5	45.6	46.7	47.8
13.6	26.8	27.8	28.8	29.7	30.7	31.8	32.8	33.8	34.8	35.9	36.9	37.9	39.0	40.1	41.1	42.2	43.3	44.4	45.5	46.5	47.7
13.7	26.7	27.7	28.7	29.7	30.7	31.7	32.7	33.7	34.7	35.8	36.8	37.9	38.9	40.0	41.0	42.1	43.2	44.3	45.3	46.4	47.5
13.8	26.7	27.6	28.6	29.6	30.6	31.6	32.6	33.6	34.7	35.7	36.7	37.8	38.8	39.9	40.9	42.0	43.1	44.2	45.2	46.3	47.4
13.9	26.6	27.6	28.6	29.5	30.5	31.5	32.5	33.6	34.6	35.6	36.6	37.7	38.7	39.8	40.8	41.9	43.0	44.1	45.1	46.2	47.3
14.0	26.5	27.5	28.5	29.5	30.5	31.5	32.5	33.5	34.5	35.5	36.6	37.6	38.6	39.7	40.7	41.8	42.9	44.0	45.0	46.1	47.2
14.1	26.5	27.4	28.4	29.4	30.4	31.4	32.4	33.4	34.4	35.4	36.5	37.5	38.6	39.6	40.7	41.7	42.8	43.9	44.9	46.0	47.1
14.2	26.4	27.4	28.4	29.3	30.3	31.3	32.3	33.3	34.3	35.4	36.4	37.4	38.5	39.5	40.6	41.6	42.7	43.8	44.8	45.9	47.0
14.3	26.4	27.3	28.3	29.3	30.3	31.3	32.3	33.3	34.3	35.3	36.3	37.3	38.4	39.4	40.5	41.5	42.6	43.7	44.7	45.8	46.9
14.4	26.3	27.3	28.2	29.2	30.2	31.2	32.2	33.2	34.2	35.2	36.2	37.3	38.3	39.3	40.4	41.4	42.5	43.6	44.6	45.7	46.8
14.5	26.2	27.2	28.2	29.1	30.1	31.1	32.1	33.1	34.1	35.1	36.2	37.2	38.2	39.3	40.3	41.4	42.4	43.5	44.5	45.6	46.7
14.6	26.2	27.1	28.1	29.1	30.1	31.1	32.0	33.0	34.0	35.1	36.1	37.1	38.1	39.2	40.2	41.3	42.3	43.4	44.4	45.5	46.6
14.7	26.1	27.1	28.1	29.0	30.0	31.0	32.0	33.0	34.0	35.0	36.0	37.0	38.1	39.1	40.1	41.2	42.2	43.3	44.4	45.4	46.5
14.8	26.1	27.0	28.0	29.0	29.9	30.9	31.9	32.9	33.9	34.9	35.9	37.0	38.0	39.0	40.0	41.1	42.1	43.2	44.3	45.3	46.4
14.9	26.0	27.0	27.9	28.9	29.9	30.9	31.8	32.8	33.8	34.8	35.9	36.9	37.9	38.9	40.0	41.0	42.1	43.1	44.2	45.2	46.3

DIAMETER (INCHES) : 15.0 - 19.4
 HEIGHT (FEET) : 70 - 110

DBH	TOTAL HEIGHT (FEET)																				
	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
(IN)	TARIF NUMBER																				
15.0	26.0	26.9	27.9	28.8	29.8	30.8	31.8	32.8	33.8	34.8	35.8	36.8	37.8	38.9	39.9	40.9	42.0	43.0	44.1	45.1	46.2
15.1	25.9	26.9	27.8	28.8	29.8	30.7	31.7	32.7	33.7	34.7	35.7	36.7	37.7	38.8	39.8	40.8	41.9	42.9	44.0	45.1	46.1
15.2	25.9	26.8	27.8	28.7	29.7	30.7	31.7	32.6	33.6	34.6	35.6	36.7	37.7	38.7	39.7	40.8	41.8	42.9	43.9	45.0	46.0
15.3	25.8	26.8	27.7	28.7	29.6	30.6	31.6	32.6	33.6	34.6	35.6	36.6	37.6	38.6	39.6	40.7	41.7	42.8	43.8	44.9	45.9
15.4	25.8	26.7	27.7	28.6	29.6	30.6	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.6	40.6	41.6	42.7	43.7	44.8	45.8
15.5	25.7	26.7	27.6	28.6	29.5	30.5	31.5	32.4	33.4	34.4	35.4	36.4	37.4	38.5	39.5	40.5	41.6	42.6	43.6	44.7	45.8
15.6	25.7	26.6	27.6	28.5	29.5	30.4	31.4	32.4	33.4	34.4	35.4	36.4	37.4	38.4	39.4	40.4	41.5	42.5	43.6	44.6	45.7
15.7	25.6	26.6	27.5	28.5	29.4	30.4	31.3	32.3	33.3	34.3	35.3	36.3	37.3	38.3	39.3	40.4	41.4	42.4	43.5	44.5	45.6
15.8	25.6	26.5	27.5	28.4	29.4	30.3	31.3	32.3	33.2	34.2	35.2	36.2	37.2	38.2	39.3	40.3	41.3	42.4	43.4	44.4	45.5
15.9	25.5	26.5	27.4	28.3	29.3	30.3	31.2	32.2	33.2	34.2	35.2	36.2	37.2	38.2	39.2	40.2	41.2	42.3	43.3	44.4	45.4
16.0	25.5	26.4	27.3	28.3	29.2	30.2	31.2	32.1	33.1	34.1	35.1	36.1	37.1	38.1	39.1	40.1	41.2	42.2	43.2	44.3	45.3
16.1	25.4	26.4	27.3	28.2	29.2	30.2	31.1	32.1	33.1	34.0	35.0	36.0	37.0	38.0	39.1	40.1	41.1	42.1	43.2	44.2	45.2
16.2	25.4	26.3	27.3	28.2	29.1	30.1	31.1	32.0	33.0	34.0	35.0	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.1	44.1	45.2
16.3	25.3	26.3	27.2	28.1	29.1	30.0	31.0	32.0	32.9	33.9	34.9	35.9	36.9	37.9	38.9	39.9	40.9	42.0	43.0	44.0	45.1
16.4	25.3	26.2	27.2	28.1	29.0	30.0	30.9	31.9	32.9	33.9	34.8	35.8	36.8	37.8	38.8	39.9	40.9	41.9	42.9	44.0	45.0
16.5	25.3	26.2	27.1	28.0	29.0	29.9	30.9	31.9	32.8	33.8	34.8	35.8	36.8	37.8	38.8	39.8	40.8	41.8	42.9	43.9	44.9
16.6	25.2	26.1	27.1	28.0	28.9	29.9	30.8	31.8	32.8	33.7	34.7	35.7	36.7	37.7	38.7	39.7	40.7	41.8	42.8	43.8	44.8
16.7	25.2	26.1	27.0	27.9	28.9	29.8	30.8	31.7	32.7	33.7	34.7	35.7	36.6	37.6	38.6	39.6	40.7	41.7	42.7	43.7	44.8
16.8	25.1	26.0	27.0	27.9	28.8	29.8	30.7	31.7	32.7	33.6	34.6	35.6	36.6	37.6	38.6	39.6	40.6	41.6	42.6	43.7	44.7
16.9	25.1	26.0	26.9	27.9	28.8	29.7	30.7	31.6	32.6	33.6	34.5	35.5	36.5	37.5	38.5	39.5	40.5	41.5	42.6	43.6	44.6
17.0	25.0	26.0	26.9	27.8	28.7	29.7	30.6	31.6	32.5	33.5	34.5	35.5	36.5	37.4	38.4	39.4	40.5	41.5	42.5	43.5	44.5
17.1	25.0	25.9	26.8	27.8	28.7	29.6	30.6	31.5	32.5	33.5	34.4	35.4	36.4	37.4	38.4	39.4	40.4	41.4	42.4	43.4	44.5
17.2	25.0	25.9	26.8	27.7	28.6	29.6	30.5	31.5	32.4	33.4	34.4	35.4	36.3	37.3	38.3	39.3	40.3	41.3	42.3	43.4	44.4
17.3	24.9	25.8	26.7	27.7	28.6	29.5	30.5	31.4	32.4	33.4	34.3	35.3	36.3	37.3	38.3	39.3	40.3	41.3	42.3	43.3	44.3
17.4	24.9	25.8	26.7	27.6	28.6	29.5	30.4	31.4	32.3	33.3	34.3	35.2	36.2	37.2	38.2	39.2	40.2	41.2	42.2	43.2	44.3
17.5	24.8	25.7	26.7	27.6	28.5	29.4	30.4	31.3	32.3	33.2	34.2	35.2	36.2	37.1	38.1	39.1	40.1	41.1	42.1	43.2	44.2
17.6	24.8	25.7	26.6	27.5	28.5	29.4	30.3	31.3	32.2	33.2	34.2	35.1	36.1	37.1	38.1	39.1	40.1	41.1	42.1	43.1	44.1
17.7	24.8	25.7	26.6	27.5	28.4	29.3	30.3	31.2	32.2	33.1	34.1	35.1	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
17.8	24.7	25.6	26.5	27.4	28.4	29.3	30.2	31.2	32.1	33.1	34.0	35.0	36.0	37.0	38.0	38.9	39.9	40.9	41.9	43.0	44.0
17.9	24.7	25.6	26.5	27.4	28.3	29.3	30.2	31.1	32.1	33.0	34.0	35.0	35.9	36.9	37.9	38.9	39.9	40.9	41.9	42.9	43.9
18.0	24.6	25.5	26.5	27.4	28.3	29.2	30.1	31.1	32.0	33.0	33.9	34.9	35.9	36.9	37.8	38.8	39.8	40.8	41.8	42.8	43.8
18.1	24.6	25.5	26.4	27.3	28.2	29.2	30.1	31.0	32.0	32.9	33.9	34.9	35.8	36.8	37.8	38.8	39.8	40.8	41.8	42.8	43.8
18.2	24.6	25.5	26.4	27.3	28.2	29.1	30.1	31.0	31.9	32.9	33.8	34.8	35.8	36.7	37.7	38.7	39.7	40.7	41.7	42.7	43.7
18.3	24.5	25.4	26.3	27.2	28.2	29.1	30.0	30.9	31.9	32.8	33.8	34.8	35.7	36.7	37.7	38.6	39.6	40.6	41.6	42.6	43.6
18.4	24.5	25.4	26.3	27.2	28.1	29.0	30.0	30.9	31.8	32.8	33.7	34.7	35.7	36.6	37.6	38.6	39.6	40.6	41.6	42.6	43.6
18.5	24.5	25.4	26.3	27.2	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.6	36.6	37.6	38.5	39.5	40.5	41.5	42.5	43.5
18.6	24.4	25.3	26.2	27.1	28.0	29.0	29.9	30.8	31.7	32.7	33.6	34.6	35.6	36.5	37.5	38.5	39.5	40.5	41.4	42.4	43.4
18.7	24.4	25.3	26.2	27.1	28.0	28.9	29.8	30.8	31.7	32.6	33.6	34.5	35.5	36.5	37.4	38.4	39.4	40.4	41.4	42.4	43.4
18.8	24.4	25.2	26.1	27.0	28.0	28.9	29.8	30.7	31.7	32.6	33.5	34.5	35.5	36.4	37.4	38.4	39.3	40.3	41.3	42.3	43.3
18.9	24.3	25.2	26.1	27.0	27.9	28.8	29.8	30.7	31.6	32.6	33.5	34.5	35.4	36.4	37.3	38.3	39.3	40.3	41.3	42.3	43.3
19.0	24.3	25.2	26.1	27.0	27.9	28.8	29.7	30.6	31.6	32.5	33.5	34.4	35.4	36.3	37.3	38.3	39.2	40.2	41.2	42.2	43.2
19.1	24.2	25.1	26.0	26.9	27.8	28.7	29.7	30.6	31.5	32.5	33.4	34.4	35.3	36.3	37.2	38.2	39.2	40.2	41.2	42.1	43.1
19.2	24.2	25.1	26.0	26.9	27.8	28.7	29.6	30.6	31.5	32.4	33.4	34.3	35.3	36.2	37.2	38.2	39.1	40.1	41.1	42.1	43.1
19.3	24.2	25.1	26.0	26.9	27.8	28.7	29.6	30.5	31.4	32.4	33.3	34.3	35.2	36.2	37.1	38.1	39.1	40.1	41.0	42.0	43.0
19.4	24.2	25.0	25.9	26.8	27.7	28.6	29.5	30.5	31.4	32.3	33.3	34.2	35.2	36.1	37.1	38.0	39.0	40.0	41.0	42.0	43.0

22 ACCESS TABLES

DIAMETER (INCHES) : 19.5 - 23.9
 HEIGHT (FEET) : 70 - 110

DBH (IN)	TOTAL HEIGHT (FEET)																				
	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
19.5	24.1	25.0	25.9	26.8	27.7	28.6	29.5	30.4	31.4	32.3	33.2	34.2	35.1	36.1	37.0	38.0	39.0	39.9	40.9	41.9	42.9
19.6	24.1	25.0	25.9	26.7	27.6	28.6	29.5	30.4	31.3	32.2	33.2	34.1	35.1	36.0	37.0	37.9	38.9	39.9	40.9	41.9	42.8
19.7	24.1	24.9	25.8	26.7	27.6	28.5	29.4	30.3	31.3	32.2	33.1	34.1	35.0	36.0	36.9	37.9	38.9	39.8	40.8	41.8	42.8
19.8	24.0	24.9	25.8	26.7	27.6	28.5	29.4	30.3	31.2	32.2	33.1	34.0	35.0	35.9	36.9	37.8	38.8	39.8	40.8	41.7	42.7
19.9	24.0	24.9	25.8	26.6	27.5	28.4	29.3	30.3	31.2	32.1	33.0	34.0	34.9	35.9	36.8	37.8	38.8	39.7	40.7	41.7	42.7
20.0	24.0	24.8	25.7	26.6	27.5	28.4	29.3	30.2	31.1	32.1	33.0	33.9	34.9	35.8	36.8	37.7	38.7	39.7	40.7	41.6	42.6
20.1	23.9	24.8	25.7	26.6	27.5	28.4	29.3	30.2	31.1	32.0	33.0	33.9	34.8	35.8	36.7	37.7	38.7	39.6	40.6	41.6	42.6
20.2	23.9	24.8	25.7	26.5	27.4	28.3	29.2	30.1	31.1	32.0	32.9	33.9	34.8	35.7	36.7	37.6	38.6	39.6	40.6	41.5	42.5
20.3	23.9	24.7	25.6	26.5	27.4	28.3	29.2	30.1	31.0	31.9	32.9	33.8	34.7	35.7	36.6	37.6	38.6	39.5	40.5	41.5	42.5
20.4	23.8	24.7	25.6	26.5	27.4	28.3	29.2	30.1	31.0	31.9	32.8	33.8	34.7	35.6	36.6	37.6	38.5	39.5	40.4	41.4	42.4
20.5	23.8	24.7	25.6	26.4	27.3	28.2	29.1	30.0	30.9	31.9	32.8	33.7	34.7	35.6	36.6	37.5	38.5	39.4	40.4	41.4	42.4
20.6	23.8	24.6	25.5	26.4	27.3	28.2	29.1	30.0	30.9	31.8	32.8	33.7	34.6	35.6	36.5	37.5	38.4	39.4	40.3	41.3	42.3
20.7	23.7	24.6	25.5	26.4	27.3	28.2	29.1	30.0	30.9	31.8	32.7	33.6	34.6	35.5	36.5	37.4	38.4	39.3	40.3	41.3	42.2
20.8	23.7	24.6	25.5	26.3	27.2	28.1	29.0	29.9	30.8	31.7	32.7	33.6	34.5	35.5	36.4	37.4	38.3	39.3	40.2	41.2	42.2
20.9	23.7	24.6	25.4	26.3	27.2	28.1	29.0	29.9	30.8	31.7	32.6	33.6	34.5	35.4	36.4	37.3	38.3	39.2	40.2	41.2	42.1
21.0	23.7	24.5	25.4	26.3	27.2	28.0	28.9	29.8	30.8	31.7	32.6	33.5	34.5	35.4	36.3	37.3	38.2	39.2	40.2	41.1	42.1
21.1	23.6	24.5	25.4	26.2	27.1	28.0	28.9	29.8	30.7	31.6	32.6	33.5	34.4	35.3	36.3	37.2	38.2	39.1	40.1	41.1	42.0
21.2	23.6	24.5	25.3	26.2	27.1	28.0	28.9	29.8	30.7	31.6	32.5	33.4	34.4	35.3	36.2	37.2	38.1	39.1	40.1	41.0	42.0
21.3	23.6	24.4	25.3	26.2	27.1	27.9	28.8	29.7	30.6	31.6	32.5	33.4	34.3	35.3	36.2	37.1	38.1	39.0	40.0	41.0	41.9
21.4	23.5	24.4	25.3	26.1	27.0	27.9	28.8	29.7	30.6	31.5	32.4	33.4	34.3	35.2	36.2	37.1	38.0	39.0	40.0	40.9	41.9
21.5	23.5	24.4	25.2	26.1	27.0	27.9	28.8	29.7	30.6	31.5	32.4	33.3	34.2	35.2	36.1	37.1	38.0	39.0	39.9	40.9	41.8
21.6	23.5	24.4	25.2	26.1	27.0	27.9	28.7	29.6	30.5	31.4	32.4	33.3	34.2	35.1	36.1	37.0	38.0	38.9	39.9	40.8	41.8
21.7	23.5	24.3	25.2	26.1	26.9	27.8	28.7	29.6	30.5	31.4	32.3	33.2	34.2	35.1	36.0	37.0	37.9	38.9	39.8	40.8	41.7
21.8	23.4	24.3	25.2	26.0	26.9	27.8	28.7	29.6	30.5	31.4	32.3	33.2	34.1	35.1	36.0	36.9	37.9	38.8	39.8	40.7	41.7
21.9	23.4	24.3	25.1	26.0	26.9	27.8	28.6	29.5	30.4	31.3	32.3	33.2	34.1	35.0	35.9	36.9	37.8	38.8	39.7	40.7	41.7
22.0	23.4	24.2	25.1	26.0	26.8	27.7	28.6	29.5	30.4	31.3	32.2	33.1	34.1	35.0	35.9	36.8	37.8	38.7	39.7	40.6	41.6
22.1	23.4	24.2	25.1	25.9	26.8	27.7	28.6	29.5	30.4	31.3	32.2	33.1	34.0	34.9	35.9	36.8	37.7	38.7	39.6	40.6	41.6
22.2	23.3	24.2	25.0	25.9	26.8	27.7	28.5	29.4	30.3	31.2	32.1	33.1	34.0	34.9	35.8	36.8	37.7	38.6	39.6	40.6	41.5
22.3	23.3	24.2	25.0	25.9	26.8	27.6	28.5	29.4	30.3	31.2	32.1	33.0	33.9	34.9	35.8	36.7	37.7	38.6	39.6	40.5	41.5
22.4	23.3	24.1	25.0	25.9	26.7	27.6	28.5	29.4	30.3	31.2	32.1	33.0	33.9	34.8	35.7	36.7	37.6	38.6	39.5	40.5	41.4
22.5	23.3	24.1	25.0	25.8	26.7	27.6	28.5	29.3	30.2	31.1	32.0	32.9	33.9	34.8	35.7	36.6	37.6	38.5	39.5	40.4	41.4
22.6	23.2	24.1	24.9	25.8	26.7	27.5	28.4	29.3	30.2	31.1	32.0	32.9	33.8	34.7	35.7	36.6	37.5	38.5	39.4	40.4	41.3
22.7	23.2	24.1	24.9	25.8	26.6	27.5	28.4	29.3	30.2	31.1	32.0	32.9	33.8	34.7	35.6	36.6	37.5	38.4	39.4	40.3	41.3
22.8	23.2	24.0	24.9	25.7	26.6	27.5	28.4	29.2	30.1	31.0	31.9	32.8	33.8	34.7	35.6	36.5	37.5	38.4	39.3	40.3	41.2
22.9	23.2	24.0	24.9	25.7	26.6	27.5	28.3	29.2	30.1	31.0	31.9	32.8	33.7	34.6	35.6	36.5	37.4	38.4	39.3	40.2	41.2
23.0	23.1	24.0	24.8	25.7	26.6	27.4	28.3	29.2	30.1	31.0	31.9	32.8	33.7	34.6	35.5	36.4	37.4	38.3	39.3	40.2	41.2
23.1	23.1	24.0	24.8	25.7	26.5	27.4	28.3	29.2	30.0	30.9	31.8	32.7	33.6	34.6	35.5	36.4	37.3	38.3	39.2	40.2	41.1
23.2	23.1	23.9	24.8	25.6	26.5	27.4	28.2	29.1	30.0	30.9	31.8	32.7	33.6	34.5	35.4	36.4	37.3	38.2	39.2	40.1	41.1
23.3	23.1	23.9	24.8	25.6	26.5	27.3	28.2	29.1	30.0	30.9	31.8	32.7	33.6	34.5	35.4	36.3	37.3	38.2	39.1	40.1	41.0
23.4	23.0	23.9	24.7	25.6	26.4	27.3	28.2	29.1	29.9	30.8	31.7	32.6	33.5	34.5	35.4	36.3	37.2	38.2	39.1	40.0	41.0
23.5	23.0	23.9	24.7	25.6	26.4	27.3	28.2	29.0	29.9	30.8	31.7	32.6	33.5	34.4	35.3	36.3	37.2	38.1	39.1	40.0	40.9
23.6	23.0	23.8	24.7	25.5	26.4	27.3	28.1	29.0	29.9	30.8	31.7	32.6	33.5	34.4	35.3	36.2	37.1	38.1	39.0	40.0	40.9
23.7	23.0	23.8	24.7	25.5	26.4	27.2	28.1	29.0	29.9	30.7	31.6	32.5	33.4	34.3	35.3	36.2	37.1	38.0	39.0	39.9	40.9
23.8	22.9	23.8	24.6	25.5	26.3	27.2	28.1	28.9	29.8	30.7	31.6	32.5	33.4	34.3	35.2	36.1	37.1	38.0	38.9	39.9	40.8
23.9	22.9	23.8	24.6	25.5	26.3	27.2	28.0	28.9	29.8	30.7	31.6	32.5	33.4	34.3	35.2	36.1	37.0	38.0	38.9	39.8	40.8

DIAMETER (INCHES) : 24.0 - 28.4
 HEIGHT (FEET) : 70 - 110

DBH	TOTAL HEIGHT (FEET)																					
	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	
(IN)	----- TARIFF NUMBER -----																					
24.0	22.9	23.7	24.6	25.4	26.3	27.1	28.0	28.9	29.8	30.7	31.5	32.4	33.3	34.2	35.2	36.1	37.0	37.9	38.9	39.8	40.7	
24.1	22.9	23.7	24.6	25.4	26.3	27.1	28.0	28.9	29.7	30.6	31.5	32.4	33.3	34.2	35.1	36.0	37.0	37.9	38.8	39.8	40.7	
24.2	22.9	23.7	24.5	25.4	26.2	27.1	28.0	28.8	29.7	30.6	31.5	32.4	33.3	34.2	35.1	36.0	36.9	37.8	38.8	39.7	40.7	
24.3	22.8	23.7	24.5	25.4	26.2	27.1	27.9	28.8	29.7	30.6	31.4	32.3	33.2	34.1	35.1	36.0	36.9	37.8	38.7	39.7	40.6	
24.4	22.8	23.6	24.5	25.3	26.2	27.0	27.9	28.8	29.6	30.5	31.4	32.3	33.2	34.1	35.0	35.9	36.9	37.8	38.7	39.6	40.6	
24.5	22.8	23.6	24.5	25.3	26.2	27.0	27.9	28.7	29.6	30.5	31.4	32.3	33.2	34.1	35.0	35.9	36.8	37.7	38.7	39.6	40.5	
24.6	22.8	23.6	24.4	25.3	26.1	27.0	27.8	28.7	29.6	30.5	31.4	32.2	33.1	34.0	35.0	35.9	36.8	37.7	38.6	39.6	40.5	
24.7	22.7	23.6	24.4	25.3	26.1	27.0	27.8	28.7	29.6	30.4	31.3	32.2	33.1	34.0	34.9	35.8	36.7	37.7	38.6	39.5	40.5	
24.8	22.7	23.6	24.4	25.2	26.1	26.9	27.8	28.7	29.5	30.4	31.3	32.2	33.1	34.0	34.9	35.8	36.7	37.6	38.6	39.5	40.4	
24.9	22.7	23.5	24.4	25.2	26.1	26.9	27.8	28.6	29.5	30.4	31.3	32.2	33.0	33.9	34.9	35.8	36.7	37.6	38.5	39.4	40.4	
25.0	22.7	23.5	24.3	25.2	26.0	26.9	27.7	28.6	29.5	30.4	31.2	32.1	33.0	33.9	34.8	35.7	36.6	37.6	38.5	39.4	40.3	
25.1	22.7	23.5	24.3	25.2	26.0	26.9	27.7	28.6	29.5	30.3	31.2	32.1	33.0	33.9	34.8	35.7	36.6	37.5	38.4	39.4	40.3	
25.2	22.6	23.5	24.3	25.1	26.0	26.8	27.7	28.6	29.4	30.3	31.2	32.1	33.0	33.9	34.8	35.7	36.6	37.5	38.4	39.3	40.3	
25.3	22.6	23.4	24.3	25.1	26.0	26.8	27.7	28.5	29.4	30.3	31.2	32.0	32.9	33.8	34.7	35.6	36.5	37.5	38.4	39.3	40.2	
25.4	22.6	23.4	24.3	25.1	25.9	26.8	27.6	28.5	29.4	30.2	31.1	32.0	32.9	33.8	34.7	35.6	36.5	37.4	38.3	39.3	40.2	
25.5	22.6	23.4	24.2	25.1	25.9	26.8	27.6	28.5	29.3	30.2	31.1	32.0	32.9	33.8	34.7	35.6	36.5	37.4	38.3	39.2	40.2	
25.6	22.6	23.4	24.2	25.0	25.9	26.7	27.6	28.5	29.3	30.2	31.1	31.9	32.8	33.7	34.6	35.5	36.4	37.4	38.3	39.2	40.1	
25.7	22.5	23.4	24.2	25.0	25.9	26.7	27.6	28.4	29.3	30.2	31.0	31.9	32.8	33.7	34.6	35.5	36.4	37.3	38.2	39.2	40.1	
25.8	22.5	23.3	24.2	25.0	25.8	26.7	27.5	28.4	29.3	30.1	31.0	31.9	32.8	33.7	34.6	35.5	36.4	37.3	38.2	39.1	40.0	
25.9	22.5	23.3	24.1	25.0	25.8	26.7	27.5	28.4	29.2	30.1	31.0	31.9	32.7	33.6	34.5	35.4	36.3	37.3	38.2	39.1	40.0	
26.0	22.5	23.3	24.1	25.0	25.8	26.6	27.5	28.3	29.2	30.1	31.0	31.8	32.7	33.6	34.5	35.4	36.3	37.2	38.1	39.1	40.0	
26.1	22.5	23.3	24.1	24.9	25.8	26.6	27.5	28.3	29.2	30.1	30.9	31.8	32.7	33.6	34.5	35.4	36.3	37.2	38.1	39.0	39.9	
26.2	22.4	23.3	24.1	24.9	25.7	26.6	27.4	28.3	29.2	30.0	30.9	31.8	32.7	33.5	34.4	35.3	36.2	37.2	38.1	39.0	39.9	
26.3	22.4	23.2	24.1	24.9	25.7	26.6	27.4	28.3	29.1	30.0	30.9	31.7	32.6	33.5	34.4	35.3	36.2	37.1	38.0	38.9	39.9	
26.4	22.4	23.2	24.0	24.9	25.7	26.5	27.4	28.2	29.1	30.0	30.8	31.7	32.6	33.5	34.4	35.3	36.2	37.1	38.0	38.9	39.8	
26.5	22.4	23.2	24.0	24.8	25.7	26.5	27.4	28.2	29.1	29.9	30.8	31.7	32.6	33.5	34.4	35.2	36.1	37.1	38.0	38.9	39.8	
26.6	22.4	23.2	24.0	24.8	25.7	26.5	27.3	28.2	29.1	29.9	30.8	31.7	32.5	33.4	34.3	35.2	36.1	37.0	37.9	38.8	39.8	
26.7	22.3	23.2	24.0	24.8	25.6	26.5	27.3	28.2	29.0	29.9	30.8	31.6	32.5	33.4	34.3	35.2	36.1	37.0	37.9	38.8	39.7	
26.8	22.3	23.1	24.0	24.8	25.6	26.5	27.3	28.2	29.0	29.9	30.7	31.6	32.5	33.4	34.3	35.2	36.1	37.0	37.9	38.8	39.7	
26.9	22.3	23.1	23.9	24.8	25.6	26.4	27.3	28.1	29.0	29.8	30.7	31.6	32.5	33.3	34.2	35.1	36.0	36.9	37.8	38.7	39.7	
27.0	22.3	23.1	23.9	24.7	25.6	26.4	27.3	28.1	29.0	29.8	30.7	31.6	32.4	33.3	34.2	35.1	36.0	36.9	37.8	38.7	39.6	
27.1	22.3	23.1	23.9	24.7	25.6	26.4	27.2	28.1	28.9	29.8	30.7	31.5	32.4	33.3	34.2	35.1	36.0	36.9	37.8	38.7	39.6	
27.2	22.2	23.1	23.9	24.7	25.5	26.4	27.2	28.1	28.9	29.8	30.6	31.5	32.4	33.3	34.1	35.0	35.9	36.8	37.7	38.7	39.6	
27.3	22.2	23.0	23.9	24.7	25.5	26.3	27.2	28.0	28.9	29.7	30.6	31.5	32.4	33.2	34.1	35.0	35.9	36.8	37.7	38.6	39.5	
27.4	22.2	23.0	23.8	24.7	25.5	26.3	27.2	28.0	28.9	29.7	30.6	31.5	32.3	33.2	34.1	35.0	35.9	36.8	37.7	38.6	39.5	
27.5	22.2	23.0	23.8	24.6	25.5	26.3	27.1	28.0	28.8	29.7	30.6	31.4	32.3	33.2	34.1	35.0	35.8	36.7	37.6	38.6	39.5	
27.6	22.2	23.0	23.8	24.6	25.4	26.3	27.1	28.0	28.8	29.7	30.5	31.4	32.3	33.2	34.0	34.9	35.8	36.7	37.6	38.5	39.4	
27.7	22.1	23.0	23.8	24.6	25.4	26.3	27.1	27.9	28.8	29.6	30.5	31.4	32.2	33.1	34.0	34.9	35.8	36.7	37.6	38.5	39.4	
27.8	22.1	22.9	23.8	24.6	25.4	26.2	27.1	27.9	28.8	29.6	30.5	31.4	32.2	33.1	34.0	34.9	35.8	36.7	37.6	38.5	39.4	
27.9	22.1	22.9	23.7	24.6	25.4	26.2	27.1	27.9	28.7	29.6	30.5	31.3	32.2	33.1	34.0	34.8	35.7	36.6	37.5	38.4	39.3	
28.0	22.1	22.9	23.7	24.5	25.4	26.2	27.0	27.9	28.7	29.6	30.4	31.3	32.2	33.0	33.9	34.8	35.7	36.6	37.5	38.4	39.3	
28.1	22.1	22.9	23.7	24.5	25.3	26.2	27.0	27.9	28.7	29.6	30.4	31.3	32.1	33.0	33.9	34.8	35.7	36.6	37.5	38.4	39.3	
28.2	22.1	22.9	23.7	24.5	25.3	26.2	27.0	27.8	28.7	29.5	30.4	31.3	32.1	33.0	33.9	34.8	35.6	36.5	37.4	38.3	39.2	
28.3	22.0	22.8	23.7	24.5	25.3	26.1	27.0	27.8	28.7	29.5	30.4	31.2	32.1	33.0	33.8	34.7	35.6	36.5	37.4	38.3	39.2	
28.4	22.0	22.8	23.6	24.5	25.3	26.1	26.9	27.8	28.6	29.5	30.3	31.2	32.1	32.9	33.8	34.7	35.6	36.5	37.4	38.3	39.2	

24 ACCESS TABLES

DIAMETER (INCHES) : 28.5 - 32.9
 HEIGHT (FEET) : 70 - 110

DBH	TOTAL HEIGHT (FEET)																				
	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
(IN)	----- TARIF NUMBER -----																				
28.5	22.0	22.8	23.6	24.4	25.3	26.1	26.9	27.8	28.6	29.5	30.3	31.2	32.0	32.9	33.8	34.7	35.6	36.5	37.3	38.2	39.2
28.6	22.0	22.8	23.6	24.4	25.2	26.1	26.9	27.7	28.6	29.4	30.3	31.2	32.0	32.9	33.8	34.6	35.5	36.4	37.3	38.2	39.1
28.7	22.0	22.8	23.6	24.4	25.2	26.0	26.9	27.7	28.6	29.4	30.3	31.1	32.0	32.9	33.7	34.6	35.5	36.4	37.3	38.2	39.1
28.8	22.0	22.8	23.6	24.4	25.2	26.0	26.9	27.7	28.5	29.4	30.2	31.1	32.0	32.8	33.7	34.6	35.5	36.4	37.3	38.2	39.1
28.9	21.9	22.7	23.5	24.4	25.2	26.0	26.8	27.7	28.5	29.4	30.2	31.1	31.9	32.8	33.7	34.6	35.4	36.3	37.2	38.1	39.0
29.0	21.9	22.7	23.5	24.3	25.2	26.0	26.8	27.7	28.5	29.3	30.2	31.1	31.9	32.8	33.7	34.5	35.4	36.3	37.2	38.1	39.0
29.1	21.9	22.7	23.5	24.3	25.1	26.0	26.8	27.6	28.5	29.3	30.2	31.0	31.9	32.8	33.6	34.5	35.4	36.3	37.2	38.1	39.0
29.2	21.9	22.7	23.5	24.3	25.1	25.9	26.8	27.6	28.5	29.3	30.2	31.0	31.9	32.7	33.6	34.5	35.4	36.3	37.1	38.0	38.9
29.3	21.9	22.7	23.5	24.3	25.1	25.9	26.8	27.6	28.4	29.3	30.1	31.0	31.8	32.7	33.6	34.5	35.3	36.2	37.1	38.0	38.9
29.4	21.9	22.7	23.5	24.3	25.1	25.9	26.7	27.6	28.4	29.3	30.1	31.0	31.8	32.7	33.6	34.4	35.3	36.2	37.1	38.0	38.9
29.5	21.8	22.6	23.4	24.3	25.1	25.9	26.7	27.6	28.4	29.2	30.1	30.9	31.8	32.7	33.5	34.4	35.3	36.2	37.1	38.0	38.9
29.6	21.8	22.6	23.4	24.2	25.1	25.9	26.7	27.5	28.4	29.2	30.1	30.9	31.8	32.6	33.5	34.4	35.3	36.1	37.0	37.9	38.8
29.7	21.8	22.6	23.4	24.2	25.0	25.9	26.7	27.5	28.3	29.2	30.0	30.9	31.8	32.6	33.5	34.4	35.2	36.1	37.0	37.9	38.8
29.8	21.8	22.6	23.4	24.2	25.0	25.8	26.7	27.5	28.3	29.2	30.0	30.9	31.7	32.6	33.5	34.3	35.2	36.1	37.0	37.9	38.8
29.9	21.8	22.6	23.4	24.2	25.0	25.8	26.6	27.5	28.3	29.1	30.0	30.8	31.7	32.6	33.4	34.3	35.2	36.1	37.0	37.8	38.7
30.0	21.8	22.6	23.4	24.2	25.0	25.8	26.6	27.5	28.3	29.1	30.0	30.8	31.7	32.5	33.4	34.3	35.2	36.0	36.9	37.8	38.7
30.1	21.7	22.5	23.3	24.1	25.0	25.8	26.6	27.4	28.3	29.1	30.0	30.8	31.7	32.5	33.4	34.3	35.1	36.0	36.9	37.8	38.7
30.2	21.7	22.5	23.3	24.1	24.9	25.8	26.6	27.4	28.2	29.1	29.9	30.8	31.6	32.5	33.4	34.2	35.1	36.0	36.9	37.8	38.7
30.3	21.7	22.5	23.3	24.1	24.9	25.7	26.6	27.4	28.2	29.1	29.9	30.8	31.6	32.5	33.3	34.2	35.1	36.0	36.8	37.7	38.6
30.4	21.7	22.5	23.3	24.1	24.9	25.7	26.5	27.4	28.2	29.0	29.9	30.7	31.6	32.4	33.3	34.2	35.1	35.9	36.8	37.7	38.6
30.5	21.7	22.5	23.3	24.1	24.9	25.7	26.5	27.4	28.2	29.0	29.9	30.7	31.6	32.4	33.3	34.2	35.0	35.9	36.8	37.7	38.6
30.6	21.7	22.5	23.3	24.1	24.9	25.7	26.5	27.3	28.2	29.0	29.8	30.7	31.5	32.4	33.3	34.1	35.0	35.9	36.8	37.7	38.5
30.7	21.6	22.4	23.2	24.0	24.9	25.7	26.5	27.3	28.1	29.0	29.8	30.7	31.5	32.4	33.2	34.1	35.0	35.9	36.7	37.6	38.5
30.8	21.6	22.4	23.2	24.0	24.8	25.6	26.5	27.3	28.1	29.0	29.8	30.6	31.5	32.4	33.2	34.1	35.0	35.8	36.7	37.6	38.5
30.9	21.6	22.4	23.2	24.0	24.8	25.6	26.4	27.3	28.1	28.9	29.8	30.6	31.5	32.3	33.2	34.1	34.9	35.8	36.7	37.6	38.5
31.0	21.6	22.4	23.2	24.0	24.8	25.6	26.4	27.3	28.1	28.9	29.8	30.6	31.5	32.3	33.2	34.0	34.9	35.8	36.7	37.5	38.4
31.1	21.6	22.4	23.2	24.0	24.8	25.6	26.4	27.2	28.1	28.9	29.7	30.6	31.4	32.3	33.1	34.0	34.9	35.8	36.6	37.5	38.4
31.2	21.6	22.4	23.2	24.0	24.8	25.6	26.4	27.2	28.0	28.9	29.7	30.6	31.4	32.3	33.1	34.0	34.9	35.7	36.6	37.5	38.4
31.3	21.6	22.3	23.1	23.9	24.7	25.6	26.4	27.2	28.0	28.9	29.7	30.5	31.4	32.2	33.1	34.0	34.8	35.7	36.6	37.5	38.4
31.4	21.5	22.3	23.1	23.9	24.7	25.5	26.4	27.2	28.0	28.8	29.7	30.5	31.4	32.2	33.1	33.9	34.8	35.7	36.6	37.4	38.3
31.5	21.5	22.3	23.1	23.9	24.7	25.5	26.3	27.2	28.0	28.8	29.7	30.5	31.3	32.2	33.1	33.9	34.8	35.7	36.5	37.4	38.3
31.6	21.5	22.3	23.1	23.9	24.7	25.5	26.3	27.1	28.0	28.8	29.6	30.5	31.3	32.2	33.0	33.9	34.8	35.6	36.5	37.4	38.3
31.7	21.5	22.3	23.1	23.9	24.7	25.5	26.3	27.1	27.9	28.8	29.6	30.5	31.3	32.2	33.0	33.9	34.7	35.6	36.5	37.4	38.2
31.8	21.5	22.3	23.1	23.9	24.7	25.5	26.3	27.1	27.9	28.8	29.6	30.4	31.3	32.1	33.0	33.8	34.7	35.6	36.5	37.3	38.2
31.9	21.5	22.3	23.0	23.8	24.6	25.5	26.3	27.1	27.9	28.7	29.6	30.4	31.3	32.1	33.0	33.8	34.7	35.6	36.4	37.3	38.2
32.0	21.5	22.2	23.0	23.8	24.6	25.4	26.2	27.1	27.9	28.7	29.6	30.4	31.2	32.1	32.9	33.8	34.7	35.5	36.4	37.3	38.2
32.1	21.4	22.2	23.0	23.8	24.6	25.4	26.2	27.0	27.9	28.7	29.5	30.4	31.2	32.1	32.9	33.8	34.6	35.5	36.4	37.3	38.1
32.2	21.4	22.2	23.0	23.8	24.6	25.4	26.2	27.0	27.9	28.7	29.5	30.4	31.2	32.0	32.9	33.8	34.6	35.5	36.4	37.2	38.1
32.3	21.4	22.2	23.0	23.8	24.6	25.4	26.2	27.0	27.8	28.7	29.5	30.3	31.2	32.0	32.9	33.7	34.6	35.5	36.3	37.2	38.1
32.4	21.4	22.2	23.0	23.8	24.6	25.4	26.2	27.0	27.8	28.6	29.5	30.3	31.2	32.0	32.9	33.7	34.6	35.4	36.3	37.2	38.1
32.5	21.4	22.2	23.0	23.7	24.5	25.4	26.2	27.0	27.8	28.6	29.5	30.3	31.1	32.0	32.8	33.7	34.6	35.4	36.3	37.2	38.0
32.6	21.4	22.2	22.9	23.7	24.5	25.3	26.1	27.0	27.8	28.6	29.4	30.3	31.1	32.0	32.8	33.7	34.5	35.4	36.3	37.1	38.0
32.7	21.4	22.1	22.9	23.7	24.5	25.3	26.1	26.9	27.8	28.6	29.4	30.3	31.1	31.9	32.8	33.6	34.5	35.4	36.2	37.1	38.0
32.8	21.3	22.1	22.9	23.7	24.5	25.3	26.1	26.9	27.7	28.6	29.4	30.2	31.1	31.9	32.8	33.6	34.5	35.3	36.2	37.1	38.0
32.9	21.3	22.1	22.9	23.7	24.5	25.3	26.1	26.9	27.7	28.6	29.4	30.2	31.1	31.9	32.7	33.6	34.5	35.3	36.2	37.1	37.9

DIAMETER (INCHES) : 33.0 - 37.4
 HEIGHT (FEET) : 70 - 110

DBH (IN)	TOTAL HEIGHT (FEET)																				
	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
33.0	21.3	22.1	22.9	23.7	24.5	25.3	26.1	26.9	27.7	28.5	29.4	30.2	31.0	31.9	32.7	33.6	34.4	35.3	36.2	37.0	37.9
33.1	21.3	22.1	22.9	23.7	24.5	25.3	26.1	26.9	27.7	28.5	29.3	30.2	31.0	31.9	32.7	33.6	34.4	35.3	36.1	37.0	37.9
33.2	21.3	22.1	22.8	23.6	24.4	25.2	26.0	26.9	27.7	28.5	29.3	30.2	31.0	31.8	32.7	33.5	34.4	35.3	36.1	37.0	37.9
33.3	21.3	22.1	22.8	23.6	24.4	25.2	26.0	26.8	27.7	28.5	29.3	30.1	31.0	31.8	32.7	33.5	34.4	35.2	36.1	37.0	37.8
33.4	21.3	22.0	22.8	23.6	24.4	25.2	26.0	26.8	27.6	28.5	29.3	30.1	31.0	31.8	32.6	33.5	34.4	35.2	36.1	36.9	37.8
33.5	21.2	22.0	22.8	23.6	24.4	25.2	26.0	26.8	27.6	28.4	29.3	30.1	30.9	31.8	32.6	33.5	34.3	35.2	36.1	36.9	37.8
33.6	21.2	22.0	22.8	23.6	24.4	25.2	26.0	26.8	27.6	28.4	29.2	30.1	30.9	31.8	32.6	33.5	34.3	35.2	36.0	36.9	37.8
33.7	21.2	22.0	22.8	23.6	24.4	25.2	26.0	26.8	27.6	28.4	29.2	30.1	30.9	31.7	32.6	33.4	34.3	35.1	36.0	36.9	37.7
33.8	21.2	22.0	22.8	23.5	24.3	25.1	25.9	26.8	27.6	28.4	29.2	30.0	30.9	31.7	32.6	33.4	34.3	35.1	36.0	36.9	37.7
33.9	21.2	22.0	22.7	23.5	24.3	25.1	25.9	26.7	27.5	28.4	29.2	30.0	30.9	31.7	32.5	33.4	34.2	35.1	36.0	36.8	37.7
34.0	21.2	22.0	22.7	23.5	24.3	25.1	25.9	26.7	27.5	28.4	29.2	30.0	30.8	31.7	32.5	33.4	34.2	35.1	35.9	36.8	37.7
34.1	21.2	21.9	22.7	23.5	24.3	25.1	25.9	26.7	27.5	28.3	29.2	30.0	30.8	31.7	32.5	33.3	34.2	35.1	35.9	36.8	37.7
34.2	21.2	21.9	22.7	23.5	24.3	25.1	25.9	26.7	27.5	28.3	29.1	30.0	30.8	31.6	32.5	33.3	34.2	35.0	35.9	36.8	37.6
34.3	21.1	21.9	22.7	23.5	24.3	25.1	25.9	26.7	27.5	28.3	29.1	29.9	30.8	31.6	32.5	33.3	34.2	35.0	35.9	36.7	37.6
34.4	21.1	21.9	22.7	23.5	24.3	25.0	25.8	26.7	27.5	28.3	29.1	29.9	30.8	31.6	32.4	33.3	34.1	35.0	35.9	36.7	37.6
34.5	21.1	21.9	22.7	23.4	24.2	25.0	25.8	26.6	27.4	28.3	29.1	29.9	30.7	31.6	32.4	33.3	34.1	35.0	35.8	36.7	37.6
34.6	21.1	21.9	22.6	23.4	24.2	25.0	25.8	26.6	27.4	28.2	29.1	29.9	30.7	31.6	32.4	33.2	34.1	34.9	35.8	36.7	37.5
34.7	21.1	21.9	22.6	23.4	24.2	25.0	25.8	26.6	27.4	28.2	29.0	29.9	30.7	31.5	32.4	33.2	34.1	34.9	35.8	36.6	37.5
34.8	21.1	21.8	22.6	23.4	24.2	25.0	25.8	26.6	27.4	28.2	29.0	29.9	30.7	31.5	32.4	33.2	34.1	34.9	35.8	36.6	37.5
34.9	21.1	21.8	22.6	23.4	24.2	25.0	25.8	26.6	27.4	28.2	29.0	29.8	30.7	31.5	32.3	33.2	34.0	34.9	35.7	36.6	37.5
35.0	21.0	21.8	22.6	23.4	24.2	25.0	25.8	26.6	27.4	28.2	29.0	29.8	30.6	31.5	32.3	33.2	34.0	34.9	35.7	36.6	37.4
35.1	21.0	21.8	22.6	23.4	24.1	24.9	25.7	26.5	27.3	28.2	29.0	29.8	30.6	31.5	32.3	33.1	34.0	34.8	35.7	36.6	37.4
35.2	21.0	21.8	22.6	23.3	24.1	24.9	25.7	26.5	27.3	28.1	29.0	29.8	30.6	31.4	32.3	33.1	34.0	34.8	35.7	36.5	37.4
35.3	21.0	21.8	22.6	23.3	24.1	24.9	25.7	26.5	27.3	28.1	28.9	29.8	30.6	31.4	32.3	33.1	34.0	34.8	35.7	36.5	37.4
35.4	21.0	21.8	22.5	23.3	24.1	24.9	25.7	26.5	27.3	28.1	28.9	29.7	30.6	31.4	32.2	33.1	33.9	34.8	35.6	36.5	37.4
35.5	21.0	21.8	22.5	23.3	24.1	24.9	25.7	26.5	27.3	28.1	28.9	29.7	30.6	31.4	32.2	33.1	33.9	34.8	35.6	36.5	37.3
35.6	21.0	21.7	22.5	23.3	24.1	24.9	25.7	26.5	27.3	28.1	28.9	29.7	30.5	31.4	32.2	33.0	33.9	34.7	35.6	36.5	37.3
35.7	21.0	21.7	22.5	23.3	24.1	24.9	25.6	26.4	27.3	28.1	28.9	29.7	30.5	31.4	32.2	33.0	33.9	34.7	35.6	36.4	37.3
35.8	20.9	21.7	22.5	23.3	24.0	24.8	25.6	26.4	27.2	28.0	28.9	29.7	30.5	31.3	32.2	33.0	33.9	34.7	35.6	36.4	37.3
35.9	20.9	21.7	22.5	23.3	24.0	24.8	25.6	26.4	27.2	28.0	28.8	29.7	30.5	31.3	32.1	33.0	33.8	34.7	35.5	36.4	37.2
36.0	20.9	21.7	22.5	23.2	24.0	24.8	25.6	26.4	27.2	28.0	28.8	29.6	30.5	31.3	32.1	33.0	33.8	34.7	35.5	36.4	37.2
36.1	20.9	21.7	22.4	23.2	24.0	24.8	25.6	26.4	27.2	28.0	28.8	29.6	30.5	31.3	32.1	32.9	33.8	34.6	35.5	36.3	37.2
36.2	20.9	21.7	22.4	23.2	24.0	24.8	25.6	26.4	27.2	28.0	28.8	29.6	30.4	31.3	32.1	32.9	33.8	34.6	35.5	36.3	37.2
36.3	20.9	21.7	22.4	23.2	24.0	24.8	25.6	26.4	27.2	28.0	28.8	29.6	30.4	31.2	32.1	32.9	33.8	34.6	35.4	36.3	37.2
36.4	20.9	21.6	22.4	23.2	24.0	24.8	25.5	26.3	27.1	27.9	28.8	29.6	30.4	31.2	32.1	32.9	33.7	34.6	35.4	36.3	37.1
36.5	20.9	21.6	22.4	23.2	24.0	24.7	25.5	26.3	27.1	27.9	28.7	29.6	30.4	31.2	32.0	32.9	33.7	34.6	35.4	36.3	37.1
36.6	20.9	21.6	22.4	23.2	23.9	24.7	25.5	26.3	27.1	27.9	28.7	29.5	30.4	31.2	32.0	32.9	33.7	34.5	35.4	36.2	37.1
36.7	20.8	21.6	22.4	23.1	23.9	24.7	25.5	26.3	27.1	27.9	28.7	29.5	30.3	31.2	32.0	32.8	33.7	34.5	35.4	36.2	37.1
36.8	20.8	21.6	22.4	23.1	23.9	24.7	25.5	26.3	27.1	27.9	28.7	29.5	30.3	31.2	32.0	32.8	33.7	34.5	35.3	36.2	37.1
36.9	20.8	21.6	22.3	23.1	23.9	24.7	25.5	26.3	27.1	27.9	28.7	29.5	30.3	31.1	32.0	32.8	33.6	34.5	35.3	36.2	37.0
37.0	20.8	21.6	22.3	23.1	23.9	24.7	25.5	26.2	27.0	27.9	28.7	29.5	30.3	31.1	31.9	32.8	33.6	34.5	35.3	36.2	37.0
37.1	20.8	21.6	22.3	23.1	23.9	24.7	25.4	26.2	27.0	27.8	28.6	29.5	30.3	31.1	31.9	32.8	33.6	34.4	35.3	36.1	37.0
37.2	20.8	21.5	22.3	23.1	23.9	24.6	25.4	26.2	27.0	27.8	28.6	29.4	30.3	31.1	31.9	32.7	33.6	34.4	35.3	36.1	37.0
37.3	20.8	21.5	22.3	23.1	23.8	24.6	25.4	26.2	27.0	27.8	28.6	29.4	30.2	31.1	31.9	32.7	33.6	34.4	35.2	36.1	37.0
37.4	20.8	21.5	22.3	23.1	23.8	24.6	25.4	26.2	27.0	27.8	28.6	29.4	30.2	31.0	31.9	32.7	33.5	34.4	35.2	36.1	36.9

26 ACCESS TABLES

DIAMETER (INCHES) : 37.5 - 41.9
 HEIGHT (FEET) : 70 - 110

DBH (IN)	TOTAL HEIGHT (FEET)																				
	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
37.5	20.7	21.5	22.3	23.0	23.8	24.6	25.4	26.2	27.0	27.8	28.6	29.4	30.2	31.0	31.9	32.7	33.5	34.4	35.2	36.1	36.9
37.6	20.7	21.5	22.3	23.0	23.8	24.6	25.4	26.2	27.0	27.8	28.6	29.4	30.2	31.0	31.8	32.7	33.5	34.3	35.2	36.0	36.9
37.7	20.7	21.5	22.2	23.0	23.8	24.6	25.4	26.1	26.9	27.7	28.6	29.4	30.2	31.0	31.8	32.7	33.5	34.3	35.2	36.0	36.9
37.8	20.7	21.5	22.2	23.0	23.8	24.6	25.3	26.1	26.9	27.7	28.5	29.3	30.2	31.0	31.8	32.6	33.5	34.3	35.2	36.0	36.9
37.9	20.7	21.5	22.2	23.0	23.8	24.5	25.3	26.1	26.9	27.7	28.5	29.3	30.1	31.0	31.8	32.6	33.5	34.3	35.1	36.0	36.8
38.0	20.7	21.4	22.2	23.0	23.8	24.5	25.3	26.1	26.9	27.7	28.5	29.3	30.1	30.9	31.8	32.6	33.4	34.3	35.1	36.0	36.8
38.1	20.7	21.4	22.2	23.0	23.7	24.5	25.3	26.1	26.9	27.7	28.5	29.3	30.1	30.9	31.8	32.6	33.4	34.3	35.1	35.9	36.8
38.2	20.7	21.4	22.2	23.0	23.7	24.5	25.3	26.1	26.9	27.7	28.5	29.3	30.1	30.9	31.7	32.6	33.4	34.2	35.1	35.9	36.8
38.3	20.7	21.4	22.2	22.9	23.7	24.5	25.3	26.1	26.9	27.7	28.5	29.3	30.1	30.9	31.7	32.5	33.4	34.2	35.1	35.9	36.8
38.4	20.6	21.4	22.2	22.9	23.7	24.5	25.3	26.0	26.8	27.6	28.4	29.2	30.1	30.9	31.7	32.5	33.4	34.2	35.0	35.9	36.7
38.5	20.6	21.4	22.2	22.9	23.7	24.5	25.2	26.0	26.8	27.6	28.4	29.2	30.0	30.9	31.7	32.5	33.3	34.2	35.0	35.9	36.7
38.6	20.6	21.4	22.1	22.9	23.7	24.5	25.2	26.0	26.8	27.6	28.4	29.2	30.0	30.8	31.7	32.5	33.3	34.2	35.0	35.8	36.7
38.7	20.6	21.4	22.1	22.9	23.7	24.4	25.2	26.0	26.8	27.6	28.4	29.2	30.0	30.8	31.7	32.5	33.3	34.1	35.0	35.8	36.7
38.8	20.6	21.4	22.1	22.9	23.6	24.4	25.2	26.0	26.8	27.6	28.4	29.2	30.0	30.8	31.6	32.5	33.3	34.1	35.0	35.8	36.7
38.9	20.6	21.3	22.1	22.9	23.6	24.4	25.2	26.0	26.8	27.6	28.4	29.2	30.0	30.8	31.6	32.4	33.3	34.1	34.9	35.8	36.6
39.0	20.6	21.3	22.1	22.9	23.6	24.4	25.2	26.0	26.8	27.6	28.4	29.2	30.0	30.8	31.6	32.4	33.3	34.1	34.9	35.8	36.6
39.1	20.6	21.3	22.1	22.8	23.6	24.4	25.2	26.0	26.7	27.5	28.3	29.1	30.0	30.8	31.6	32.4	33.2	34.1	34.9	35.7	36.6
39.2	20.6	21.3	22.1	22.8	23.6	24.4	25.2	25.9	26.7	27.5	28.3	29.1	29.9	30.7	31.6	32.4	33.2	34.1	34.9	35.7	36.6
39.3	20.5	21.3	22.1	22.8	23.6	24.4	25.1	25.9	26.7	27.5	28.3	29.1	29.9	30.7	31.6	32.4	33.2	34.0	34.9	35.7	36.6
39.4	20.5	21.3	22.0	22.8	23.6	24.3	25.1	25.9	26.7	27.5	28.3	29.1	29.9	30.7	31.5	32.4	33.2	34.0	34.9	35.7	36.5
39.5	20.5	21.3	22.0	22.8	23.6	24.3	25.1	25.9	26.7	27.5	28.3	29.1	29.9	30.7	31.5	32.3	33.2	34.0	34.8	35.7	36.5
39.6	20.5	21.3	22.0	22.8	23.6	24.3	25.1	25.9	26.7	27.5	28.3	29.1	29.9	30.7	31.5	32.3	33.1	34.0	34.8	35.7	36.5
39.7	20.5	21.3	22.0	22.8	23.5	24.3	25.1	25.9	26.7	27.4	28.2	29.0	29.9	30.7	31.5	32.3	33.1	34.0	34.8	35.6	36.5
39.8	20.5	21.2	22.0	22.8	23.5	24.3	25.1	25.9	26.6	27.4	28.2	29.0	29.8	30.7	31.5	32.3	33.1	33.9	34.8	35.6	36.5
39.9	20.5	21.2	22.0	22.7	23.5	24.3	25.1	25.8	26.6	27.4	28.2	29.0	29.8	30.6	31.5	32.3	33.1	33.9	34.8	35.6	36.4
40.0	20.5	21.2	22.0	22.7	23.5	24.3	25.0	25.8	26.6	27.4	28.2	29.0	29.8	30.6	31.4	32.3	33.1	33.9	34.7	35.6	36.4
40.1	20.5	21.2	22.0	22.7	23.5	24.3	25.0	25.8	26.6	27.4	28.2	29.0	29.8	30.6	31.4	32.2	33.1	33.9	34.7	35.6	36.4
40.2	20.5	21.2	22.0	22.7	23.5	24.2	25.0	25.8	26.6	27.4	28.2	29.0	29.8	30.6	31.4	32.2	33.0	33.9	34.7	35.5	36.4
40.3	20.4	21.2	21.9	22.7	23.5	24.2	25.0	25.8	26.6	27.4	28.2	29.0	29.8	30.6	31.4	32.2	33.0	33.9	34.7	35.5	36.4
40.4	20.4	21.2	21.9	22.7	23.5	24.2	25.0	25.8	26.6	27.4	28.1	28.9	29.8	30.6	31.4	32.2	33.0	33.8	34.7	35.5	36.3
40.5	20.4	21.2	21.9	22.7	23.4	24.2	25.0	25.8	26.5	27.3	28.1	28.9	29.7	30.5	31.4	32.2	33.0	33.8	34.7	35.5	36.3
40.6	20.4	21.2	21.9	22.7	23.4	24.2	25.0	25.8	26.5	27.3	28.1	28.9	29.7	30.5	31.3	32.2	33.0	33.8	34.6	35.5	36.3
40.7	20.4	21.1	21.9	22.7	23.4	24.2	25.0	25.7	26.5	27.3	28.1	28.9	29.7	30.5	31.3	32.1	33.0	33.8	34.6	35.5	36.3
40.8	20.4	21.1	21.9	22.6	23.4	24.2	24.9	25.7	26.5	27.3	28.1	28.9	29.7	30.5	31.3	32.1	32.9	33.8	34.6	35.4	36.3
40.9	20.4	21.1	21.9	22.6	23.4	24.2	24.9	25.7	26.5	27.3	28.1	28.9	29.7	30.5	31.3	32.1	32.9	33.8	34.6	35.4	36.3
41.0	20.4	21.1	21.9	22.6	23.4	24.2	24.9	25.7	26.5	27.3	28.1	28.9	29.7	30.5	31.3	32.1	32.9	33.7	34.6	35.4	36.2
41.1	20.4	21.1	21.9	22.6	23.4	24.1	24.9	25.7	26.5	27.3	28.0	28.8	29.6	30.5	31.3	32.1	32.9	33.7	34.6	35.4	36.2
41.2	20.4	21.1	21.8	22.6	23.4	24.1	24.9	25.7	26.5	27.2	28.0	28.8	29.6	30.4	31.2	32.1	32.9	33.7	34.5	35.4	36.2
41.3	20.3	21.1	21.8	22.6	23.3	24.1	24.9	25.7	26.4	27.2	28.0	28.8	29.6	30.4	31.2	32.0	32.9	33.7	34.5	35.3	36.2
41.4	20.3	21.1	21.8	22.6	23.3	24.1	24.9	25.6	26.4	27.2	28.0	28.8	29.6	30.4	31.2	32.0	32.9	33.7	34.5	35.3	36.2
41.5	20.3	21.1	21.8	22.6	23.3	24.1	24.9	25.6	26.4	27.2	28.0	28.8	29.6	30.4	31.2	32.0	32.8	33.7	34.5	35.3	36.2
41.6	20.3	21.1	21.8	22.6	23.3	24.1	24.8	25.6	26.4	27.2	28.0	28.8	29.6	30.4	31.2	32.0	32.8	33.6	34.5	35.3	36.1
41.7	20.3	21.0	21.8	22.5	23.3	24.1	24.8	25.6	26.4	27.2	28.0	28.8	29.6	30.4	31.2	32.0	32.8	33.6	34.4	35.3	36.1
41.8	20.3	21.0	21.8	22.5	23.3	24.1	24.8	25.6	26.4	27.2	28.0	28.7	29.5	30.3	31.2	32.0	32.8	33.6	34.4	35.3	36.1
41.9	20.3	21.0	21.8	22.5	23.3	24.0	24.8	25.6	26.4	27.1	27.9	28.7	29.5	30.3	31.1	32.0	32.8	33.6	34.4	35.2	36.1

28 ACCESS TABLES

DIAMETER (INCHES) : 46.5 - 50.0
 HEIGHT (FEET) : 70 - 110

DBH (IN)	TOTAL HEIGHT (FEET)																				
	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
46.5	19.9	20.6	21.3	22.1	22.8	23.5	24.3	25.1	25.8	26.6	27.4	28.1	28.9	29.7	30.5	31.3	32.1	32.9	33.7	34.5	35.3
46.6	19.9	20.6	21.3	22.0	22.8	23.5	24.3	25.0	25.8	26.6	27.3	28.1	28.9	29.7	30.5	31.3	32.1	32.9	33.7	34.5	35.3
46.7	19.8	20.6	21.3	22.0	22.8	23.5	24.3	25.0	25.8	26.6	27.3	28.1	28.9	29.7	30.5	31.3	32.1	32.9	33.7	34.5	35.3
46.8	19.8	20.6	21.3	22.0	22.8	23.5	24.3	25.0	25.8	26.6	27.3	28.1	28.9	29.7	30.5	31.2	32.0	32.9	33.7	34.5	35.3
46.9	19.8	20.6	21.3	22.0	22.8	23.5	24.3	25.0	25.8	26.5	27.3	28.1	28.9	29.7	30.4	31.2	32.0	32.8	33.6	34.5	35.3
47.0	19.8	20.5	21.3	22.0	22.7	23.5	24.2	25.0	25.8	26.5	27.3	28.1	28.9	29.6	30.4	31.2	32.0	32.8	33.6	34.4	35.3
47.1	19.8	20.5	21.3	22.0	22.7	23.5	24.2	25.0	25.8	26.5	27.3	28.1	28.8	29.6	30.4	31.2	32.0	32.8	33.6	34.4	35.2
47.2	19.8	20.5	21.3	22.0	22.7	23.5	24.2	25.0	25.7	26.5	27.3	28.1	28.8	29.6	30.4	31.2	32.0	32.8	33.6	34.4	35.2
47.3	19.8	20.5	21.2	22.0	22.7	23.5	24.2	25.0	25.7	26.5	27.3	28.0	28.8	29.6	30.4	31.2	32.0	32.8	33.6	34.4	35.2
47.4	19.8	20.5	21.2	22.0	22.7	23.5	24.2	25.0	25.7	26.5	27.3	28.0	28.8	29.6	30.4	31.2	32.0	32.8	33.6	34.4	35.2
47.5	19.8	20.5	21.2	22.0	22.7	23.4	24.2	24.9	25.7	26.5	27.2	28.0	28.8	29.6	30.4	31.2	32.0	32.8	33.6	34.4	35.2
47.6	19.8	20.5	21.2	22.0	22.7	23.4	24.2	24.9	25.7	26.5	27.2	28.0	28.8	29.6	30.4	31.1	31.9	32.7	33.5	34.4	35.2
47.7	19.8	20.5	21.2	21.9	22.7	23.4	24.2	24.9	25.7	26.5	27.2	28.0	28.8	29.6	30.3	31.1	31.9	32.7	33.5	34.3	35.2
47.8	19.8	20.5	21.2	21.9	22.7	23.4	24.2	24.9	25.7	26.4	27.2	28.0	28.8	29.5	30.3	31.1	31.9	32.7	33.5	34.3	35.1
47.9	19.7	20.5	21.2	21.9	22.7	23.4	24.2	24.9	25.7	26.4	27.2	28.0	28.7	29.5	30.3	31.1	31.9	32.7	33.5	34.3	35.1
48.0	19.7	20.5	21.2	21.9	22.7	23.4	24.1	24.9	25.7	26.4	27.2	28.0	28.7	29.5	30.3	31.1	31.9	32.7	33.5	34.3	35.1
48.1	19.7	20.4	21.2	21.9	22.6	23.4	24.1	24.9	25.6	26.4	27.2	27.9	28.7	29.5	30.3	31.1	31.9	32.7	33.5	34.3	35.1
48.2	19.7	20.4	21.2	21.9	22.6	23.4	24.1	24.9	25.6	26.4	27.2	27.9	28.7	29.5	30.3	31.1	31.9	32.7	33.5	34.3	35.1
48.3	19.7	20.4	21.2	21.9	22.6	23.4	24.1	24.9	25.6	26.4	27.2	27.9	28.7	29.5	30.3	31.1	31.8	32.6	33.4	34.3	35.1
48.4	19.7	20.4	21.1	21.9	22.6	23.4	24.1	24.9	25.6	26.4	27.1	27.9	28.7	29.5	30.3	31.0	31.8	32.6	33.4	34.2	35.0
48.5	19.7	20.4	21.1	21.9	22.6	23.3	24.1	24.8	25.6	26.4	27.1	27.9	28.7	29.5	30.2	31.0	31.8	32.6	33.4	34.2	35.0
48.6	19.7	20.4	21.1	21.9	22.6	23.3	24.1	24.8	25.6	26.4	27.1	27.9	28.7	29.4	30.2	31.0	31.8	32.6	33.4	34.2	35.0
48.7	19.7	20.4	21.1	21.9	22.6	23.3	24.1	24.8	25.6	26.3	27.1	27.9	28.7	29.4	30.2	31.0	31.8	32.6	33.4	34.2	35.0
48.8	19.7	20.4	21.1	21.8	22.6	23.3	24.1	24.8	25.6	26.3	27.1	27.9	28.6	29.4	30.2	31.0	31.8	32.6	33.4	34.2	35.0
48.9	19.7	20.4	21.1	21.8	22.6	23.3	24.1	24.8	25.6	26.3	27.1	27.9	28.6	29.4	30.2	31.0	31.8	32.6	33.4	34.2	35.0
49.0	19.7	20.4	21.1	21.8	22.6	23.3	24.0	24.8	25.5	26.3	27.1	27.8	28.6	29.4	30.2	31.0	31.8	32.6	33.4	34.2	35.0
49.1	19.6	20.4	21.1	21.8	22.6	23.3	24.0	24.8	25.5	26.3	27.1	27.8	28.6	29.4	30.2	31.0	31.7	32.5	33.3	34.1	35.0
49.2	19.6	20.4	21.1	21.8	22.5	23.3	24.0	24.8	25.5	26.3	27.1	27.8	28.6	29.4	30.2	30.9	31.7	32.5	33.3	34.1	34.9
49.3	19.6	20.3	21.1	21.8	22.5	23.3	24.0	24.8	25.5	26.3	27.0	27.8	28.6	29.4	30.1	30.9	31.7	32.5	33.3	34.1	34.9
49.4	19.6	20.3	21.1	21.8	22.5	23.3	24.0	24.8	25.5	26.3	27.0	27.8	28.6	29.3	30.1	30.9	31.7	32.5	33.3	34.1	34.9
49.5	19.6	20.3	21.1	21.8	22.5	23.3	24.0	24.7	25.5	26.3	27.0	27.8	28.6	29.3	30.1	30.9	31.7	32.5	33.3	34.1	34.9
49.6	19.6	20.3	21.0	21.8	22.5	23.2	24.0	24.7	25.5	26.2	27.0	27.8	28.5	29.3	30.1	30.9	31.7	32.5	33.3	34.1	34.9
49.7	19.6	20.3	21.0	21.8	22.5	23.2	24.0	24.7	25.5	26.2	27.0	27.8	28.5	29.3	30.1	30.9	31.7	32.5	33.3	34.1	34.9
49.8	19.6	20.3	21.0	21.8	22.5	23.2	24.0	24.7	25.5	26.2	27.0	27.8	28.5	29.3	30.1	30.9	31.7	32.4	33.2	34.0	34.9
49.9	19.6	20.3	21.0	21.7	22.5	23.2	24.0	24.7	25.5	26.2	27.0	27.7	28.5	29.3	30.1	30.9	31.6	32.4	33.2	34.0	34.8
50.0	19.6	20.3	21.0	21.7	22.5	23.2	23.9	24.7	25.4	26.2	27.0	27.7	28.5	29.3	30.1	30.8	31.6	32.4	33.2	34.0	34.8

DIAMETER (INCHES) : 6.0 - 10.4
 HEIGHT (FEET) : 110 - 130

DBH	TOTAL HEIGHT (FEET)										
	110	112	114	116	118	120	122	124	126	128	130
(IN)	----- TARIF NUMBER -----										
6.0	67.2	68.8	70.4	71.9	73.5	75.1	76.7	78.3	79.9		
6.1	66.6	68.2	69.7	71.3	72.9	74.4	76.0	77.6	79.2		
6.2	66.0	67.6	69.1	70.6	72.2	73.8	75.3	76.9	78.5		
6.3	65.5	67.0	68.5	70.0	71.6	73.1	74.7	76.2	77.8	79.4	
6.4	64.9	66.4	67.9	69.4	71.0	72.5	74.1	75.6	77.2	78.7	
6.5	64.4	65.9	67.4	68.9	70.4	71.9	73.5	75.0	76.5	78.1	79.6
6.6	63.9	65.3	66.8	68.3	69.8	71.4	72.9	74.4	75.9	77.5	79.0
6.7	63.4	64.8	66.3	67.8	69.3	70.8	72.3	73.8	75.3	76.9	78.4
6.8	62.9	64.4	65.8	67.3	68.8	70.3	71.8	73.3	74.8	76.3	77.8
6.9	62.4	63.9	65.3	66.8	68.3	69.8	71.2	72.7	74.2	75.7	77.3
7.0	62.0	63.4	64.9	66.3	67.8	69.3	70.7	72.2	73.7	75.2	76.7
7.1	61.6	63.0	64.4	65.9	67.3	68.8	70.3	71.7	73.2	74.7	76.2
7.2	61.2	62.6	64.0	65.4	66.9	68.3	69.8	71.2	72.7	74.2	75.7
7.3	60.7	62.2	63.6	65.0	66.4	67.9	69.3	70.8	72.2	73.7	75.2
7.4	60.4	61.8	63.2	64.6	66.0	67.4	68.9	70.3	71.8	73.2	74.7
7.5	60.0	61.4	62.8	64.2	65.6	67.0	68.4	69.9	71.3	72.8	74.2
7.6	59.6	61.0	62.4	63.8	65.2	66.6	68.0	69.4	70.9	72.3	73.8
7.7	59.3	60.6	62.0	63.4	64.8	66.2	67.6	69.0	70.5	71.9	73.3
7.8	58.9	60.3	61.7	63.0	64.4	65.8	67.2	68.6	70.0	71.5	72.9
7.9	58.6	59.9	61.3	62.7	64.1	65.4	66.8	68.2	69.6	71.0	72.5
8.0	58.2	59.6	61.0	62.3	63.7	65.1	66.5	67.8	69.2	70.7	72.1
8.1	57.9	59.3	60.6	62.0	63.3	64.7	66.1	67.5	68.9	70.3	71.7
8.2	57.6	58.9	60.3	61.6	63.0	64.4	65.7	67.1	68.5	69.9	71.3
8.3	57.3	58.6	60.0	61.3	62.7	64.0	65.4	66.8	68.1	69.5	70.9
8.4	57.0	58.3	59.7	61.0	62.3	63.7	65.1	66.4	67.8	69.2	70.5
8.5	56.7	58.0	59.4	60.7	62.0	63.4	64.7	66.1	67.4	68.8	70.2
8.6	56.4	57.8	59.1	60.4	61.7	63.1	64.4	65.8	67.1	68.5	69.8
8.7	56.2	57.5	58.8	60.1	61.4	62.8	64.1	65.4	66.8	68.1	69.5
8.8	55.9	57.2	58.5	59.8	61.1	62.5	63.8	65.1	66.5	67.8	69.2
8.9	55.6	56.9	58.2	59.5	60.8	62.2	63.5	64.8	66.2	67.5	68.8
9.0	55.4	56.7	58.0	59.3	60.6	61.9	63.2	64.5	65.8	67.2	68.5
9.1	55.1	56.4	57.7	59.0	60.3	61.6	62.9	64.2	65.5	66.9	68.2
9.2	54.9	56.2	57.4	58.7	60.0	61.3	62.6	63.9	65.3	66.6	67.9
9.3	54.6	55.9	57.2	58.5	59.8	61.1	62.4	63.7	65.0	66.3	67.6
9.4	54.4	55.7	56.9	58.2	59.5	60.8	62.1	63.4	64.7	66.0	67.3
9.5	54.2	55.4	56.7	58.0	59.3	60.5	61.8	63.1	64.4	65.7	67.0
9.6	54.0	55.2	56.5	57.7	59.0	60.3	61.6	62.9	64.2	65.5	66.8
9.7	53.7	55.0	56.2	57.5	58.8	60.0	61.3	62.6	63.9	65.2	66.5
9.8	53.5	54.8	56.0	57.3	58.5	59.8	61.1	62.4	63.6	64.9	66.2
9.9	53.3	54.6	55.8	57.0	58.3	59.6	60.8	62.1	63.4	64.7	66.0
10.0	53.1	54.3	55.6	56.8	58.1	59.3	60.6	61.9	63.1	64.4	65.7
10.1	52.9	54.1	55.4	56.6	57.9	59.1	60.4	61.6	62.9	64.2	65.5
10.2	52.7	53.9	55.2	56.4	57.6	58.9	60.1	61.4	62.7	63.9	65.2
10.3	52.5	53.7	55.0	56.2	57.4	58.7	59.9	61.2	62.4	63.7	65.0
10.4	52.3	53.5	54.8	56.0	57.2	58.5	59.7	61.0	62.2	63.5	64.7

30 ACCESS TABLES

DIAMETER (INCHES) : 10.5 - 14.9
 HEIGHT (FEET) : 110 - 130

DBH	TOTAL HEIGHT (FEET)										
	110	112	114	116	118	120	122	124	126	128	130
(IN)	----- TARIF NUMBER -----										
10.5	52.1	53.3	54.6	55.8	57.0	58.2	59.5	60.7	62.0	63.2	64.5
10.6	51.9	53.2	54.4	55.6	56.8	58.0	59.3	60.5	61.8	63.0	64.3
10.7	51.8	53.0	54.2	55.4	56.6	57.8	59.1	60.3	61.5	62.8	64.1
10.8	51.6	52.8	54.0	55.2	56.4	57.6	58.9	60.1	61.3	62.6	63.8
10.9	51.4	52.6	53.8	55.0	56.2	57.4	58.7	59.9	61.1	62.4	63.6
11.0	51.2	52.4	53.6	54.8	56.0	57.3	58.5	59.7	60.9	62.2	63.4
11.1	51.1	52.3	53.5	54.7	55.9	57.1	58.3	59.5	60.7	62.0	63.2
11.2	50.9	52.1	53.3	54.5	55.7	56.9	58.1	59.3	60.5	61.8	63.0
11.3	50.7	51.9	53.1	54.3	55.5	56.7	57.9	59.1	60.3	61.6	62.8
11.4	50.6	51.8	52.9	54.1	55.3	56.5	57.7	58.9	60.1	61.4	62.6
11.5	50.4	51.6	52.8	54.0	55.2	56.3	57.5	58.8	60.0	61.2	62.4
11.6	50.3	51.4	52.6	53.8	55.0	56.2	57.4	58.6	59.8	61.0	62.2
11.7	50.1	51.3	52.5	53.6	54.8	56.0	57.2	58.4	59.6	60.8	62.0
11.8	50.0	51.1	52.3	53.5	54.7	55.8	57.0	58.2	59.4	60.6	61.8
11.9	49.8	51.0	52.2	53.3	54.5	55.7	56.9	58.0	59.2	60.4	61.7
12.0	49.7	50.8	52.0	53.2	54.3	55.5	56.7	57.9	59.1	60.3	61.5
12.1	49.5	50.7	51.9	53.0	54.2	55.4	56.5	57.7	58.9	60.1	61.3
12.2	49.4	50.6	51.7	52.9	54.0	55.2	56.4	57.6	58.7	59.9	61.1
12.3	49.3	50.4	51.6	52.7	53.9	55.0	56.2	57.4	58.6	59.8	61.0
12.4	49.1	50.3	51.4	52.6	53.7	54.9	56.1	57.2	58.4	59.6	60.8
12.5	49.0	50.1	51.3	52.4	53.6	54.7	55.9	57.1	58.3	59.4	60.6
12.6	48.9	50.0	51.1	52.3	53.4	54.6	55.8	56.9	58.1	59.3	60.5
12.7	48.7	49.9	51.0	52.1	53.3	54.5	55.6	56.8	57.9	59.1	60.3
12.8	48.6	49.7	50.9	52.0	53.2	54.3	55.5	56.6	57.8	59.0	60.1
12.9	48.5	49.6	50.7	51.9	53.0	54.2	55.3	56.5	57.6	58.8	60.0
13.0	48.4	49.5	50.6	51.7	52.9	54.0	55.2	56.3	57.5	58.7	59.8
13.1	48.2	49.4	50.5	51.6	52.8	53.9	55.0	56.2	57.4	58.5	59.7
13.2	48.1	49.2	50.4	51.5	52.6	53.8	54.9	56.1	57.2	58.4	59.5
13.3	48.0	49.1	50.2	51.4	52.5	53.6	54.8	55.9	57.1	58.2	59.4
13.4	47.9	49.0	50.1	51.2	52.4	53.5	54.6	55.8	56.9	58.1	59.2
13.5	47.8	48.9	50.0	51.1	52.2	53.4	54.5	55.6	56.8	57.9	59.1
13.6	47.7	48.8	49.9	51.0	52.1	53.2	54.4	55.5	56.7	57.8	59.0
13.7	47.5	48.6	49.8	50.9	52.0	53.1	54.2	55.4	56.5	57.7	58.8
13.8	47.4	48.5	49.6	50.7	51.9	53.0	54.1	55.3	56.4	57.5	58.7
13.9	47.3	48.4	49.5	50.6	51.7	52.9	54.0	55.1	56.3	57.4	58.5
14.0	47.2	48.3	49.4	50.5	51.6	52.7	53.9	55.0	56.1	57.3	58.4
14.1	47.1	48.2	49.3	50.4	51.5	52.6	53.8	54.9	56.0	57.1	58.3
14.2	47.0	48.1	49.2	50.3	51.4	52.5	53.6	54.8	55.9	57.0	58.2
14.3	46.9	48.0	49.1	50.2	51.3	52.4	53.5	54.6	55.8	56.9	58.0
14.4	46.8	47.9	49.0	50.1	51.2	52.3	53.4	54.5	55.6	56.8	57.9
14.5	46.7	47.8	48.9	50.0	51.1	52.2	53.3	54.4	55.5	56.6	57.8
14.6	46.6	47.7	48.8	49.9	51.0	52.1	53.2	54.3	55.4	56.5	57.7
14.7	46.5	47.6	48.7	49.8	50.8	52.0	53.1	54.2	55.3	56.4	57.5
14.8	46.4	47.5	48.6	49.7	50.7	51.8	52.9	54.1	55.2	56.3	57.4
14.9	46.3	47.4	48.5	49.5	50.6	51.7	52.8	53.9	55.1	56.2	57.3

DIAMETER (INCHES) : 15.0 - 19.4
 HEIGHT (FEET) : 110 - 130

DBH (IN)	TOTAL HEIGHT (FEET)										
	110	112	114	116	118	120	122	124	126	128	130
15.0	46.2	47.3	48.4	49.4	50.5	51.6	52.7	53.8	54.9	56.1	57.2
15.1	46.1	47.2	48.3	49.3	50.4	51.5	52.6	53.7	54.8	55.9	57.1
15.2	46.0	47.1	48.2	49.2	50.3	51.4	52.5	53.6	54.7	55.8	56.9
15.3	45.9	47.0	48.1	49.2	50.2	51.3	52.4	53.5	54.6	55.7	56.8
15.4	45.8	46.9	48.0	49.1	50.1	51.2	52.3	53.4	54.5	55.6	56.7
15.5	45.8	46.8	47.9	49.0	50.0	51.1	52.2	53.3	54.4	55.5	56.6
15.6	45.7	46.7	47.8	48.9	49.9	51.0	52.1	53.2	54.3	55.4	56.5
15.7	45.6	46.6	47.7	48.8	49.8	50.9	52.0	53.1	54.2	55.3	56.4
15.8	45.5	46.6	47.6	48.7	49.8	50.8	51.9	53.0	54.1	55.2	56.3
15.9	45.4	46.5	47.5	48.6	49.7	50.7	51.8	52.9	54.0	55.1	56.2
16.0	45.3	46.4	47.4	48.5	49.6	50.6	51.7	52.8	53.9	55.0	56.1
16.1	45.2	46.3	47.4	48.4	49.5	50.6	51.6	52.7	53.8	54.9	56.0
16.2	45.2	46.2	47.3	48.3	49.4	50.5	51.5	52.6	53.7	54.8	55.9
16.3	45.1	46.1	47.2	48.2	49.3	50.4	51.4	52.5	53.6	54.7	55.8
16.4	45.0	46.0	47.1	48.2	49.2	50.3	51.4	52.4	53.5	54.6	55.7
16.5	44.9	46.0	47.0	48.1	49.1	50.2	51.3	52.3	53.4	54.5	55.6
16.6	44.8	45.9	46.9	48.0	49.0	50.1	51.2	52.2	53.3	54.4	55.5
16.7	44.8	45.8	46.9	47.9	49.0	50.0	51.1	52.2	53.2	54.3	55.4
16.8	44.7	45.7	46.8	47.8	48.9	49.9	51.0	52.1	53.1	54.2	55.3
16.9	44.6	45.7	46.7	47.7	48.8	49.8	50.9	52.0	53.0	54.1	55.2
17.0	44.5	45.6	46.6	47.7	48.7	49.8	50.8	51.9	53.0	54.0	55.1
17.1	44.5	45.5	46.5	47.6	48.6	49.7	50.7	51.8	52.9	53.9	55.0
17.2	44.4	45.4	46.5	47.5	48.6	49.6	50.7	51.7	52.8	53.9	54.9
17.3	44.3	45.4	46.4	47.4	48.5	49.5	50.6	51.6	52.7	53.8	54.8
17.4	44.3	45.3	46.3	47.4	48.4	49.4	50.5	51.6	52.6	53.7	54.8
17.5	44.2	45.2	46.2	47.3	48.3	49.4	50.4	51.5	52.5	53.6	54.7
17.6	44.1	45.1	46.2	47.2	48.2	49.3	50.3	51.4	52.4	53.5	54.6
17.7	44.0	45.1	46.1	47.1	48.2	49.2	50.3	51.3	52.4	53.4	54.5
17.8	44.0	45.0	46.0	47.1	48.1	49.1	50.2	51.2	52.3	53.3	54.4
17.9	43.9	44.9	46.0	47.0	48.0	49.1	50.1	51.1	52.2	53.3	54.3
18.0	43.8	44.9	45.9	46.9	47.9	49.0	50.0	51.1	52.1	53.2	54.2
18.1	43.8	44.8	45.8	46.8	47.9	48.9	49.9	51.0	52.0	53.1	54.2
18.2	43.7	44.7	45.7	46.8	47.8	48.8	49.9	50.9	52.0	53.0	54.1
18.3	43.6	44.7	45.7	46.7	47.7	48.8	49.8	50.8	51.9	52.9	54.0
18.4	43.6	44.6	45.6	46.6	47.7	48.7	49.7	50.8	51.8	52.9	53.9
18.5	43.5	44.5	45.5	46.6	47.6	48.6	49.6	50.7	51.7	52.8	53.8
18.6	43.4	44.5	45.5	46.5	47.5	48.5	49.6	50.6	51.7	52.7	53.8
18.7	43.4	44.4	45.4	46.4	47.4	48.5	49.5	50.5	51.6	52.6	53.7
18.8	43.3	44.3	45.3	46.4	47.4	48.4	49.4	50.5	51.5	52.6	53.6
18.9	43.3	44.3	45.3	46.3	47.3	48.3	49.4	50.4	51.4	52.5	53.5
19.0	43.2	44.2	45.2	46.2	47.2	48.3	49.3	50.3	51.4	52.4	53.5
19.1	43.1	44.1	45.1	46.2	47.2	48.2	49.2	50.3	51.3	52.3	53.4
19.2	43.1	44.1	45.1	46.1	47.1	48.1	49.2	50.2	51.2	52.3	53.3
19.3	43.0	44.0	45.0	46.0	47.0	48.1	49.1	50.1	51.2	52.2	53.2
19.4	43.0	44.0	45.0	46.0	47.0	48.0	49.0	50.0	51.1	52.1	53.2

32 ACCESS TABLES

DIAMETER (INCHES) : 19.5 - 23.9
 HEIGHT (FEET) : 110 - 130

DBH	TOTAL HEIGHT (FEET)										
	110	112	114	116	118	120	122	124	126	128	130
(IN)	----- TARIF NUMBER -----										
19.5	42.9	43.9	44.9	45.9	46.9	47.9	49.0	50.0	51.0	52.0	53.1
19.6	42.8	43.8	44.8	45.8	46.9	47.9	48.9	49.9	50.9	52.0	53.0
19.7	42.8	43.8	44.8	45.8	46.8	47.8	48.8	49.8	50.9	51.9	52.9
19.8	42.7	43.7	44.7	45.7	46.7	47.7	48.8	49.8	50.8	51.8	52.9
19.9	42.7	43.7	44.7	45.7	46.7	47.7	48.7	49.7	50.7	51.8	52.8
20.0	42.6	43.6	44.6	45.6	46.6	47.6	48.6	49.7	50.7	51.7	52.7
20.1	42.6	43.6	44.5	45.5	46.6	47.6	48.6	49.6	50.6	51.6	52.7
20.2	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.6	52.6
20.3	42.5	43.4	44.4	45.4	46.4	47.4	48.4	49.5	50.5	51.5	52.5
20.4	42.4	43.4	44.4	45.4	46.4	47.4	48.4	49.4	50.4	51.4	52.5
20.5	42.4	43.3	44.3	45.3	46.3	47.3	48.3	49.3	50.4	51.4	52.4
20.6	42.3	43.3	44.3	45.3	46.3	47.3	48.3	49.3	50.3	51.3	52.3
20.7	42.2	43.2	44.2	45.2	46.2	47.2	48.2	49.2	50.2	51.2	52.3
20.8	42.2	43.2	44.2	45.1	46.1	47.1	48.1	49.2	50.2	51.2	52.2
20.9	42.1	43.1	44.1	45.1	46.1	47.1	48.1	49.1	50.1	51.1	52.1
21.0	42.1	43.1	44.1	45.0	46.0	47.0	48.0	49.0	50.0	51.1	52.1
21.1	42.0	43.0	44.0	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0
21.2	42.0	43.0	43.9	44.9	45.9	46.9	47.9	48.9	49.9	50.9	52.0
21.3	41.9	42.9	43.9	44.9	45.9	46.9	47.9	48.9	49.9	50.9	51.9
21.4	41.9	42.9	43.8	44.8	45.8	46.8	47.8	48.8	49.8	50.8	51.8
21.5	41.8	42.8	43.8	44.8	45.8	46.7	47.7	48.7	49.7	50.8	51.8
21.6	41.8	42.8	43.7	44.7	45.7	46.7	47.7	48.7	49.7	50.7	51.7
21.7	41.7	42.7	43.7	44.7	45.7	46.6	47.6	48.6	49.6	50.6	51.7
21.8	41.7	42.7	43.6	44.6	45.6	46.6	47.6	48.6	49.6	50.6	51.6
21.9	41.7	42.6	43.6	44.6	45.5	46.5	47.5	48.5	49.5	50.5	51.5
22.0	41.6	42.6	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5
22.1	41.6	42.5	43.5	44.5	45.4	46.4	47.4	48.4	49.4	50.4	51.4
22.2	41.5	42.5	43.4	44.4	45.4	46.4	47.4	48.4	49.4	50.4	51.4
22.3	41.5	42.4	43.4	44.4	45.3	46.3	47.3	48.3	49.3	50.3	51.3
22.4	41.4	42.4	43.3	44.3	45.3	46.3	47.3	48.3	49.2	50.2	51.2
22.5	41.4	42.3	43.3	44.3	45.2	46.2	47.2	48.2	49.2	50.2	51.2
22.6	41.3	42.3	43.3	44.2	45.2	46.2	47.2	48.1	49.1	50.1	51.1
22.7	41.3	42.2	43.2	44.2	45.1	46.1	47.1	48.1	49.1	50.1	51.1
22.8	41.2	42.2	43.2	44.1	45.1	46.1	47.1	48.0	49.0	50.0	51.0
22.9	41.2	42.2	43.1	44.1	45.1	46.0	47.0	48.0	49.0	50.0	51.0
23.0	41.2	42.1	43.1	44.0	45.0	46.0	47.0	47.9	48.9	49.9	50.9
23.1	41.1	42.1	43.0	44.0	45.0	45.9	46.9	47.9	48.9	49.9	50.9
23.2	41.1	42.0	43.0	43.9	44.9	45.9	46.9	47.8	48.8	49.8	50.8
23.3	41.0	42.0	42.9	43.9	44.9	45.8	46.8	47.8	48.8	49.8	50.8
23.4	41.0	41.9	42.9	43.9	44.8	45.8	46.8	47.7	48.7	49.7	50.7
23.5	40.9	41.9	42.8	43.8	44.8	45.7	46.7	47.7	48.7	49.7	50.7
23.6	40.9	41.8	42.8	43.8	44.7	45.7	46.7	47.6	48.6	49.6	50.6
23.7	40.9	41.8	42.8	43.7	44.7	45.6	46.6	47.6	48.6	49.6	50.5
23.8	40.8	41.8	42.7	43.7	44.6	45.6	46.6	47.5	48.5	49.5	50.5
23.9	40.8	41.7	42.7	43.6	44.6	45.6	46.5	47.5	48.5	49.5	50.4

DIAMETER (INCHES) : 24.0 - 28.4
 HEIGHT (FEET) : 110 - 130

DBH	TOTAL HEIGHT (FEET)										
	110	112	114	116	118	120	122	124	126	128	130
(IN)	----- TARIF NUMBER -----										
24.0	40.7	41.7	42.6	43.6	44.5	45.5	46.5	47.5	48.4	49.4	50.4
24.1	40.7	41.6	42.6	43.5	44.5	45.5	46.4	47.4	48.4	49.4	50.3
24.2	40.7	41.6	42.5	43.5	44.5	45.4	46.4	47.4	48.3	49.3	50.3
24.3	40.6	41.6	42.5	43.5	44.4	45.4	46.3	47.3	48.3	49.3	50.2
24.4	40.6	41.5	42.5	43.4	44.4	45.3	46.3	47.3	48.2	49.2	50.2
24.5	40.5	41.5	42.4	43.4	44.3	45.3	46.3	47.2	48.2	49.2	50.2
24.6	40.5	41.4	42.4	43.3	44.3	45.2	46.2	47.2	48.1	49.1	50.1
24.7	40.5	41.4	42.3	43.3	44.2	45.2	46.2	47.1	48.1	49.1	50.1
24.8	40.4	41.4	42.3	43.2	44.2	45.2	46.1	47.1	48.1	49.0	50.0
24.9	40.4	41.3	42.3	43.2	44.2	45.1	46.1	47.0	48.0	49.0	50.0
25.0	40.3	41.3	42.2	43.2	44.1	45.1	46.0	47.0	48.0	48.9	49.9
25.1	40.3	41.2	42.2	43.1	44.1	45.0	46.0	47.0	47.9	48.9	49.9
25.2	40.3	41.2	42.1	43.1	44.0	45.0	45.9	46.9	47.9	48.8	49.8
25.3	40.2	41.2	42.1	43.0	44.0	44.9	45.9	46.9	47.8	48.8	49.8
25.4	40.2	41.1	42.1	43.0	44.0	44.9	45.9	46.8	47.8	48.8	49.7
25.5	40.2	41.1	42.0	43.0	43.9	44.9	45.8	46.8	47.7	48.7	49.7
25.6	40.1	41.1	42.0	42.9	43.9	44.8	45.8	46.7	47.7	48.7	49.6
25.7	40.1	41.0	41.9	42.9	43.8	44.8	45.7	46.7	47.7	48.6	49.6
25.8	40.0	41.0	41.9	42.9	43.8	44.7	45.7	46.7	47.6	48.6	49.5
25.9	40.0	40.9	41.9	42.8	43.8	44.7	45.7	46.6	47.6	48.5	49.5
26.0	40.0	40.9	41.8	42.8	43.7	44.7	45.6	46.6	47.5	48.5	49.5
26.1	39.9	40.9	41.8	42.7	43.7	44.6	45.6	46.5	47.5	48.4	49.4
26.2	39.9	40.8	41.8	42.7	43.6	44.6	45.5	46.5	47.4	48.4	49.4
26.3	39.9	40.8	41.7	42.7	43.6	44.5	45.5	46.4	47.4	48.4	49.3
26.4	39.8	40.8	41.7	42.6	43.6	44.5	45.5	46.4	47.4	48.3	49.3
26.5	39.8	40.7	41.7	42.6	43.5	44.5	45.4	46.4	47.3	48.3	49.2
26.6	39.8	40.7	41.6	42.6	43.5	44.4	45.4	46.3	47.3	48.2	49.2
26.7	39.7	40.7	41.6	42.5	43.5	44.4	45.3	46.3	47.2	48.2	49.2
26.8	39.7	40.6	41.5	42.5	43.4	44.4	45.3	46.2	47.2	48.2	49.1
26.9	39.7	40.6	41.5	42.4	43.4	44.3	45.3	46.2	47.2	48.1	49.1
27.0	39.6	40.6	41.5	42.4	43.3	44.3	45.2	46.2	47.1	48.1	49.0
27.1	39.6	40.5	41.4	42.4	43.3	44.2	45.2	46.1	47.1	48.0	49.0
27.2	39.6	40.5	41.4	42.3	43.3	44.2	45.1	46.1	47.0	48.0	49.0
27.3	39.5	40.5	41.4	42.3	43.2	44.2	45.1	46.1	47.0	48.0	48.9
27.4	39.5	40.4	41.3	42.3	43.2	44.1	45.1	46.0	47.0	47.9	48.9
27.5	39.5	40.4	41.3	42.2	43.2	44.1	45.0	46.0	46.9	47.9	48.8
27.6	39.4	40.4	41.3	42.2	43.1	44.1	45.0	45.9	46.9	47.8	48.8
27.7	39.4	40.3	41.2	42.2	43.1	44.0	45.0	45.9	46.8	47.8	48.8
27.8	39.4	40.3	41.2	42.1	43.1	44.0	44.9	45.9	46.8	47.8	48.7
27.9	39.3	40.3	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.7
28.0	39.3	40.2	41.1	42.1	43.0	43.9	44.9	45.8	46.7	47.7	48.6
28.1	39.3	40.2	41.1	42.0	43.0	43.9	44.8	45.8	46.7	47.6	48.6
28.2	39.2	40.2	41.1	42.0	42.9	43.8	44.8	45.7	46.7	47.6	48.6
28.3	39.2	40.1	41.0	42.0	42.9	43.8	44.7	45.7	46.6	47.6	48.5
28.4	39.2	40.1	41.0	41.9	42.8	43.8	44.7	45.6	46.6	47.5	48.5

34 ACCESS TABLES

DIAMETER (INCHES) : 28.5 - 32.9
 HEIGHT (FEET) : 110 - 130

DBH	TOTAL HEIGHT (FEET)										
	110	112	114	116	118	120	122	124	126	128	130
(IN)	----- TARIF NUMBER -----										
28.5	39.2	40.1	41.0	41.9	42.8	43.7	44.7	45.6	46.5	47.5	48.4
28.6	39.1	40.0	40.9	41.9	42.8	43.7	44.6	45.6	46.5	47.5	48.4
28.7	39.1	40.0	40.9	41.8	42.7	43.7	44.6	45.5	46.5	47.4	48.4
28.8	39.1	40.0	40.9	41.8	42.7	43.6	44.6	45.5	46.4	47.4	48.3
28.9	39.0	39.9	40.8	41.8	42.7	43.6	44.5	45.5	46.4	47.3	48.3
29.0	39.0	39.9	40.8	41.7	42.7	43.6	44.5	45.4	46.4	47.3	48.3
29.1	39.0	39.9	40.8	41.7	42.6	43.5	44.5	45.4	46.3	47.3	48.2
29.2	38.9	39.8	40.8	41.7	42.6	43.5	44.4	45.4	46.3	47.2	48.2
29.3	38.9	39.8	40.7	41.6	42.6	43.5	44.4	45.3	46.3	47.2	48.1
29.4	38.9	39.8	40.7	41.6	42.5	43.4	44.4	45.3	46.2	47.2	48.1
29.5	38.9	39.8	40.7	41.6	42.5	43.4	44.3	45.3	46.2	47.1	48.1
29.6	38.8	39.7	40.6	41.5	42.5	43.4	44.3	45.2	46.2	47.1	48.0
29.7	38.8	39.7	40.6	41.5	42.4	43.3	44.3	45.2	46.1	47.1	48.0
29.8	38.8	39.7	40.6	41.5	42.4	43.3	44.2	45.2	46.1	47.0	48.0
29.9	38.7	39.6	40.5	41.5	42.4	43.3	44.2	45.1	46.1	47.0	47.9
30.0	38.7	39.6	40.5	41.4	42.3	43.2	44.2	45.1	46.0	47.0	47.9
30.1	38.7	39.6	40.5	41.4	42.3	43.2	44.1	45.1	46.0	46.9	47.9
30.2	38.7	39.6	40.5	41.4	42.3	43.2	44.1	45.0	46.0	46.9	47.8
30.3	38.6	39.5	40.4	41.3	42.2	43.2	44.1	45.0	45.9	46.9	47.8
30.4	38.6	39.5	40.4	41.3	42.2	43.1	44.0	45.0	45.9	46.8	47.8
30.5	38.6	39.5	40.4	41.3	42.2	43.1	44.0	44.9	45.9	46.8	47.7
30.6	38.5	39.4	40.3	41.2	42.1	43.1	44.0	44.9	45.8	46.8	47.7
30.7	38.5	39.4	40.3	41.2	42.1	43.0	43.9	44.9	45.8	46.7	47.7
30.8	38.5	39.4	40.3	41.2	42.1	43.0	43.9	44.8	45.8	46.7	47.6
30.9	38.5	39.4	40.3	41.2	42.1	43.0	43.9	44.8	45.7	46.7	47.6
31.0	38.4	39.3	40.2	41.1	42.0	42.9	43.9	44.8	45.7	46.6	47.6
31.1	38.4	39.3	40.2	41.1	42.0	42.9	43.8	44.7	45.7	46.6	47.5
31.2	38.4	39.3	40.2	41.1	42.0	42.9	43.8	44.7	45.6	46.6	47.5
31.3	38.4	39.2	40.1	41.0	41.9	42.9	43.8	44.7	45.6	46.5	47.5
31.4	38.3	39.2	40.1	41.0	41.9	42.8	43.7	44.6	45.6	46.5	47.4
31.5	38.3	39.2	40.1	41.0	41.9	42.8	43.7	44.6	45.5	46.5	47.4
31.6	38.3	39.2	40.1	41.0	41.9	42.8	43.7	44.6	45.5	46.4	47.4
31.7	38.2	39.1	40.0	40.9	41.8	42.7	43.6	44.6	45.5	46.4	47.3
31.8	38.2	39.1	40.0	40.9	41.8	42.7	43.6	44.5	45.4	46.4	47.3
31.9	38.2	39.1	40.0	40.9	41.8	42.7	43.6	44.5	45.4	46.3	47.3
32.0	38.2	39.1	39.9	40.8	41.7	42.6	43.6	44.5	45.4	46.3	47.2
32.1	38.1	39.0	39.9	40.8	41.7	42.6	43.5	44.4	45.4	46.3	47.2
32.2	38.1	39.0	39.9	40.8	41.7	42.6	43.5	44.4	45.3	46.2	47.2
32.3	38.1	39.0	39.9	40.8	41.7	42.6	43.5	44.4	45.3	46.2	47.1
32.4	38.1	39.0	39.8	40.7	41.6	42.5	43.4	44.3	45.3	46.2	47.1
32.5	38.0	38.9	39.8	40.7	41.6	42.5	43.4	44.3	45.2	46.1	47.1
32.6	38.0	38.9	39.8	40.7	41.6	42.5	43.4	44.3	45.2	46.1	47.0
32.7	38.0	38.9	39.8	40.7	41.5	42.4	43.4	44.3	45.2	46.1	47.0
32.8	38.0	38.8	39.7	40.6	41.5	42.4	43.3	44.2	45.1	46.1	47.0
32.9	37.9	38.8	39.7	40.6	41.5	42.4	43.3	44.2	45.1	46.0	46.9

DIAMETER (INCHES) : 33.0 - 37.4
 HEIGHT (FEET) : 110 - 130

DBH (IN)	TOTAL HEIGHT (FEET)										
	110	112	114	116	118	120	122	124	126	128	130
33.0	37.9	38.8	39.7	40.6	41.5	42.4	43.3	44.2	45.1	46.0	46.9
33.1	37.9	38.8	39.7	40.5	41.4	42.3	43.2	44.1	45.1	46.0	46.9
33.2	37.9	38.7	39.6	40.5	41.4	42.3	43.2	44.1	45.0	45.9	46.9
33.3	37.8	38.7	39.6	40.5	41.4	42.3	43.2	44.1	45.0	45.9	46.8
33.4	37.8	38.7	39.6	40.5	41.4	42.3	43.2	44.1	45.0	45.9	46.8
33.5	37.8	38.7	39.6	40.4	41.3	42.2	43.1	44.0	44.9	45.8	46.8
33.6	37.8	38.6	39.5	40.4	41.3	42.2	43.1	44.0	44.9	45.8	46.7
33.7	37.7	38.6	39.5	40.4	41.3	42.2	43.1	44.0	44.9	45.8	46.7
33.8	37.7	38.6	39.5	40.4	41.3	42.1	43.0	43.9	44.9	45.8	46.7
33.9	37.7	38.6	39.5	40.3	41.2	42.1	43.0	43.9	44.8	45.7	46.6
34.0	37.7	38.6	39.4	40.3	41.2	42.1	43.0	43.9	44.8	45.7	46.6
34.1	37.7	38.5	39.4	40.3	41.2	42.1	43.0	43.9	44.8	45.7	46.6
34.2	37.6	38.5	39.4	40.3	41.2	42.0	42.9	43.8	44.7	45.6	46.6
34.3	37.6	38.5	39.4	40.2	41.1	42.0	42.9	43.8	44.7	45.6	46.5
34.4	37.6	38.5	39.3	40.2	41.1	42.0	42.9	43.8	44.7	45.6	46.5
34.5	37.6	38.4	39.3	40.2	41.1	42.0	42.9	43.8	44.7	45.6	46.5
34.6	37.5	38.4	39.3	40.2	41.1	41.9	42.8	43.7	44.6	45.5	46.4
34.7	37.5	38.4	39.3	40.1	41.0	41.9	42.8	43.7	44.6	45.5	46.4
34.8	37.5	38.4	39.2	40.1	41.0	41.9	42.8	43.7	44.6	45.5	46.4
34.9	37.5	38.3	39.2	40.1	41.0	41.9	42.8	43.7	44.6	45.5	46.4
35.0	37.4	38.3	39.2	40.1	41.0	41.8	42.7	43.6	44.5	45.4	46.3
35.1	37.4	38.3	39.2	40.0	40.9	41.8	42.7	43.6	44.5	45.4	46.3
35.2	37.4	38.3	39.1	40.0	40.9	41.8	42.7	43.6	44.5	45.4	46.3
35.3	37.4	38.2	39.1	40.0	40.9	41.8	42.7	43.5	44.4	45.3	46.2
35.4	37.4	38.2	39.1	40.0	40.9	41.7	42.6	43.5	44.4	45.3	46.2
35.5	37.3	38.2	39.1	40.0	40.8	41.7	42.6	43.5	44.4	45.3	46.2
35.6	37.3	38.2	39.1	39.9	40.8	41.7	42.6	43.5	44.4	45.3	46.2
35.7	37.3	38.2	39.0	39.9	40.8	41.7	42.6	43.4	44.3	45.2	46.1
35.8	37.3	38.1	39.0	39.9	40.8	41.6	42.5	43.4	44.3	45.2	46.1
35.9	37.2	38.1	39.0	39.9	40.7	41.6	42.5	43.4	44.3	45.2	46.1
36.0	37.2	38.1	39.0	39.8	40.7	41.6	42.5	43.4	44.3	45.2	46.1
36.1	37.2	38.1	38.9	39.8	40.7	41.6	42.5	43.3	44.2	45.1	46.0
36.2	37.2	38.0	38.9	39.8	40.7	41.5	42.4	43.3	44.2	45.1	46.0
36.3	37.2	38.0	38.9	39.8	40.6	41.5	42.4	43.3	44.2	45.1	46.0
36.4	37.1	38.0	38.9	39.7	40.6	41.5	42.4	43.3	44.2	45.1	46.0
36.5	37.1	38.0	38.8	39.7	40.6	41.5	42.4	43.2	44.1	45.0	45.9
36.6	37.1	38.0	38.8	39.7	40.6	41.4	42.3	43.2	44.1	45.0	45.9
36.7	37.1	37.9	38.8	39.7	40.5	41.4	42.3	43.2	44.1	45.0	45.9
36.8	37.1	37.9	38.8	39.7	40.5	41.4	42.3	43.2	44.1	45.0	45.8
36.9	37.0	37.9	38.8	39.6	40.5	41.4	42.3	43.1	44.0	44.9	45.8
37.0	37.0	37.9	38.7	39.6	40.5	41.4	42.2	43.1	44.0	44.9	45.8
37.1	37.0	37.9	38.7	39.6	40.5	41.3	42.2	43.1	44.0	44.9	45.8
37.2	37.0	37.8	38.7	39.6	40.4	41.3	42.2	43.1	44.0	44.9	45.7
37.3	37.0	37.8	38.7	39.5	40.4	41.3	42.2	43.0	43.9	44.8	45.7
37.4	36.9	37.8	38.7	39.5	40.4	41.3	42.1	43.0	43.9	44.8	45.7

36 ACCESS TABLES

DIAMETER (INCHES) : 37.5 - 41.9
 HEIGHT (FEET) : 110 - 130

DBH	TOTAL HEIGHT (FEET)										
	110	112	114	116	118	120	122	124	126	128	130
(IN)	----- TARIF NUMBER -----										
37.5	36.9	37.8	38.6	39.5	40.4	41.2	42.1	43.0	43.9	44.8	45.7
37.6	36.9	37.7	38.6	39.5	40.3	41.2	42.1	43.0	43.9	44.8	45.6
37.7	36.9	37.7	38.6	39.5	40.3	41.2	42.1	43.0	43.8	44.7	45.6
37.8	36.9	37.7	38.6	39.4	40.3	41.2	42.0	42.9	43.8	44.7	45.6
37.9	36.8	37.7	38.5	39.4	40.3	41.1	42.0	42.9	43.8	44.7	45.6
38.0	36.8	37.7	38.5	39.4	40.3	41.1	42.0	42.9	43.8	44.7	45.5
38.1	36.8	37.6	38.5	39.4	40.2	41.1	42.0	42.9	43.7	44.6	45.5
38.2	36.8	37.6	38.5	39.3	40.2	41.1	42.0	42.8	43.7	44.6	45.5
38.3	36.8	37.6	38.5	39.3	40.2	41.1	41.9	42.8	43.7	44.6	45.5
38.4	36.7	37.6	38.4	39.3	40.2	41.0	41.9	42.8	43.7	44.6	45.4
38.5	36.7	37.6	38.4	39.3	40.1	41.0	41.9	42.8	43.6	44.5	45.4
38.6	36.7	37.5	38.4	39.3	40.1	41.0	41.9	42.7	43.6	44.5	45.4
38.7	36.7	37.5	38.4	39.2	40.1	41.0	41.8	42.7	43.6	44.5	45.4
38.8	36.7	37.5	38.4	39.2	40.1	41.0	41.8	42.7	43.6	44.5	45.3
38.9	36.6	37.5	38.3	39.2	40.1	40.9	41.8	42.7	43.6	44.4	45.3
39.0	36.6	37.5	38.3	39.2	40.0	40.9	41.8	42.7	43.5	44.4	45.3
39.1	36.6	37.4	38.3	39.2	40.0	40.9	41.8	42.6	43.5	44.4	45.3
39.2	36.6	37.4	38.3	39.1	40.0	40.9	41.7	42.6	43.5	44.4	45.3
39.3	36.6	37.4	38.3	39.1	40.0	40.8	41.7	42.6	43.5	44.3	45.2
39.4	36.5	37.4	38.2	39.1	40.0	40.8	41.7	42.6	43.4	44.3	45.2
39.5	36.5	37.4	38.2	39.1	39.9	40.8	41.7	42.5	43.4	44.3	45.2
39.6	36.5	37.3	38.2	39.1	39.9	40.8	41.6	42.5	43.4	44.3	45.2
39.7	36.5	37.3	38.2	39.0	39.9	40.8	41.6	42.5	43.4	44.3	45.1
39.8	36.5	37.3	38.2	39.0	39.9	40.7	41.6	42.5	43.4	44.2	45.1
39.9	36.4	37.3	38.1	39.0	39.9	40.7	41.6	42.5	43.3	44.2	45.1
40.0	36.4	37.3	38.1	39.0	39.8	40.7	41.6	42.4	43.3	44.2	45.1
40.1	36.4	37.3	38.1	39.0	39.8	40.7	41.5	42.4	43.3	44.2	45.0
40.2	36.4	37.2	38.1	38.9	39.8	40.7	41.5	42.4	43.3	44.1	45.0
40.3	36.4	37.2	38.1	38.9	39.8	40.6	41.5	42.4	43.2	44.1	45.0
40.4	36.3	37.2	38.0	38.9	39.8	40.6	41.5	42.3	43.2	44.1	45.0
40.5	36.3	37.2	38.0	38.9	39.7	40.6	41.5	42.3	43.2	44.1	45.0
40.6	36.3	37.2	38.0	38.9	39.7	40.6	41.4	42.3	43.2	44.0	44.9
40.7	36.3	37.1	38.0	38.8	39.7	40.6	41.4	42.3	43.2	44.0	44.9
40.8	36.3	37.1	38.0	38.8	39.7	40.5	41.4	42.3	43.1	44.0	44.9
40.9	36.3	37.1	37.9	38.8	39.7	40.5	41.4	42.2	43.1	44.0	44.9
41.0	36.2	37.1	37.9	38.8	39.6	40.5	41.4	42.2	43.1	44.0	44.8
41.1	36.2	37.1	37.9	38.8	39.6	40.5	41.3	42.2	43.1	43.9	44.8
41.2	36.2	37.0	37.9	38.7	39.6	40.5	41.3	42.2	43.0	43.9	44.8
41.3	36.2	37.0	37.9	38.7	39.6	40.4	41.3	42.2	43.0	43.9	44.8
41.4	36.2	37.0	37.9	38.7	39.6	40.4	41.3	42.1	43.0	43.9	44.8
41.5	36.2	37.0	37.8	38.7	39.5	40.4	41.3	42.1	43.0	43.9	44.7
41.6	36.1	37.0	37.8	38.7	39.5	40.4	41.2	42.1	43.0	43.8	44.7
41.7	36.1	37.0	37.8	38.6	39.5	40.4	41.2	42.1	42.9	43.8	44.7
41.8	36.1	36.9	37.8	38.6	39.5	40.3	41.2	42.1	42.9	43.8	44.7
41.9	36.1	36.9	37.8	38.6	39.5	40.3	41.2	42.0	42.9	43.8	44.6

DIAMETER (INCHES) : 42.0 - 46.4
 HEIGHT (FEET) : 110 - 130

DBH	TOTAL HEIGHT (FEET)										
	110	112	114	116	118	120	122	124	126	128	130
(IN)	----- TARIF NUMBER -----										
42.0	36.1	36.9	37.7	38.6	39.4	40.3	41.1	42.0	42.9	43.7	44.6
42.1	36.0	36.9	37.7	38.6	39.4	40.3	41.1	42.0	42.9	43.7	44.6
42.2	36.0	36.9	37.7	38.6	39.4	40.3	41.1	42.0	42.8	43.7	44.6
42.3	36.0	36.8	37.7	38.5	39.4	40.2	41.1	42.0	42.8	43.7	44.6
42.4	36.0	36.8	37.7	38.5	39.4	40.2	41.1	41.9	42.8	43.7	44.5
42.5	36.0	36.8	37.7	38.5	39.3	40.2	41.1	41.9	42.8	43.6	44.5
42.6	36.0	36.8	37.6	38.5	39.3	40.2	41.0	41.9	42.8	43.6	44.5
42.7	35.9	36.8	37.6	38.5	39.3	40.2	41.0	41.9	42.7	43.6	44.5
42.8	35.9	36.8	37.6	38.4	39.3	40.1	41.0	41.9	42.7	43.6	44.4
42.9	35.9	36.7	37.6	38.4	39.3	40.1	41.0	41.8	42.7	43.6	44.4
43.0	35.9	36.7	37.6	38.4	39.3	40.1	41.0	41.8	42.7	43.5	44.4
43.1	35.9	36.7	37.5	38.4	39.2	40.1	40.9	41.8	42.7	43.5	44.4
43.2	35.9	36.7	37.5	38.4	39.2	40.1	40.9	41.8	42.6	43.5	44.4
43.3	35.8	36.7	37.5	38.4	39.2	40.0	40.9	41.8	42.6	43.5	44.3
43.4	35.8	36.7	37.5	38.3	39.2	40.0	40.9	41.7	42.6	43.5	44.3
43.5	35.8	36.6	37.5	38.3	39.2	40.0	40.9	41.7	42.6	43.4	44.3
43.6	35.8	36.6	37.5	38.3	39.1	40.0	40.8	41.7	42.6	43.4	44.3
43.7	35.8	36.6	37.4	38.3	39.1	40.0	40.8	41.7	42.5	43.4	44.3
43.8	35.8	36.6	37.4	38.3	39.1	40.0	40.8	41.7	42.5	43.4	44.2
43.9	35.7	36.6	37.4	38.2	39.1	39.9	40.8	41.6	42.5	43.4	44.2
44.0	35.7	36.6	37.4	38.2	39.1	39.9	40.8	41.6	42.5	43.3	44.2
44.1	35.7	36.5	37.4	38.2	39.1	39.9	40.7	41.6	42.5	43.3	44.2
44.2	35.7	36.5	37.4	38.2	39.0	39.9	40.7	41.6	42.4	43.3	44.2
44.3	35.7	36.5	37.3	38.2	39.0	39.9	40.7	41.6	42.4	43.3	44.1
44.4	35.7	36.5	37.3	38.2	39.0	39.8	40.7	41.5	42.4	43.3	44.1
44.5	35.6	36.5	37.3	38.1	39.0	39.8	40.7	41.5	42.4	43.2	44.1
44.6	35.6	36.5	37.3	38.1	39.0	39.8	40.7	41.5	42.4	43.2	44.1
44.7	35.6	36.4	37.3	38.1	38.9	39.8	40.6	41.5	42.3	43.2	44.1
44.8	35.6	36.4	37.3	38.1	38.9	39.8	40.6	41.5	42.3	43.2	44.0
44.9	35.6	36.4	37.2	38.1	38.9	39.8	40.6	41.4	42.3	43.2	44.0
45.0	35.6	36.4	37.2	38.1	38.9	39.7	40.6	41.4	42.3	43.1	44.0
45.1	35.5	36.4	37.2	38.0	38.9	39.7	40.6	41.4	42.3	43.1	44.0
45.2	35.5	36.4	37.2	38.0	38.9	39.7	40.5	41.4	42.2	43.1	44.0
45.3	35.5	36.3	37.2	38.0	38.8	39.7	40.5	41.4	42.2	43.1	43.9
45.4	35.5	36.3	37.2	38.0	38.8	39.7	40.5	41.4	42.2	43.1	43.9
45.5	35.5	36.3	37.1	38.0	38.8	39.6	40.5	41.3	42.2	43.0	43.9
45.6	35.5	36.3	37.1	38.0	38.8	39.6	40.5	41.3	42.2	43.0	43.9
45.7	35.5	36.3	37.1	37.9	38.8	39.6	40.5	41.3	42.2	43.0	43.9
45.8	35.4	36.3	37.1	37.9	38.8	39.6	40.4	41.3	42.1	43.0	43.8
45.9	35.4	36.2	37.1	37.9	38.7	39.6	40.4	41.3	42.1	43.0	43.8
46.0	35.4	36.2	37.1	37.9	38.7	39.6	40.4	41.2	42.1	43.0	43.8
46.1	35.4	36.2	37.0	37.9	38.7	39.5	40.4	41.2	42.1	42.9	43.8
46.2	35.4	36.2	37.0	37.9	38.7	39.5	40.4	41.2	42.1	42.9	43.8
46.3	35.4	36.2	37.0	37.8	38.7	39.5	40.3	41.2	42.0	42.9	43.8
46.4	35.3	36.2	37.0	37.8	38.7	39.5	40.3	41.2	42.0	42.9	43.7

38 ACCESS TABLES

DIAMETER (INCHES) : 46.5 - 50.0
 HEIGHT (FEET) : 110 - 130

DBH	TOTAL HEIGHT (FEET)											
	110	112	114	116	118	120	122	124	126	128	130	
(IN)	----- TARIF NUMBER -----											
46.5	35.3	36.2	37.0	37.8	38.6	39.5	40.3	41.2	42.0	42.9	43.7	
46.6	35.3	36.1	37.0	37.8	38.6	39.5	40.3	41.1	42.0	42.8	43.7	
46.7	35.3	36.1	36.9	37.8	38.6	39.4	40.3	41.1	42.0	42.8	43.7	
46.8	35.3	36.1	36.9	37.8	38.6	39.4	40.3	41.1	42.0	42.8	43.7	
46.9	35.3	36.1	36.9	37.7	38.6	39.4	40.2	41.1	41.9	42.8	43.6	
47.0	35.3	36.1	36.9	37.7	38.6	39.4	40.2	41.1	41.9	42.8	43.6	
47.1	35.2	36.1	36.9	37.7	38.5	39.4	40.2	41.1	41.9	42.7	43.6	
47.2	35.2	36.0	36.9	37.7	38.5	39.4	40.2	41.0	41.9	42.7	43.6	
47.3	35.2	36.0	36.9	37.7	38.5	39.3	40.2	41.0	41.9	42.7	43.6	
47.4	35.2	36.0	36.8	37.7	38.5	39.3	40.2	41.0	41.8	42.7	43.5	
47.5	35.2	36.0	36.8	37.6	38.5	39.3	40.1	41.0	41.8	42.7	43.5	
47.6	35.2	36.0	36.8	37.6	38.5	39.3	40.1	41.0	41.8	42.7	43.5	
47.7	35.2	36.0	36.8	37.6	38.4	39.3	40.1	41.0	41.8	42.6	43.5	
47.8	35.1	36.0	36.8	37.6	38.4	39.3	40.1	40.9	41.8	42.6	43.5	
47.9	35.1	35.9	36.8	37.6	38.4	39.2	40.1	40.9	41.8	42.6	43.5	
48.0	35.1	35.9	36.7	37.6	38.4	39.2	40.1	40.9	41.7	42.6	43.4	
48.1	35.1	35.9	36.7	37.6	38.4	39.2	40.0	40.9	41.7	42.6	43.4	
48.2	35.1	35.9	36.7	37.5	38.4	39.2	40.0	40.9	41.7	42.6	43.4	
48.3	35.1	35.9	36.7	37.5	38.3	39.2	40.0	40.8	41.7	42.5	43.4	
48.4	35.0	35.9	36.7	37.5	38.3	39.2	40.0	40.8	41.7	42.5	43.4	
48.5	35.0	35.8	36.7	37.5	38.3	39.1	40.0	40.8	41.7	42.5	43.3	
48.6	35.0	35.8	36.7	37.5	38.3	39.1	40.0	40.8	41.6	42.5	43.3	
48.7	35.0	35.8	36.6	37.5	38.3	39.1	39.9	40.8	41.6	42.5	43.3	
48.8	35.0	35.8	36.6	37.4	38.3	39.1	39.9	40.8	41.6	42.4	43.3	
48.9	35.0	35.8	36.6	37.4	38.3	39.1	39.9	40.7	41.6	42.4	43.3	
49.0	35.0	35.8	36.6	37.4	38.2	39.1	39.9	40.7	41.6	42.4	43.3	
49.1	35.0	35.8	36.6	37.4	38.2	39.0	39.9	40.7	41.6	42.4	43.2	
49.2	34.9	35.7	36.6	37.4	38.2	39.0	39.9	40.7	41.5	42.4	43.2	
49.3	34.9	35.7	36.5	37.4	38.2	39.0	39.8	40.7	41.5	42.4	43.2	
49.4	34.9	35.7	36.5	37.4	38.2	39.0	39.8	40.7	41.5	42.3	43.2	
49.5	34.9	35.7	36.5	37.3	38.2	39.0	39.8	40.7	41.5	42.3	43.2	
49.6	34.9	35.7	36.5	37.3	38.1	39.0	39.8	40.6	41.5	42.3	43.2	
49.7	34.9	35.7	36.5	37.3	38.1	39.0	39.8	40.6	41.5	42.3	43.1	
49.8	34.9	35.7	36.5	37.3	38.1	38.9	39.8	40.6	41.4	42.3	43.1	
49.9	34.8	35.6	36.5	37.3	38.1	38.9	39.8	40.6	41.4	42.3	43.1	
50.0	34.8	35.6	36.4	37.3	38.1	38.9	39.7	40.6	41.4	42.2	43.1	

32.908 CP SECONDS EXECUTION TIME.

VOLUME TABLES BASED ON 98 TREES

ESTIMATED CUBIC-FOOT VOLUME, INCLUDING TOP AND STUMP

DBH (IN)	HEIGHT (FEET)										
	30	40	50	60	70	80	90	100	110	120	130
6	2.2	3.1	4.2	5.3	6.4	7.6	8.8	10.1	11.4	12.7	14.1
8	3.7	5.3	7.0	8.9	10.8	12.8	14.9	17.0	19.2	21.5	23.8
10	5.5	7.9	10.6	13.3	16.2	19.2	22.3	25.5	28.8	32.2	35.7
12	7.7	11.1	14.7	18.5	22.6	26.7	31.1	35.5	40.1	44.8	49.6
14	10.1	14.6	19.4	24.5	29.8	35.4	41.1	47.0	53.1	59.3	65.7
16	12.9	18.6	24.8	31.2	38.0	45.1	52.4	59.9	67.6	75.5	83.7
18	16.0	23.1	30.6	38.7	47.1	55.8	64.8	74.1	83.7	93.5	103.6
20	19.3	27.9	37.1	46.8	57.0	67.5	78.5	89.8	101.3	113.2	125.4
22	23.0	33.2	44.1	55.6	67.7	80.3	93.3	106.7	120.5	134.6	149.1
24	26.9	38.9	51.6	65.2	79.3	94.0	109.2	124.9	141.1	157.6	174.6
26	31.1	44.9	59.7	75.3	91.7	108.7	126.3	144.5	163.1	182.3	201.8
28	35.6	51.4	68.3	86.2	104.9	124.3	144.5	165.3	186.6	208.5	230.9
30	40.4	58.3	77.4	97.7	118.9	140.9	163.8	187.3	211.5	236.3	261.7
32	45.4	65.5	87.0	109.8	133.6	158.4	184.1	210.5	237.7	265.6	294.1
34	50.7	73.1	97.2	122.6	149.2	176.8	205.5	235.0	265.4	296.5	328.3
36	56.2	81.1	107.8	136.0	165.5	196.2	227.9	260.7	294.4	328.9	364.2
38	62.0	89.4	118.9	150.0	182.5	216.4	251.4	287.6	324.7	362.8	401.8
40	68.0	98.2	130.5	164.6	200.3	237.5	275.9	315.6	356.4	398.2	440.9
42	74.3	107.3	142.5	179.8	218.9	259.5	301.5	344.8	389.3	435.0	481.7
44	80.9	116.7	155.1	195.7	238.1	282.3	328.0	375.2	423.6	473.3	524.1
46	87.7	126.5	168.1	212.1	258.1	306.0	355.6	406.7	459.2	513.1	568.2
48	94.7	136.7	181.6	229.1	278.8	330.6	384.1	439.3	496.1	554.2	613.8
50	102.0	147.2	195.6	246.7	300.3	356.0	413.6	473.1	534.2	596.8	660.9

CVTS = 0.001106485 * (DBH ** 1.8140497) * (HT ** 1.2744923)

ESTIMATED CUBIC-FOOT VOLUME TO A 4-INCH TOP

DBH (IN)	HEIGHT (FEET)										
	30	40	50	60	70	80	90	100	110	120	130
6	1.5	2.2	2.9	3.7	4.5	5.4	6.2	7.1	8.0	9.0	9.9
8	3.2	4.6	6.1	7.7	9.4	11.1	12.9	14.8	16.7	18.7	20.7
10	5.1	7.3	9.8	12.3	15.0	17.8	20.6	23.6	26.7	29.8	33.0
12	7.3	10.5	13.9	17.6	21.4	25.3	29.4	33.7	38.0	42.5	47.0
14	9.7	14.0	18.6	23.5	28.5	33.8	39.3	45.0	50.8	56.7	62.8
16	12.4	17.9	23.8	30.0	36.5	43.3	50.3	57.6	65.0	72.6	80.4
18	15.4	22.2	29.5	37.3	45.4	53.8	62.5	71.5	80.7	90.1	99.8
20	18.7	26.9	35.8	45.2	55.0	65.2	75.7	86.6	97.8	109.3	121.0
22	22.2	32.1	42.6	53.7	65.4	77.5	90.1	103.0	116.3	130.0	144.0
24	26.0	37.5	49.9	63.0	76.6	90.8	105.5	120.7	136.3	152.3	168.7
26	30.1	43.4	57.7	72.8	88.6	105.1	122.1	139.6	157.7	176.2	195.1
28	34.4	49.7	66.0	83.3	101.4	120.2	139.7	159.8	180.4	201.5	223.2
30	39.0	56.3	74.9	94.4	114.9	136.3	158.3	181.1	204.5	228.5	253.0
32	43.9	63.3	84.2	106.2	129.2	153.2	178.0	203.6	229.9	256.9	284.5
34	49.0	70.7	94.0	118.5	144.3	171.0	198.7	227.3	256.7	286.8	317.6
36	54.4	78.4	104.2	131.5	160.1	189.7	220.5	252.2	284.7	318.1	352.3
38	60.0	86.5	115.0	145.1	176.6	209.3	243.2	278.2	314.1	350.9	388.6
40	65.8	95.0	126.2	159.2	193.8	229.7	267.0	305.3	344.8	385.2	426.6
42	71.9	103.8	137.9	174.0	211.7	251.0	291.7	333.6	376.7	420.9	466.1
44	78.3	112.9	150.1	189.3	230.4	273.1	317.4	363.0	409.9	458.0	507.1
46	84.8	122.4	162.7	205.2	249.8	296.1	344.1	393.5	444.3	496.4	549.7
48	91.6	132.2	175.7	221.7	269.8	319.9	371.7	425.1	480.0	536.3	593.9
50	98.7	142.4	189.2	238.7	290.6	344.5	400.3	457.8	516.9	577.5	639.6

DEVELOPED FROM AN EQUATION FOR CUBIC-FOOT VOLUME, INCLUDING TOP AND STUMP, USING THE WASHINGTON STATE DNR TREE-VOLUME TARIFF SYSTEM (BRACKETT 1973).

ESTIMATED CUBIC-FOOT VOLUME TO A 6-INCH TOP

DBH (IN)	HEIGHT (FEET)										
	30	40	50	60	70	80	90	100	110	120	130
8	1.9	2.8	3.7	4.7	5.7	6.8	7.9	9.0	10.2	11.4	12.6
10	4.3	6.2	8.3	10.4	12.7	15.0	17.5	20.0	22.6	25.2	27.9
12	6.8	9.8	13.0	16.4	20.0	23.7	27.6	31.5	35.6	39.8	44.0
14	9.4	13.6	18.1	22.8	27.7	32.9	38.2	43.7	49.3	55.1	61.0
16	12.2	17.6	23.4	29.6	36.0	42.7	49.6	56.7	64.0	71.5	79.2
18	15.2	22.0	29.2	36.9	44.9	53.2	61.8	70.7	79.9	89.2	98.8
20	18.5	26.7	35.5	44.8	54.5	64.6	75.1	85.9	97.0	108.4	120.0
22	22.0	31.8	42.3	53.3	64.9	77.0	89.4	102.3	115.5	129.0	142.9
24	25.8	37.3	49.5	62.5	76.1	90.2	104.8	119.8	135.3	151.2	167.4
26	29.9	43.1	57.3	72.3	88.0	104.3	121.2	138.6	156.5	174.9	193.7
28	34.2	49.3	65.6	82.7	100.7	119.4	138.7	158.6	179.1	200.1	221.6
30	38.8	55.9	74.3	93.8	114.1	135.3	157.2	179.8	203.0	226.9	251.2
32	43.6	62.9	83.6	105.4	128.3	152.1	176.8	202.2	228.3	255.1	282.5
34	48.7	70.2	93.3	117.7	143.3	169.8	197.4	225.7	254.9	284.8	315.3
36	54.0	77.9	103.5	130.6	158.9	188.4	218.9	250.4	282.7	315.9	349.8
38	59.5	85.9	114.2	144.1	175.3	207.9	241.5	276.2	311.9	348.5	385.9
40	65.4	94.3	125.3	158.1	192.4	228.1	265.1	303.2	342.3	382.5	423.6
42	71.4	103.0	136.9	172.8	210.3	249.3	289.6	331.3	374.1	417.9	462.8
44	77.7	112.1	149.0	188.0	228.8	271.2	315.2	360.5	407.0	454.7	503.6
46	84.2	121.5	161.5	203.8	248.0	294.0	341.6	390.7	441.2	493.0	545.9
48	91.0	131.3	174.5	220.1	267.9	317.6	369.1	422.1	476.6	532.5	589.7
50	98.0	141.4	187.9	237.1	288.5	342.1	397.5	454.6	513.3	573.5	635.1

DEVELOPED FROM AN EQUATION FOR CUBIC-FOOT VOLUME, INCLUDING TOP AND STUMP, USING THE WASHINGTON STATE DNR TREE-VOLUME TARIFF SYSTEM (BRACKETT 1973).

ESTIMATED CUBIC-FOOT VOLUME TO AN 8-INCH TOP

DBH (IN)	HEIGHT (FEET)										
	30	40	50	60	70	80	90	100	110	120	130
10	2.2	3.2	4.2	5.3	6.5	7.7	8.9	10.2	11.5	12.8	14.2
12	5.4	7.9	10.4	13.2	16.0	19.0	22.1	25.2	28.5	31.8	35.3
14	8.6	12.4	16.4	20.7	25.2	29.9	34.8	39.8	44.9	50.2	55.6
16	11.7	16.9	22.4	28.3	34.4	40.8	47.4	54.2	61.2	68.4	75.7
18	14.9	21.5	28.5	36.0	43.8	51.9	60.3	69.0	77.9	87.0	96.4
20	18.2	26.3	34.9	44.1	53.6	63.6	73.9	84.5	95.4	106.6	118.1
22	21.8	31.4	41.7	52.7	64.1	76.0	88.3	101.0	114.0	127.4	141.1
24	25.5	36.9	49.0	61.8	75.2	89.2	103.6	118.5	133.8	149.5	165.6
26	29.6	42.7	56.7	71.5	87.1	103.2	119.9	137.2	154.9	173.1	191.6
28	33.8	48.8	64.9	81.9	99.7	118.1	137.3	157.0	177.3	198.1	219.3
30	38.4	55.4	73.6	92.8	113.0	133.9	155.6	178.0	201.0	224.6	248.7
32	43.1	62.3	82.7	104.4	127.0	150.6	175.0	200.1	226.0	252.5	279.6
34	48.2	69.5	92.4	116.5	141.8	168.1	195.4	223.4	252.3	281.9	312.2
36	53.4	77.1	102.5	129.3	157.3	186.5	216.7	247.9	279.9	312.7	346.3
38	58.9	85.1	113.0	142.6	173.6	205.8	239.1	273.4	308.8	345.0	382.0
40	64.7	93.4	124.1	156.5	190.5	225.8	262.4	300.1	338.9	378.6	419.3
42	70.7	102.0	135.6	171.0	208.1	246.8	286.7	327.9	370.3	413.7	458.1
44	76.9	111.0	147.5	186.1	226.5	268.5	312.0	356.8	402.9	450.2	498.5
46	83.4	120.3	159.9	201.7	245.5	291.1	338.2	386.8	436.8	488.0	540.4
48	90.1	130.0	172.7	217.9	265.2	314.4	365.4	417.9	471.8	527.2	583.8
50	97.0	140.0	186.0	234.7	285.6	338.6	393.5	450.0	508.1	567.7	628.7

DEVELOPED FROM AN EQUATION FOR CUBIC-FOOT VOLUME, INCLUDING TOP AND STUMP, USING THE WASHINGTON STATE DNR TREE-VOLUME TARIFF SYSTEM (BRACKETT 1973).

ESTIMATED SCRIBNER BOARD-FOOT VOLUME TO A 6-INCH TOP

DBH (IN)	HEIGHT (FEET)										
	30	40	50	60	70	80	90	100	110	120	130
8	5.1	8.3	12.0	16.2	20.9	25.8	31.0	36.2	41.5	46.7	51.7
10	12.4	20.3	29.6	40.3	52.0	64.6	77.9	91.6	105.6	119.5	133.2
12	20.7	33.9	49.7	67.8	87.8	109.4	132.4	156.3	180.9	205.6	230.3
14	29.6	48.7	71.6	97.9	127.0	158.7	192.5	228.0	264.5	301.7	339.0
16	39.2	64.7	95.3	130.5	169.8	212.6	258.4	306.6	356.5	407.6	459.1
18	49.5	82.0	121.1	166.1	216.4	271.4	330.4	392.7	457.5	524.0	591.4
20	60.7	100.7	148.9	204.6	267.0	335.3	408.8	486.5	567.7	651.2	736.3
22	72.6	120.8	179.0	246.2	321.6	404.5	493.7	588.3	687.3	789.5	893.8
24	85.4	142.3	211.1	290.8	380.3	478.8	585.0	697.9	816.2	938.7	1064.0
26	99.0	165.2	245.3	338.3	442.9	558.1	682.6	815.1	954.3	1098.6	1246.6
28	113.3	189.3	281.5	388.6	509.3	642.3	786.3	939.8	1101.2	1268.9	1441.2
30	128.3	214.7	319.6	441.6	579.3	731.2	895.8	1071.5	1256.6	1449.1	1647.3
32	144.0	241.3	359.5	497.2	652.7	824.5	1010.9	1210.1	1420.1	1638.9	1864.4
34	160.3	268.9	401.1	555.2	729.5	922.1	1131.3	1355.1	1591.3	1837.8	2092.2
36	177.2	297.7	444.4	615.5	809.3	1023.7	1256.7	1506.2	1770.0	2045.4	2330.0
38	194.7	327.3	489.1	678.0	892.0	1129.0	1386.8	1663.2	1955.5	2261.2	2577.3
40	212.7	357.9	535.3	742.5	977.4	1237.8	1521.4	1825.5	2147.6	2484.6	2833.6
42	231.1	389.3	582.7	808.8	1065.3	1349.9	1660.0	1992.9	2345.7	2715.3	3098.3
44	250.0	421.5	631.3	876.8	1155.6	1465.1	1802.5	2165.0	2549.5	2952.6	3370.8
46	269.3	454.4	681.0	946.4	1248.0	1583.0	1948.5	2341.4	2758.5	3196.1	3650.6
48	288.9	487.9	731.7	1017.4	1342.3	1703.4	2097.7	2521.8	2972.3	3445.3	3936.9
50	308.8	521.9	783.2	1089.7	1438.3	1826.1	2249.7	2705.7	3190.3	3699.6	4229.3

DEVELOPED FROM AN EQUATION FOR CUBIC-FOOT VOLUME, INCLUDING TOP AND STUMP, USING THE WASHINGTON STATE DNR TREE-VOLUME TARIFF SYSTEM (BRACKETT 1973) (CHAMBERS AND FOLTZ 1979).

44 VOLUME TABLES

**ESTIMATED SCRIBNER BOARD-FOOT VOLUME TO AN 8-INCH TOP,
IN 16-FOOT LOGS**

DBH (IN)	HEIGHT (FEET)										
	30	40	50	60	70	80	90	100	110	120	130
10	7.3	11.9	17.4	23.6	30.5	37.9	45.7	53.7	61.9	70.1	78.1
12	18.5	30.4	44.5	60.7	78.6	98.0	118.5	140.0	162.0	184.1	206.2
14	28.6	47.2	69.3	94.7	123.0	153.6	186.4	220.6	256.0	292.0	328.1
16	38.6	63.7	93.9	128.6	167.2	209.4	254.5	301.9	351.1	401.4	452.1
18	49.0	81.1	119.7	164.2	214.0	268.3	326.7	388.3	452.3	518.1	584.8
20	60.0	99.7	147.4	202.5	264.2	331.9	404.6	481.5	561.8	644.5	728.7
22	71.9	119.6	177.2	243.7	318.4	400.4	488.7	582.4	680.4	781.6	884.8
24	84.6	140.9	209.0	287.8	376.5	474.0	579.1	690.9	808.1	929.3	1053.4
26	98.0	163.5	242.9	334.9	438.5	552.5	675.8	807.0	944.8	1087.7	1234.1
28	112.1	187.4	278.7	384.7	504.2	635.9	778.4	930.4	1090.2	1256.2	1426.7
30	127.0	212.6	316.4	437.2	573.5	723.9	886.9	1060.8	1244.0	1434.6	1630.8
32	142.5	238.9	355.9	492.2	646.2	816.3	1000.8	1198.0	1405.9	1622.5	1845.8
34	158.7	266.2	397.1	549.7	722.2	912.9	1120.0	1341.5	1575.4	1819.5	2071.3
36	175.5	294.7	439.9	609.4	801.2	1013.4	1244.1	1491.2	1752.3	2025.0	2306.7
38	192.7	324.1	484.2	671.2	883.1	1117.7	1373.0	1646.5	1935.9	2238.6	2551.6
40	210.5	354.3	529.9	735.0	967.6	1225.4	1506.2	1807.3	2126.1	2459.8	2805.3
42	228.8	385.5	576.9	800.7	1054.7	1336.4	1643.4	1973.0	2322.2	2688.1	3067.4
44	247.5	417.3	625.0	868.1	1144.1	1450.4	1784.5	2143.4	2524.0	2923.1	3337.1
46	266.6	449.9	674.2	937.0	1235.5	1567.1	1929.0	2318.0	2730.9	3164.2	3614.1
48	286.0	483.0	724.4	1007.3	1328.9	1686.4	2076.7	2496.6	2942.5	3410.9	3897.5
50	305.7	516.7	775.4	1078.8	1423.9	1807.8	2227.2	2678.6	3158.4	3662.6	4187.0

DEVELOPED FROM AN EQUATION FOR CUBIC-FOOT VOLUME, INCLUDING TOP AND STUMP, USING THE WASHINGTON STATE DNR TREE-VOLUME TARIFF SYSTEM (BRACKETT 1973) (CHAMBERS AND FOLTZ 1979).

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BRITISH/METRIC CONVERSIONS

1 inch (in.) = 2.54 centimeter (cm)

1 foot (ft.) = 0.3048 meter (m)

1 cubic foot (cu.ft.) = 0.028 cubic meters (m³)

Bell, J.F., D.D. Marshall, and G.P. Johnson. 1981. TARIF ACCESS TABLES FOR MOUNTAIN HEMLOCK FROM AN EQUATION OF TOTAL STEM CUBIC-FOOT VOLUME. Forest Research Laboratory, Oregon State University, Corvallis. Research Bulletin 46 p.

Tarif access tables were developed for mountain hemlock [*Tsuga mertensiana* (Bong.) Carr.] on the Deschutes National Forest in the Central Oregon Cascade Mountains from an equation for cubic-foot volume including top and stump (CVTS). These tables provide access to the comprehensive tree-volume tarif system.

KEYWORDS: mountain hemlock, *Tsuga mertensiana*, tarif tables, CVTS, least squares regression

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