

**Maintenance Crew Chief's Guide
(FR – Foreman's Report)**

DAILY WORK REPORT

DOT-12

2019



**West Virginia Department of Transportation
Division of Highways**

ATTENTION

This guide is intended to assist a maintenance organization crew chief in the preparation of Form DOT-12 and makes reference to MAINTENANCE PERFORMANCE ACTIVITY CODES.

Form DOT-12 is utilized by other organizations using activity codes other than the maintenance activity codes. Although the process is similar, there are distinct differences. This guide does not fully cover the Form DOT-12 preparation process for those other organizations.

Crew Chief's Guide
DOT-12, Daily Work Report (FR – Foreman's Report)

<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
INTRODUCTION	4
<u>BASIC INFORMATION</u>	
Purposes of the DOT-12	5
Responsibilities of the Crew Chief	6
Structure of Organization Numbers	7-8
Reporting by Route Numbers	9
Function Classification	9
DOH Authorization / Account Numbers & Routine Maintenance	10-11
Maintenance Management Performance Standards	12-13
Unit of Measure Definitions	14-15
Common Errors Made on the DOT-12	16-20
<u>INSTRUCTIONS FOR COMPLETING THE DOT-12</u>	
Exhibit I Front Side – DOT-12	21-26
Exhibit II Reverse Side – DOT-12	27-29
<u>APPENDIX A – Measurement Conversion Tables</u>	30-41
Table 1 – Square Yards of Road Surface for Various Road Widths	
Table 2 – Tons of Aggregate Req'd. for Various Rates of Application	
Table 3 – Loose & Compacted Weights of Various Materials	
Table 4 – Cubic Yards of Material Req'd. per 100 LF for Various Depths	
Table 5 – Gals. of Asphalt Req'd. per Mile for Various Rates of Applications	
Table 6 – Lineal Feet Covered by 1000 Gallon Tank	
Table 7 – Conversion Factors – Length Measurements	
Table 8 – Conversion Factors – Area Measurements	
Table 9 – Conversion Factors – Volume Measurements	
Table 10 – Conversion Factors – Weights and Other Measurements	
Table 11 – Conversion Factors - Common Fractions to Decimal Numbers	
Table 12 – Conversion Factors - Inches to Decimals of a Foot	
Table 13 – Square Feet Chart	
Table 14 – Square Yards Chart	
Table 15 – Number of Board Feet per LF for Various Sizes of Lumber	

INTRODUCTION:

The Crew Chief responsibility for completing the DOT-12, Daily Work Report, is a very key position within our Division of Highways.

The DOT-12, Daily Work Report, is the **SOURCE** document of the Division of Highways and is the legal accountability of resources expended. The information that can be obtained from the DOT-12 is invaluable to the Division of Highways. Too much emphasis cannot be placed on your position as a Crew Chief to document the every day maintenance tasks of your crew as accurately as possible.

Because the Crew Chief performs many responsibilities, this guide was especially designed to be complete in giving you the information you need without an overwhelming amount of details. However, technical references will be given in case more information is required.

You, the Crew Chief, are a major part of the management cycle in that you **DIRECT** the maintenance operation through your completion of the DOT-12, Daily Work Report. In order to maintain a **GOOD** management system, **USABLE** information is needed and **ACCURATE** reporting is essential. The integrity of our entire maintenance system is in your hands. With the information given in this guide, you can obtain the knowledge necessary to report the available information accurately. It is easy to complete the DOT-12 in a correct, complete manner once you have the knowledge.

REMEMBER, A JOB WORTH DOING IS WORTH DOING RIGHT!

PURPOSES OF THE DOT-12, DAILY WORK REPORT

- The DOT-12 is the **SOURCE** document of the Division of Highways. It is prepared in **original only** and provides information on Labor, Equipment and Material used in maintaining our highways. The DOT-12 is the legal accountability document of work performed and resources expended.
- The DOT-12 is the means by which each employee's time is reported/recorded so wages can be paid.
- The DOT-12 supplies the Office Assistants with the information to properly distribute the charges into the REMIS system.
- Data reported on the DOT-12 affords the Division of Highways the ability to categorically account for expenditures.
- The DOT-12 provides work measurement and control through the Maintenance Management System simply by recording the following data:
 - WHAT WAS DONE (Performance Standards Activity)
 - WHERE IT WAS DONE (Organization, Route No., Bridge No., Mile Post)
 - HOW MUCH WAS DONE (Units of Accomplishment)
 - RESOURCES USED TO COMPLETE WORK (Employee Hours, Equipment Hours and Materials used)
- Data from the DOT-12 provides historical information. The historical information is very useful in making decisions concerning future maintenance and/or improvement plans.

RESPONSIBILITIES OF THE CREW CHIEF COMPLETING THE DOT-12

- To record all the daily information **AS ACCURATELY** as possible. It is the Crew Chief's responsibility to obtain the proper charging information needed for the DOT-12.
- To record the maintenance task to the correct Performance Standard Activity. This will require the Crew Chief to have good knowledge and application of the Maintenance Performance Standards. A hard copy of the Performance Standards should be in the Crew Chief's possession at all times for any necessary referrals.
- Write legibly. This is of utmost importance, so the Office Assistant enters the information correctly and does not misread the information due to poor handwriting.
- MAKE "GENERAL COMMENTS"** on the reverse side of the DOT-12 that will clarify questionable information concerning the job. The remarks on the back of the DOT-12 may prove beneficial for the Division if litigation should occur later.
- BE SURE** to note any employee injury that occurs on the job site to document possible Worker's Compensation Claims that may arise.

The following are some examples of commonly used remarks noted on the reverse side of the DOT-12:

- Wreck on WV 16 at mile post 67.3. DOH Crew signed and flagged until 6:45 PM.
- John Alvin Doe dented ED# 213-000 hitting a deer while enroute to perform Activity 382.
- Calling for snow. Sent the night crew home at 10:30 AM.
- Reported rock on shoulder of WV 18 at mile post 23. Moved the rock into ditch to be removed later.
- Bobby John Doe cut hand while performing Activity 304. First Aid was administered before transporting him to the hospital.
- Free stone supplied by Coal and Drilling Company for Activity 261, CO 32.
- Mechanical breakdown on ED# 412-000 delayed job 1 hour.

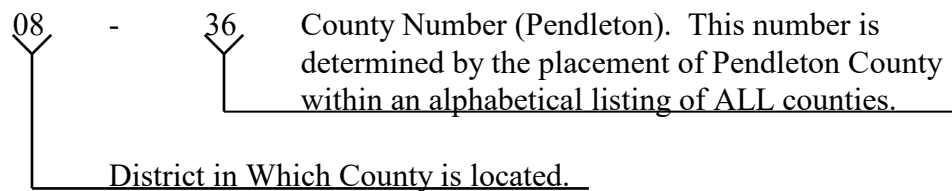
REVIEW THE DOT-12 FOR ACCURACY BEFORE SIGNING

STRUCTURE OF ORGANIZATION NUMBERS

An organization number within the Division of Highways is a number assigned to a distinguishable section or spending unit such as a County, Interstate-APD, Sign Shop, District, etc.

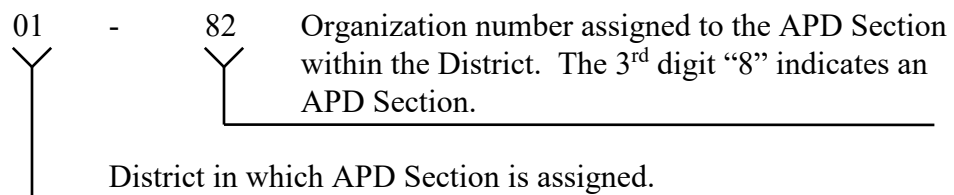
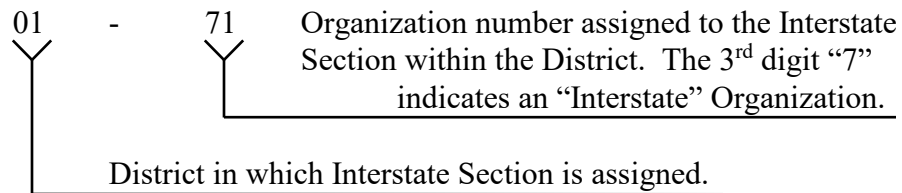
The Crew Chief uses Organization Numbers to complete the DOT-12 in two different places, “HOME ORG” and “REC (Receiving) ORG”. As a rule, you will only be concerned with your HOME Organization Number (the one to which you are permanently assigned); however, occasions can and likely will arise where another organization is charged for the work performed by your organization. The following will give you a better understanding for the basis of our Organization Numbering System.

The following is a definition of a County Organization Number.



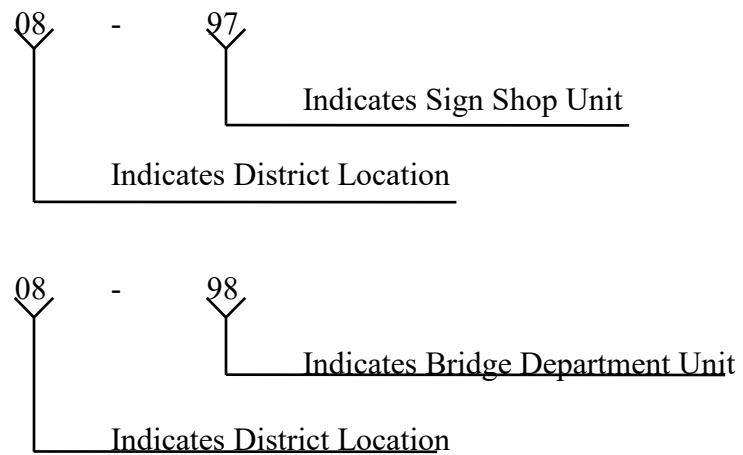
The same method applies for all counties. Again, the first two numbers indicates the District location and the second two numbers indicates the alphabetical placement of the county.

Interstate and Appalachian Organizations Numbers are defined as follows:



“Expressway Other” sections are identified with the 3rd digit “6” using the same method shown above.

Sign Shop and Bridge Department Organization Numbers are defined as follows:



For further information and a listing of all DOH organizations/numbers, refer to the Administrative Operating Procedures, DOT (Gray) Volume II, Chapter 7.

REPORTING BY ROUTE NUMBERS

The DOT-12 contains a space for entering route numbers. Route numbers, as well as available mile posts, are to be reported whenever possible. Compiling information by route number significantly refines our abilities to manage highway maintenance. The organizational managers will find route number reporting can be very beneficial in handling Citizen's Requests for Assistance.

Realistically there will be times when it is not feasible to report by route number such as in a busy snow fighting operation.

FUNCTION CLASSIFICATION

There are six (6) types of functional classifications of routes in the Division of Highways. They are defined as follows:

EXPRESSWAY (X) – Serves major Interstate and Intrastate travel, including Federal Interstate Routes.

TRUNKLINE (T) – Serves major city to city travel.

FEEDER (F) – Serves community to community travel and/or collects and feeds traffic to the higher systems.

STATE LOCAL SERVICE (S) – Localized arterial and spur roads, which provide land access and social and economic benefits to abutting properties.

HOME ACCESS ROAD PROGRAM (HARP) (D) – Local roads or bridges taken into the state system under the Orphan Road program for maintenance only.

STATE PARK & FOREST ROADS (P/F) – Provide access within these areas for recreational and/or commercial (i. e., logging, mining, etc.) purposes. The responsibility for the construction and maintenance of roads on publicly-owned lands within State parks and forests, and public hunting and fishing areas, was transferred from the Department of Natural Resources to the Division of Highways by legislative action in 1972.

The account number is directly related to the above-described functional classification and is a part of the authorization number.

DOH AUTHORIZATION/ ACCOUNT NUMBERS - ROUTINE MAINTENANCE

The Authorization and Account Numbers for Routine Maintenance have a direct relationship to the previously described Functional Classifications.

Routine Maintenance Authorization Numbers are composed of:

2 Prefix Letters, 4 Numbers, 1 Suffix Letter.

Authorization Numbers are always 7 digits. An Example of a Routine Maintenance Authorization Number is: **MR4451S**

The two prefix, or leading letters, of the Authorization Number for Routine Maintenance (*all Functional Classes*) is determined by the type of maintenance.

TYPE OF MAINTENANCE

Routine Maintenance	MR
Snow Removal / Ice Control	MS

In the example **MR4451S**, the type of Maintenance is Routine.

The 4 numbers in the middle portion of the Authorization Number are actually the **Account Number**. The Account Numbers for Routine Maintenance have a very direct relationship to the Functional Classifications. The following Table illustrates this relationship for the first 2 digits and the last 2 digits of the Account Number.

TABLE SHOWING RELATIONSHIP OF ACCOUNT NUMBERS TO FUNCTIONAL CLASSIFICATIONS

<u>FUNCTIONAL CLASSIFICATION</u>	<u>ACCOUNT NUMBER</u>		
	First 2 Digits	Last 2 Digits	
		Routine	SRIC
Organization Overhead	40	18	17
Expressway	41	51	71
Trunkline	42	51	71
Feeder	43	51	71
State Local Service	44	51	71
Home Access Road Program (HARP)	44	53	73
Parks / Forests	44	54	74

In the example **MR4451S**, the Account Number is 4451, or State Local Service Routine Maintenance.

Finally, the suffix or last letter of the Authorization Number, (Routine Maintenance) signifies further which Functional Classification is being designated:

Overhead	H
Expressway	X
Trunkline	T
Feeder	F
State Local Service	S
HARP	D
Parks / Forests	P

In the example **MR4451S**, the type of route is State Local Service.

PLEASE NOTE: **SRIC Overhead (Activity 345-SRIC Support Operations) will be charged to Authorizations MS4017H.**

Authorization Numbers will vary when performing work outside of the normal duties such as work on reimbursable authorizations, declared emergencies, etc. When performing this type of work, the authorization numbers will likely be different depending upon the operation. The Crew Chief is responsible for obtaining the correct authorization number to use.

MAINTENANCE MANAGEMENT SYSTEM PERFORMANCE STANDARDS

The Maintenance Performance Standards Manual is a collection of activities that define maintenance tasks. The Crew Chief must have complete knowledge and application of all the activities within the Performance Standards to determine the correct activity to use for each individual maintenance task.

Each activity found in the Maintenance Performance Standards is a consolidation of the following items:

1. THE PURPOSE AND OBJECTIVE OF THE TASK/ACTIVITY.
2. THE PROPER TIME AND THE FREQUENCY FOR PERFORMING THE MAINTENANCE ACTIVITY.
3. IDEAL CREW SIZE, TYPES OF EQUIPMENT AND TYPES OF MATERIAL REQUIRED.
4. DAILY ACCOMPLISHMENTS THAT SHOULD BE ACHIEVED UNDER IDEAL CONDITIONS.
5. WORK METHODS SETTING FORTH THE MOST ECONOMICAL AND SYSTEMATIC PROCEDURES FOR PERFORMING THE ACTIVITY.
6. TECHNICAL REFERENCES AND PERTINENT NOTES RELATING TO EACH ACTIVITY.

The collection of activities within the Maintenance Performance Standards is grouped into the following categories:

	<u>DESCRIPTION NUMBERS</u>	<u>ACTIVITY</u>
I.	BITUMINOUS PAVEMENT MAINTENANCE	201 - 209
II.	PCC PAVEMENT MAINTENANCE	241 - 246
III.	UNPAVED SURFACE MAINTENANCE	260 - 263
IV.	DRAINAGE MAINTENANCE	281 - 288
V.	ROADSIDE MAINTENANCE	301 - 317
VI.	SNOW REMOVAL AND ICE CONTROL	341 - 345
VII.	TRAFFIC SERVICES	361 - 369
VIII.	BRIDGE	381 - 391
IX.	OTHER MAINTENANCE	401 – 411
X.	SERVICE FUNCTION	801 - 816

Listed below are the three items found on the DOT-12 that are directly related to the Performance Standards.

----- Activity Code Number

----- Units Accomplished

----- Units of Measure

ACTIVITY CODE NUMBER - It is very important to report the maintenance task being performed to the proper activity. *It is essential for the Crew Chief to become completely familiar with the Maintenance Performance Standards Manual and its application.*

UNIT ACCOMPLISHED - The ‘units of accomplishment’ is the total number of “units of measure” accomplished for the day the particular performance standard activity is reported.

The Crew Chief should report the correct measurement for each activity performed. To do this effectively, the Crew Chief should become familiar with the following information given on the unit of measure for each activity.

UNIT OF MEASURE - The unit of measure is the correct unit for reporting activities. Examples are: Ton, Employee Hour, Feet, Mile and so forth.

The following table is a list of all the various “units of measures” found in the Performance Standards. On the following pages there is a definition for each.

Ton ----- (TN)	Acre ----- (AC)
Gallons ----- (GL)	Bags ----- (BG)
Feet ----- (FT)	Each ----- (EA)
Mile----- (MI)	Employee Hours----- (EH)
Cubic Yard ----- (CY)	Dollars ----- (DL)
Shoulder Mile----- (SM)	
Square Feet----- (SF)	

These definitions should not replace reading each Performance Standard carefully. Many helpful directions are contained on the Performance Standard concerning the particular activity.

Gallons - This unit of measure is found on Activity 205, Tack Coat.
The unit of measure is the gallons of tack coat used.

Tons - This unit of measure is found on Activities 201, 202, 203, 204, 207, 209, 246, 260, 261, 284, 285, 341 and 406.

The tons placed will be the units of accomplishments to report. **EXAMPLE:** Activity 202 is reported by the **tons of premix** placed. If the work takes one day of preparation and the premix is not actually placed until the second day, report zero accomplishments the first day and the number of tons of premix finally placed the second day.

Feet - This unit of measure is found on Activities 208, 244, 282, 283, 287, 301, 302, 343 and 405.

The work performed is measured in feet. ***Note: When measuring culvert pipe do not include bands. When measuring Ditchline Obstacle for 287 it is the actual length of the ditchline cleared.***

Square Feet - This unit of measure is found on Activities 241, 245, and 401.
Table #13 in Appendix A of this manual will prove helpful in determining square feet.

Miles - This unit of measure is found on Activities 262, 263 and 411. "Mile" includes the complete section of highway.

Example: Activity 262 - Ditching and Blading - Unpaved Roadway

ONE side of the highway is ditched for a distance of two miles.
The accomplishment is 1.0 Mile

BOTH sides of the highway are ditched for a distance of one mile.
The accomplishment is still 1.0 Mile.

The first day, one side of the road is ditched for a distance of one mile. The next day the other side of the same mile section is ditched.
Accomplishments for both days is 1.0 Mile. (.5 road mile reported the first day and .5 road mile the second day.)

Activity 361, Coding and Spotting. The accomplishment reported is the number of miles coded or spotting.

Activity 368, Roadway Striping (yellow) and Activity 369, Roadway Striping (white). To determine accomplishments for these two activities, footage counters for all paint guns used must be totaled and the sum divided by 5280 (number of feet in a mile), in order to accurately report miles of 4-inch solid line painted, white or yellow.

Activity 411, Hauling Materials (Premix and Stone) to job sites where haul time *exceeds* one hour.

Employee Hours - This unit of measure is found on Activities 281, 286, 304, 309, 310, 312, 314, 315, 316, 342, 344, 345, 363, 364, 365, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 402, 403, 404, 407, 408, 410, 542, 550, 801, 803, 807, 809, 813, 814, 815 and 816.

The accomplishments are the same as the total number of employee hours used to complete the activity.

Shoulder Miles- This unit of measure is found on Activity 288, Pulling Shoulders and Ditches - Paved Roadway, Activity 303, Mowing Non-Expressway, and Activity 305, Brush Control – Machine.

Accomplishments reported are the actual number of shoulder miles pulled or cut.

Acres- This unit of measure is found on Activities 306, 307 and 317. Appendix A Table #8 of this manual will prove helpful in determining the number of acres cut, planted and sprayed.

Bags - This unit of measure is found on Activity 308, Litter Pickup and Disposal, and is reported by the number of 30-40 gallon bags of litter collected.

Each - This unit of measure is found on Activity 366, Impact Attenuators, and is reported by the number of impact attenuators either repaired or replaced.

Cubic Yards- This unit of measure is found on Activity 409, Placing PCC. The accomplishment is the total cubic yards of concrete placed.

Dollars - Not reported on the DOT-12.

COMMON ERRORS MADE ON THE DOT-12

Have you heard the saying “Garbage In, Garbage Out”?

Nothing could be truer. We must feed good information into the system in order to get good information out. Good information starts with **YOU**, the Crew Chief!!

The purpose of this section is to create Crew Chief awareness. As a Crew Chief you should place a concentrated effort on improving the accuracy of the DOT-12. Perhaps the following points will assist you in your efforts.

IMPROPER CORRECTIONS OF THE DOT-12

It is important to remember, when making “Changes” to the DOT-12, **NOT TO ERASE** or **DO NOT USE LIQUID PAPER/WHITEOUT**. Simply strike through the error and place the correction to the side or above it. Place your initials beside the correction in case there are questions later.

EXAMPLE:

DAILY WORK REPORT			ACCOUNTING INFORMATION			
			1	2	3	4
Date:	RECEIVING		0836	0836		
07-01-01	AUTH/ E.D. NO		MR4451S	MR4451S		
Home Org:	ACTIVITY		262	813		
0836	“N” OR “P”		N	N		
DOCUMENT CONTROL		ROUTE	C032	C032		
Number:	Type:	BEG MILE				
	ER	END. MILE				
MAINT. UNITS ACCOMPLISHED / WORK			3.0	8.0		
MAINT. UNITS OF MEASURE / TYPE OF			RM	EH		

EMPLOYEE NAME	SOCIAL SECURITY	WAGE CODE	HOURS REPORTED			
			1	2	3	4
Melvin Curtis	5412	8326	8 JR	8		
Curtis Hines	0165	8363	8			
Roy Scott	6452	8366	8			
Norman Taylor	2331	8367	8			
Charles Davis	8061	8368	8			
Larry Potts	6280		8			
TOTAL HOURS			48 40 JR	8		

REPORTING A WORK TASK TO THE WRONG ACTIVITY

A small rock slide is removed from the ditchline.

The Crew Chief INCORRECTLY reports it as

Activity 262 Ditching and Blading which is

measured in miles.



The removal of the rock slides is
better measured in feet
because in most cases it only
involves a portion of the ditchline.

Reporting this task to Activity 262, Ditching and Blading, is INCORRECT and will distort the productivity data for ditching and blading operations. ACTIVITY 287, Removing Ditchline Obstacles is the correct activity to use for this task and is reported in feet.

BECOME FAMILIAR WITH THE PERFORMANCE STANDARDS

REPORTING ACCOMPLISHMENTS IN THE WRONG UNIT OF MEASURE

The following is an example of reporting the wrong unit of measure for an activity.

The unit of measure for Activity 308, Litter Pickup and Disposal, is **Bags**. At one time this activity was reported in Employee Hours. The Crew Chief doesn't realize there has been a change and continues to report the activity in Employee Hours.

Suppose a crew of four employees (1 being the truck driver) picked up litter for 5 days in a row. Each day the crew picked up 60 Bags utilizing a total of 32 Employee Hours. The Crew Chief reports the Employee Hours as accomplishments instead of the Bags.

	<u>Bags</u>	<u>Employee Hours</u>
July 23	60	32
July 24	60	32
July 25	60	32
July 26	60	32
July 27	<u>60</u>	<u>32</u>
	300	160

$$300 \text{ minus } 160 = 140$$

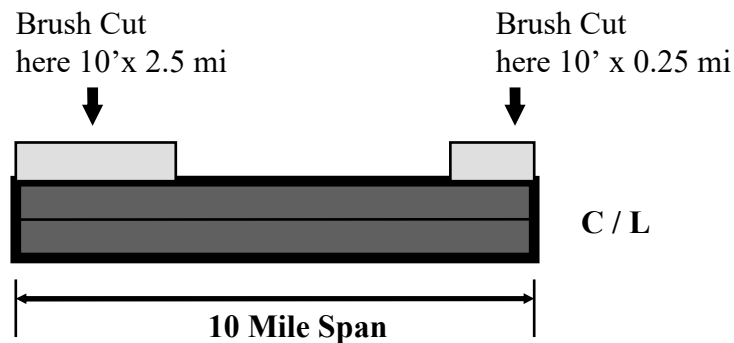
As you can see, there is a difference of 140 between the total number of Bags and the total number of Employee Hours. In a short period, erroneous data distorts the actual work units accomplished.

***It is important to stay current on any changes
made to the Maintenance Performance Standards.***

ERRONEOUS APPLICATION OF THE “CORRECT” UNIT OF MEASURE

Illustrated below is an example of an erroneous application of a unit of measure.

Activity 305 Brush Control-Machine Cut, is measured in Shoulder Miles (SM). Suppose a crew cut brush beginning with a 0.25 mile section 10 feet back from the roadway on WV 16. After they finish, they traveled approximately 7.5 miles down the road and cut another 2.5 mile section, 10 feet wide.



The Crew Chief records the units of measure as Road Miles and reports 10 (RM).

Incorrect this is the old unit of measure, the correct unit of measure is **Shoulder Miles (SM)**.

NOTE: In reporting Shoulder Miles, width is not a factor.

Had they known width was not a factor and reported 10 shoulder miles...

Incorrect Again

Report actual area cut.

10' X 0.25 miles (1 side of road) = 0.25 SM

10' X 2.50 miles (1 side of road) = 2.50 SM

CORRECT: REPORT 2.75 Shoulder Miles (SM)

The Crew Chief should have reported the 2.75 Shoulder Miles because that was the amount of brush that was cut. Reporting 10 Road Miles or 10 Shoulder Miles is incorrect and causes productivity and historical information to be worthless.

This could have been prevented if the Crew Chief had been familiar with the Maintenance Performance Standards and application of the units of measure. The application of the Maintenance Performance Standards and various units of measure are explained in this manual on pages 11 and 12.

ASK YOURSELF THE FOLLOWING QUESTIONS

1. Do you fully understand all sections of the DOT-12?
2. Do you fully understand the Maintenance Performance Standards?
3. Are you using the activities correctly?
4. Are you taking the time to find the definition of the unit of measure and making an effort to report accordingly?
5. Are you making use of the “General Comment Section” on the reverse side of the DOT-12?
6. Are you reviewing the DOT-12 at the end of each day for accuracy before signing it?

Hopefully you were able to answer “yes” to all the questions above. If not, take the responsibility upon yourself because of the key role you play as a Crew Chief
and

Strive to achieve “Good reporting”!!!!

INSTRUCTIONS

FOR COMPLETING THE

DOT -12

EXHIBIT I – FRONT SIDE



**WEST VIRGINIA
DEPARTMENT OF TRANSPORTATION**

Form DOT-12 (Rev. 11/98)

DAILY WORK REPORT		5	ACCOUNTING INFORMATION			
			1	2	3	4
Date:	RECEIVING ORG.	6				
1	AUTH/ E.D. NO	7				
Home Org:	ACTIVITY CODE	8				
2	"N" OR "P"	9				
DOCUMENT CONTROL		ROUTE NUMBER	10			
Number:	Type:	BEG. MILE POST	11			
3	4	END. MILE POST	12			
MAINT: UNITS ACCOMPLISHED / WORK ORDER		13				
MAINT: UNITS OF MEASURE / TYPE OF WORK		14				

EMPLOYEE NAME	SOCIAL SECURITY	WAGE CODE	HOURS REPORTED			
			1	2	3	4
15	16	17	18			
TOTAL HOURS			19			

EQUIPMENT DESCRIPTION	E.D. NO.	END. METER & STATUS	HOURS OR MILES REPORTED			
			1	2	3	4
20	21	22	23			
TOTAL HOURS/MILES			24			

INVENTORY DESCRIPTION	ORG. LOC.	CLASSIFICATION CLASS - TYPE - SUB.	INVENTORY USAGE BY UNITS			
			1	2	3	4
25	26	27	28			
TOTAL UNITS REPORTED			29			

Prepared By: _____ Approved By: _____ Entered Into System By: _____
30 31 32

FRONT SIDE - DOT-12

1. DATE - Enter the date for which work is being reported.
Example: July 1, 2001 would be entered as: 07 01 01
2. HOME ORG NO. - Enter the four-digit Organization Number to which the employees are permanently assigned.
3. DOCUMENT NO. - The Office Assistant will complete this information.
4. DOCUMENT TYPE - Enter type of transactions being reported.
FR - Foreman's Report
CR - Clerk's Report
MR - Mechanic's Report

Maintenance Crew Chiefs use FR

5. ACCOUNTING INFORMATION - (See Pages 6 – 14 of this manual)
6. REC. ORGANIZATION - Enter the four-digit Receiving Organization Number that will be charged for the work being performed. For services performed for *outside agencies* use four zeros for the organization number.
(*Read pages 4 and 5 of this manual to understand basic structures of Organization numbers.*)
7. AUTHORIZATION OR ED NUMBER - Enter the authorization number, (ED number for mechanics) for the work being charged.
(*Read pages 6 -8 of this manual to understand basic structures of authorization numbers.*)
8. ACTIVITY CODE NO. - Enter the appropriate Performance Standard Activity Code for each column of reported data.

Note:

Equipment Down Time	Act. 501	Auth. EQDOWN4 (Home Org.) EQDOWN7 (Eq. Division)
Equipment Idle Time	Act. 811	Auth. EQIDLE4 (Home Org.) EQIDLE7 (Eq. Division)

REFER TO VOLUME IV, CHAPTER 5 OF THE ADMINISTRATIVE OPERATING PROCEDURES, DOT (Gray) FOR FURTHER CLARIFICATION REGARDING THE PROPER AUTHORIZATIONS FOR DOWN AND IDLE.

9. N or P - Indicate whether the transaction being reported is Federally Participating (P) or Non-participating (N).
10. ROUTE NUMBER - Indicate Route Number whenever possible. The following are examples of the correct way to enter route numbers.

- West Virginia 119/4 would be written as: WV 119/04

(It is suggested to write route numbers using the zero fill.)

(The Office Assistant could inadvertently enter WV 119/4 as 119/40, thus incorrect information is entered. Using the zero fill will prevent mistakes of this nature.)

- County Route 32 would be written as: CO 32
- Interstate 77 would be written as: I 77

The following is a list of route Prefix abbreviations to be used.

CO - County	WV - West Virginia
US - United States	I - Interstate
PF - Parks/Forests	HA – HARP Routes

11. BEG. MILE POST - Enter beginning mile post whenever available and appropriate.
12. END MILE POST - Enter ending mile post whenever available and appropriate.
13. MAINT: UNITS ACCOMPLISHED/WORK ORDER - Enter the number of units of work accomplished for each activity. (Mechanics would enter the applicable work order in this field on MR Reports.)

14. MAINT.: UNITS MEASUREMENT/TYPE OF WORK - Indicate Performance Standard Unit of Measure abbreviation for the recorded activity.
(MR Reports enter “Type of Work” in this same field.)

Read pages 9-12 of this manual to fully understand applications of units of measure.

<u>UNIT OF MEASURE</u>	<u>ABBREVIATION</u>
Tons-----	TN
Gallons-----	GL
Feet-----	FT
Square Feet-----	SF
Employee Hours-----	EH
Shoulder Miles-----	SM
Acres-----	AC
Bags-----	BG
Each-----	EA
Cubic Yards-----	CY
Miles-----	MI

15. EMPLOYEE NAME - Enter name of each employee involved in the work activity reported.
16. SOCIAL SECURITY - Enter the last four (4) digits of the Social Security Number for each employee listed.
17. WAGE CODE - Enter the four-digit Wage Code of each employee listed.
18. HOURS REPORTED - Record the number of hours each employee worked on the particular activity.
19. TOTALS - Total each column to verify individual entries.
20. EQUIPMENT DESCRIPTION - Enter a brief description of each piece of equipment utilized.
21. ED. NUMBER - Enter Equipment Division Number of each piece of equipment involved in activities being reported. Enter the ED. No. with the “-” (hyphen) inserted. EXAMPLE: ED. No. 221-323 or 221-1074.
22. END METER & STATUS- Enter the day’s ending meter reading and meter status. (“O” for Operational and “N” for Non-operational)
23. HOURS - Enter the number of hours the equipment was used for the work activity or the amount of time the equipment was down.

- 24. TOTALS - Total each column to verify individual entries.
- 25. DESCRIPTION - Enter description of each type of material involved in the activity being reported. These descriptions should be complete and accurate including sizes where applicable.
- 26. ORG. LOC. - Enter the two-digit number indicating the storage site at which each material involved in the activity reported was inventoried.
- 27. INV. CLASSIFICATION - Enter the Inventory Class, Type and Sub-Code of each material involved in the activity being recorded. This will consist of a total of twelve digits.

NOTE: If the Crew Chief is not knowledgeable of an Inventory Code, this information can be completed on the DOT-12 by the OFFICE ASSISTANT, **provided** the Crew Chief enters a proper description of the material used.

- 28. MATERIAL USAGE BY UNITS - Enter units of material used for each work activity recorded.
- 29. TOTALS - Total each column in order to verify individual entries.
- 30. PREPARED BY – Must be a complete signature by the individual who actually prepared the DOT-12. It is **not acceptable** for the Prepared By and Approved By signature to be the same individual. A typed or stamped name is not acceptable, this signature must be a legible, handwritten signature.

Be sure to review DOT-12 for accuracy before signing. It Pays!

- 31. APPROVED BY - Complete signature of approval by Manager/Supervisor of the organization. It is **not acceptable** for the “PREPARED BY” and “APPROVED BY” signature to be the same individual. A typed or stamped name is not acceptable, this signature must be a legible, handwritten signature.
- 32. ENTER INTO THE SYSTEM BY: - The employee (usually an Office Assistant) who actually performs the data entry of the DOT-12. A typed or stamped name is not acceptable, this signature (initials are accepted for this line) must be legible and handwritten.

SIGNING THE DOT-12 IS YOUR VERIFICATION THAT ALL THE INFORMATION CONTAINED ON THE DOT-12 IS CORRECT. RECORDING THE PROPER SIGNATURES ON THE DOT-12 ARE VERIFICATION THAT INTERNAL CONTROLS ARE IN PLACE AND WORKING.

INSTRUCTIONS
FOR COMPLETING THE
DOT-12
EXHIBIT II – REVERSE SIDE

EXHIBIT II
REVERSE SIDE DOT-12

COMMENTS

Document workday issues, such as: unauthorized absences, work rule violations and disciplinary action, work related injuries, supplemental reporting of work hours, unreported within a week, etc.
The preparer must sign and date the information.

REFER TO EXHIBIT II
(REVERSE SIDE DOT-12)

**THIS IS A VERY IMPORTANT SECTION OF THE DOT-12
TO BE UTILIZED BY THE CREW CHIEF!**

***AS A RULE, THIS SECTION IS NOT BEING USED
OFTEN ENOUGH OR PROPERLY BY THE CREW CHIEF.***

***THIS SECTION IS VERY IMPORTANT
AS COMMENTS MADE HERE
CAN CLARIFY A GIVEN SITUATION
THAT MAY OTHERWISE BE CONFUSING.***

AS DISCUSSED OF PAGE 3 OF THIS MANUAL, THE FOLLOWING ARE
EXAMPLES OF GOOD REMARKS MADE ON THE REVERSE SIDE OF THE
DOT-12.

- Wreck on WV 16 at mile post 67.3. DOH Crew signed and flagged until 6:45 PM.
- John Alvin Doe dented ED# 213-000 hitting a deer while in route to perform Activity 382.
- Calling for snow. Sent the night crew home at 10:30 AM.
- Reported rock on shoulder of WV 18 at mile post 23. Moved the rock into ditch to be removed later.
- Bobby John Doe cut hand while performing Activity 304. First Aid was administered before transporting him to the hospital.
- Free stone supplied by Coal and Drilling Company for Activity 261, CO 32.
- Mechanical breakdown on ED# 412-000 delayed job 1 hour.

Crew Chief must sign and date the comments made to the DOT-12.

APPENDIX A

Measurement Conversion Tables

TABLE 1**SQUARE YARDS OF ROAD SURFACE FOR VARIOUS WIDTHS**

Road Width in Feet	Per Lineal Foot	Per 100 Feet	Per Mile	Road Width in Feet	Per Lineal Foot	Per 100 Feet	Per Mile
6	.67	66.67	3520	24	2.67	266.67	14000
7	.78	77.78	4107	25	2.78	277.78	14667
8	.89	88.89	4693	26	2.89	288.89	15253
9	1.00	100.00	5280	28	3.11	311.11	16427
10	1.11	111.11	5867	30	3.33	333.33	17600
11	1.22	122.22	6453	32	3.56	355.56	18773
12	1.33	133.33	7040	34	3.78	377.78	19947
13	1.44	144.44	7627	36	4.00	400.00	21120
14	1.56	155.56	8213	38	4.22	422.22	22293
15	1.67	166.67	8800	40	4.44	444.44	23467
16	1.78	177.78	9387	50	5.56	555.56	29333
17	1.89	188.89	9973	60	6.67	666.67	35200
18	2.00	200.00	10560	70	7.78	777.78	41067
20	2.22	222.22	11733	75	8.33	833.33	44000
22	2.44	244.44	12907	80	8.89	888.89	46933

TABLE 2**TONS OF AGGREGATE REQUIRED PER MILE**

WIDTH of Area in Feet	POUNDS PER SQUARE YARD														
	3	5	7	8	10	12	15	20	25	30	35	40	45	50	100
8	7.0	12	16	19	23	28	35	47	59	70	82	94	106	117	235
9	7.9	13	18	21	26	32	40	53	66	79	92	106	119	132	264
10	8.8	15	20	23	29	35	44	59	73	88	103	116	132	147	293
11	9.7	16	23	26	32	39	48	65	81	97	113	129	145	161	323
12	11	18	25	28	35	42	53	70	88	106	123	141	158	176	352
14	12	20	29	33	41	49	62	82	103	123	144	164	185	205	410
15	13	22	31	35	44	53	66	88	110	132	154	176	198	220	440
16	14	23	33	38	47	56	70	94	117	140	164	188	211	235	469
18	16	26	37	42	53	63	80	106	132	158	185	212	238	264	528
20	18	29	41	47	59	70	88	118	147	176	205	235	264	293	587
22	19	32	45	52	65	77	97	129	161	194	226	258	290	323	645
24	21	35	49	56	70	84	105	141	176	212	246	282	317	352	704
25	22	37	51	59	73	88	110	147	183	220	257	294	330	366	733
26	23	38	53	61	76	92	114	152	191	228	267	305	343	381	762
28	25	41	57	66	82	99	123	164	205	246	287	328	370	410	820
30	26	44	62	70	88	106	132	176	220	264	308	352	396	440	880

TABLE 3

LOOSE AND COMPACTED WEIGHTS OF VARIOUS MATERIALS

Type of Material	LOOSE			COMPACTED		
	Pounds Per Cubic Foot	Pounds Per Cubic Yard	Approx. lbs Per Sq. Yd Per 1” depth	Pounds Per Cubic Foot	Pounds Per Cubic Yard	Approx. lbs Per Sq. Yd Per 1” depth
TRAP ROCK	96	2590	72	122	3200	92
	100	2690	75	127	3420	95
	103	2780	77	131	3540	98
Granite or Limestone	90	2410	67	113	3060	85
	93	2500	69	118	3180	88
	96	2590	72	122	3300	92
Sandstone	82	2220	62	105	2830	79
	86	2320	64	109	2950	82
	90	2410	66	113	3060	85
	93	2500	70	118	3180	88
Sand	97	2630	73	105	2830	79
	101	2740	76	109	2950	82
	106	2850	79	113	3060	85
	110	2960	82	118	3180	88
Slag	55	1480	41	70	1890	53
	65	1760	49	83	2240	62
	76	2040	57	96	2590	72
	86	2320	64	109	2950	82
Asphalt Concrete	91	2480	69	115	3100	86
	100	2700	75	130	3510	97
	116	3130	87	145	3910	109
	128	3460	96	160	4320	120

TABLE 4**CUBIC YARDS OF MATERIAL REQUIRED PER 100 LINEAR FEET**

WIDTH of Area in feet	CUBIC YARDS OF LOOSE AGGREGATE FOR VARIOUS DEPTHS IN INCHES														
	1/2	3/4	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	8	10	12
8	1.2	1.9	2.5	3.7	4.9	6.2	7.4	8.6	9.9	11.1	12.3	14.8	19.8	24.7	29.6
9	1.4	2.1	2.8	4.2	5.6	6.9	8.3	9.7	11.1	12.5	13.9	16.7	22.2	27.8	33.3
10	1.5	2.3	3.1	4.6	6.2	7.7	9.3	10.8	12.3	13.9	15.4	18.5	24.7	30.9	37.0
11	1.7	2.5	3.4	5.1	6.8	8.5	10.2	11.9	13.6	15.3	17.0	20.4	27.2	34.0	40.7
12	1.9	2.8	3.7	5.6	7.4	9.3	11.1	13.0	14.8	16.7	18.5	22.2	29.6	37.0	44.4
14	2.2	3.2	4.3	6.5	8.6	10.8	13.0	15.1	17.3	19.4	21.6	25.9	34.6	43.2	51.9
15	2.3	3.5	4.6	6.9	9.3	11.6	13.9	16.2	18.5	20.8	23.1	27.8	37.0	46.3	55.6
16	2.5	3.7	4.9	7.4	9.9	12.3	14.8	17.3	19.8	22.2	24.7	29.7	39.5	49.4	59.3
18	2.8	4.2	5.6	8.3	11.1	13.9	16.7	19.4	22.2	25.0	27.8	33.3	44.4	55.6	66.7
20	3.1	4.6	6.2	9.3	12.3	15.4	18.5	21.6	24.7	27.8	30.9	37.0	49.4	61.7	74.1
22	3.4	5.1	6.8	10.2	13.6	17.0	20.4	23.8	27.2	30.6	34.0	40.7	54.3	67.9	81.5
24	3.7	5.6	7.4	11.1	14.8	18.5	22.2	25.9	29.6	33.3	37.0	44.4	59.3	74.1	88.9
25	3.9	5.8	7.7	11.6	15.4	19.3	23.1	27.0	30.9	34.8	38.6	46.3	61.7	77.2	92.6
26	4.0	6.0	8.0	12.0	16.0	20.1	24.1	28.1	32.1	36.1	40.1	48.1	64.2	80.2	96.3
28	4.3	6.5	8.6	13.0	17.3	21.6	26.0	30.2	34.6	38.9	43.2	51.9	69.1	86.4	103.7
30	4.6	6.9	9.3	13.9	18.6	23.1	27.8	32.4	37.0	41.7	46.3	55.6	74.1	92.6	111.1

TABLE 5**GALLONS OF ASPHALT REQUIRED PER MILE FOR RATES OF APPLICATION**

ROADWIDTH in feet	GALLONS PER SQUARE YARD																
	0.10	0.15	0.20	0.25	0.30	0.33	0.35	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.25	1.50	2.00
8	469	704	939	1173	1408	1564	1643	1877	2347	2816	3285	3755	4224	4693	5867	7040	9387
9	528	792	1056	1320	1584	1760	1848	2112	2640	3168	3696	4224	4752	5280	6600	7920	10560
10	587	880	1173	1467	1760	1956	2053	2347	2933	3520	4107	4693	5280	5867	7333	8880	11733
11	645	968	1291	1613	1936	2151	2259	2581	3227	3872	4517	5163	5808	6453	8067	9680	12907
12	704	1056	1408	1760	2112	2347	2464	2816	3520	4224	4928	5632	6336	7040	8800	10560	14080
14	821	1232	1643	2053	2464	2738	2875	3285	4107	4928	5749	6571	7392	8213	10267	12320	16427
15	880	1320	1760	2200	2640	2933	3080	3520	4400	5280	6160	7040	7920	8800	11000	13200	17600
16	939	1408	1877	2347	2816	3129	3285	3755	4693	5632	6571	7509	8448	9387	11733	14080	18773
18	1056	1584	2112	2640	3168	3520	3696	4224	5280	6336	7392	8448	9504	10560	13200	15840	21120
20	1173	1760	2347	2933	3520	3911	4107	4693	5867	7040	8213	9387	10560	11733	14667	17600	23467
22	1291	1936	2581	3227	3872	4302	4517	5163	6453	7744	9035	10325	11616	12907	16133	19360	25813
24	1408	2112	2816	3520	4224	4693	4928	5632	7040	8448	9856	11264	12672	14080	17600	21120	28160
25	1467	2200	2933	3667	4400	4889	5133	5867	7333	8800	10267	11733	13200	14667	18333	22000	29333
26	1525	2288	3051	3813	4576	5084	5339	6101	7627	9152	10677	12203	13728	15253	19067	22880	30507
28	1643	2464	3285	4107	4928	5476	5749	6571	8213	9856	11499	13141	14784	16427	20533	24640	32853
30	1760	2640	3520	4400	5280	5867	6160	7040	8800	10560	12320	14080	15840	17600	22000	26400	35200

TABLE 6**LINEAL FEET COVERED BY 1000 GALLON TANK**

ROAD WIDTH in feet	GALLONS PER SQUARE YARD																
	0.10	0.15	0.20	0.25	0.30	0.33	0.35	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.25	1.50	2.00
8	11250	7500	5625	4500	3750	3375	3214	2813	2250	1875	1607	1406	1250	1125	900	750	563
9	10000	6667	5000	4000	3333	3000	2857	2500	2000	1667	1429	1250	1111	1000	800	667	500
10	9000	6000	4500	3600	3000	2700	2571	2250	1800	1500	1286	1125	1000	900	720	600	450
11	8182	5455	4091	3273	2727	2455	2338	2045	1636	1364	1169	1023	909	818	655	545	409
12	7500	5000	3750	3000	2500	2250	2143	1875	1500	1250	1071	938	833	750	600	500	375
14	6429	4286	3214	2571	2143	1929	1837	1607	1286	1071	918	804	714	643	514	429	321
15	6000	4000	3000	2400	2000	1800	1714	1500	1200	1000	857	750	667	600	480	400	300
16	5625	3750	2813	2250	1875	1688	1607	1406	1125	938	804	703	625	563	450	375	281
18	5000	3333	2500	2000	1667	1500	1429	1250	1000	833	714	625	556	500	400	333	250
20	4500	3000	2250	1800	1500	1350	1286	1125	900	750	643	563	500	450	360	300	225
22	4091	2727	2045	1636	1364	1227	1169	1023	818	682	584	511	455	409	327	273	205
24	3750	2500	1875	1500	1250	1125	1071	938	750	625	536	469	417	375	300	250	188
25	3600	2400	1800	1440	1200	1080	1029	900	720	600	514	450	400	360	288	240	180
26	3462	2308	1731	1385	1154	1038	989	865	692	577	495	433	385	346	277	231	173
28	3214	2143	1607	1286	1071	964	918	804	643	536	459	402	357	321	257	214	161
30	3000	2000	1500	1200	1000	900	857	750	600	500	429	375	333	300	240	200	150

TABLE 7
Linear Measure

To Convert	To	Multiply by
Inches	Feet	0.080
Inches	Yards	0.027
Feet	Inches	12
Feet	Yards	.33
Feet	Rods	0.06
Yards	Inches	36
Yards	Feet	3
Yards	Rods	0.18
Rods	Inches	198
Rods	Feet	16.5
Rods	Yards	5.5
Miles	Feet	5280
Miles	Yards	1760
Miles	Rods	320

TABLE 9
Volume Measure

To Convert	To	Multiply by
Cubic Feet	Cubic Inches	1728
Cubic Feet	Cubic Yards	0.04
Cubic Feet	Gallons	7.48
Cubic Yards	Cubic Feet	27
Cubic Yards	Gallons	202
Quarts	Pints	2
Quarts	Gallons	0.25
Gallons	Pints	8
Gallons	Quarts	4
Gallons	Cubic Feet	0.13

TABLE 8
Area Measure

To Convert	To	Multiply by
Square Inches	Feet	0.007
Square Feet	Square Inches	144
Square Feet	Square Yards	0.11
Square Yards	Square Inches	1296
Square Yards	Square Feet	9
Square Yards	Square Rods	0.03
Square Rods	Square Feet	272.25
Square Rods	Square Yards	30.25
Acres	Square Feet	43560
Acres	Square Yards	4840
Acres	Square Rods	160

TABLE 10
Weights - Other Measure

To Convert	To	Multiply by
Ounces	Pounds	0.06
Pounds	Ounces	16
Short Ton	Pounds	2000
Long Ton	Pounds	2240
Miles/Hour	Feet/Minute	88
Miles/ Hour	Feet/Second	1.47
Meters	Inches	39.37
Meters	Feet	3.28
Meters	Yards	1.09

TABLE 12**INCHES TO DECIMALS OF A FOOT**

INC	0	1	2	3	4	5	6	7	8	9	10	11
0	0	.083	.166	.250	.333	.416	.500	.583	.666	.750	.833	.916
1/32	.002	.085	.169	.252	.335	.419	.502	.585	.669	.752	.835	.919
1/16	.005	.088	.171	.255	.338	.421	.505	.588	.671	.755	.838	.921
3/32	.007	.091	.174	.257	.341	.424	.507	.591	.674	.757	.841	.924
1/8	.010	.093	.177	.260	.343	.427	.510	.593	.677	.760	.843	.927
5/32	.013	.096	.179	.263	.346	.429	.513	.596	.679	.763	.846	.929
3/16	.015	.099	.182	.265	.349	.432	.515	.599	.682	.765	.849	.932
7/32	.018	.101	.184	.268	.351	.434	.518	.601	.684	.768	.851	.934
1/4	.020	.104	.187	.270	.354	.437	.520	.604	.687	.770	.854	.937
9/32	.023	.106	.190	.273	.356	.440	.523	.606	.690	.773	.856	.940
5/16	.026	.109	.192	.276	.359	.442	.526	.609	.692	.776	.859	.942
11/32	.028	.112	.195	.278	.362	.445	.528	.612	.695	.778	.862	.945
3/8	.031	.114	.197	.281	.364	.447	.531	.614	.697	.781	.864	.947
13/32	.033	.117	.200	.283	.367	.450	.533	.617	.700	.783	.867	.950
7/16	.036	.119	.203	.286	.369	.453	.536	.619	.703	.786	.869	.953
15/32	.039	.122	.205	.289	.372	.455	.539	.622	.705	.789	.872	.955
1/2	.041	.125	.208	.291	.375	.458	.541	.625	.708	.791	.875	.958
17/32	.044	.127	.210	.294	.377	.460	.544	.627	.710	.794	.877	.960
9/16	.046	.130	.213	.296	.380	.463	.546	.630	.713	.796	.880	.963
19/32	.049	.132	.216	.299	.382	.466	.549	.632	.716	.799	.882	.966
5/8	.052	.135	.218	.302	.385	.468	.552	.635	.718	.802	.885	.968
21/32	.054	.138	.221	.304	.388	.471	.554	.638	.721	.804	.888	.971
11/16	.057	.140	.224	.307	.390	.474	.557	.640	.724	.807	.890	.974
23/32	.059	.143	.226	.309	.393	.476	.559	.643	.726	.809	.893	.976
3/4	.062	.145	.229	.312	.395	.479	.562	.645	.729	.812	.895	.979
25/32	.065	.148	.231	.315	.398	.481	.565	.648	.731	.815	.898	.981
13/16	.067	.151	.234	.317	.401	.484	.567	.651	.734	.817	.901	.984
27/32	.070	.153	.237	.320	.403	.487	.570	.653	.737	.820	.903	.987
7/8	.072	.156	.239	.322	.406	.489	.572	.656	.739	.822	.906	.989
29/32	.075	.158	.242	.325	.408	.492	.575	.658	.742	.825	.908	.992
15/16	.078	.161	.244	.328	.411	.494	.577	.661	.744	.828	.911	.994
31/32	.080	.164	.247	.330	.414	.497	.580	.664	.747	.830	.914	.997

TABLE 13**Square Feet Chart**

Length in feet	Width in Feet									
	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100
11	11	22	33	44	55	66	77	88	99	110
12	12	24	36	48	60	72	84	96	108	120
13	13	26	39	52	65	78	91	104	117	130
14	14	28	42	56	70	84	98	112	126	140
15	15	30	45	60	75	90	105	120	135	150
16	16	32	48	64	80	96	112	128	144	160
17	17	34	51	68	85	102	119	136	153	170
18	18	36	54	72	90	108	126	144	162	180
19	19	38	57	76	95	114	133	152	171	190
20	20	40	60	80	100	120	140	160	180	200
21	21	42	63	84	105	126	147	168	189	210
22	22	44	66	88	110	132	154	176	198	220
23	23	46	69	92	115	138	161	184	207	230
24	24	48	72	96	120	144	168	192	216	240
25	25	50	75	100	125	150	175	200	225	250

TABLE 14**Square Yards Chart**

Length in feet	Width in Feet									
	1	2	3	4	5	6	7	8	9	10
1	0.1	0.2	0.3	0.4	0.6	0.7	0.8	0.9	1.0	1.1
2	0.2	0.4	0.7	0.9	1.1	1.3	1.6	1.8	2.0	2.2
3	0.3	0.7	1.0	1.3	1.7	2.0	2.3	2.7	3.0	3.3
4	0.4	0.9	1.3	1.8	2.2	2.7	3.1	3.6	4.0	4.4
5	0.6	1.1	1.7	2.2	2.8	3.3	3.9	4.4	5.0	5.6
6	0.7	1.3	2.0	2.7	3.3	4.0	4.7	5.3	6.0	6.7
7	0.8	1.6	2.3	3.1	3.9	4.7	5.4	6.2	7.0	7.8
8	0.9	1.8	2.7	3.6	4.4	5.3	6.2	7.1	8.0	8.9
9	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
10	1.1	2.2	3.3	4.4	5.6	6.7	7.8	8.9	10.0	11.1
11	1.2	2.4	3.7	4.9	6.1	7.3	8.6	9.8	11.0	12.2
12	1.3	2.7	4.0	5.3	6.7	8.0	9.3	10.7	12.0	13.3
13	1.4	2.9	4.3	5.8	7.2	8.7	10.1	11.6	13.0	14.4
14	1.6	3.1	4.7	6.2	7.8	9.3	10.9	12.4	14.0	15.6
15	1.7	3.3	5.0	6.7	8.3	10.0	11.7	13.3	15.0	16.7
16	1.8	3.6	5.3	7.1	8.9	10.7	12.4	14.2	16.0	17.8
17	1.9	3.8	5.7	7.6	9.4	11.3	13.2	15.1	17.0	18.9
18	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
19	2.1	4.2	6.3	8.4	10.6	12.7	14.8	16.9	19.0	21.1
20	2.2	4.4	6.7	8.9	11.1	13.3	15.6	17.8	20.0	22.2
21	2.3	4.7	7.0	9.3	11.7	14.0	16.3	18.7	21.0	23.3
22	2.4	4.9	7.3	9.8	12.2	14.7	17.1	19.6	22.0	24.4
23	2.6	5.1	7.7	10.2	12.8	15.3	17.9	20.4	23.0	25.6
24	2.7	5.3	8.0	10.7	13.3	16.0	18.7	21.3	24.0	26.7
25	2.8	5.6	8.3	11.1	13.9	16.7	19.4	22.2	25.0	27.8

TABLE 15

**NUMBER OF BOARD FEET PER LINEAL FOOT
VARIOUS SIZES OF LUMBER**

WIDTH IN	THICKNESS IN INCHES									
INCHES	2	4	5	6	7	8	9	10	12	14
4	0.67	1.33								
5	0.83	1.67								
6	1.00	2.00		3.00						
8	1.33	2.67		4.00		5.33				
10	1.67	3.33	4.17	5.00		6.67		8.33		
12	2.00	4.00	5.00	6.00		8.00	9.00		12.00	
13										15.17
14	2.33	4.67	5.83	7.00	8.17	9.33			14.00	16.63
16		5.33				10.67			16.00	
18						12.00	13.50		18.00	
20						13.33		16.67	20.00	
24						16.00			24.00	