

1944

ANNUAL REPORT

VA-R-1 & VA-R-2

ANNUAL REPORT

1944

Soil and Water Conservation Research

VA-R-1 and VA-R-2 Projects

Research Division, Soil Conservation Service

United States Department of Agriculture

In Cooperation With

Agricultural Engineering Department

Virginia Agricultural Experiment Station

Blacksburg, Virginia

and

Agricultural Division

Tennessee Valley Authority

January 1, 1945

SOIL AND WATER CONSERVATION RESEARCH

ANNUAL REPORT

1944

I. Personnel:

Virginia Agricultural Experiment Station:

Seitz, C. E., Head of Department of Agricultural Engineering  
(Part Time)  
Edminster, T. W., Assistant Agricultural Engineer  
July 1, 1943 - August 31, 1944  
Fillingane, Bonnie J., Clerk-Stenographer  
(Part Time) September 7, 1943 - May 31, 1944  
McCoy, Joyce, Clerk-Stenographer  
June 1, 1944 - August 31, 1944  
Howard, Phyllis, Clerk-Stenographer  
August 8, 1944 ----  
Howard, Louise, Clerk-Stenographer  
October 16, 1944 ----  
Hillman, Charles, Field Laboratory Assistant  
July, 1944 - September, 1944  
McCoy, Joe, Field Laboratory Assistant  
July, 1944 - September, 1944

Soil Conservation Service:

Crabb, George A., Jr., Agricultural Engineer (P-2)  
(Part Time) -- May 1, 1944  
Full Time May 1, 1944 - August 22, 1944  
Military Leave  
Edminster, T. W., Agricultural Engineer (P-2)  
September 1, 1944 ----  
Price, J. Randolph, Agricultural Aide (SP-3)  
April 16, 1943 ----  
Fillingane, Bonnie J., Clerk-Stenographer (CAF-2)  
Full Time June 1, 1944 ----

Personnel Changes:

During 1944 there were several significant personnel changes. Miss Fillingane went on duty June 1 as a full time clerk-stenographer. This shift from her former part time position was the first step in the reorganization of the office staff. At present two full time assistant clerks are supplied by the Experiment Station to complete this reorganization.

On May 1, Mr. George A. Crabb, Jr. went on full time duty with the Soil Conservation Service upon cessation of his teaching duties at Virginia Polytechnic Institute. He left the project on military furlough on August 22, 1944. This vacancy was filled on September 1, 1944 by T. W. Edminster who was formerly with the Virginia Agricultural Experiment Station.

With the failure of the Experiment Station to find anyone to fill either of the two vacancies on their staff, i.e. Soil Technologist and Assistant Agricultural Engineer, it has been necessary for the Soil Conservation Service Project Supervisor to assume the responsibility for their work and administration problems, in addition to his own.

## II. Progress and Results of Research:

### A. VA-R-1-B-1-1-4 - Determination of the Effect of Slope, Character of Soil, Rainfall, and Cropping Treatment on Erosion Losses From Crop Land.

Determinations of Soil and Water losses from the 15 control plots were continued. Crop yield data, eroded material samples, and miscellaneous climatic data were collected. The preliminary soil and water losses for the 1944 season are shown in the tables I and II, Appendix A. Comparison of the 1944 results with average and exceptional records is possible from these tables.

Although runoff records are available on each of these plots, rates of runoff and unit hydrographs of the storms have not yet been prepared. Crop yields failed to show any particularly significant trends.

With the close of the 1945 season three 3-year rotation cycles will have been completed. During the coming year it must be decided whether to start a fourth rotational cycle or whether to divert the installations into other phases of research, such as a study of variable crop effects on soil loss.

### B. VA-R-1-B-1-2-4 - The Practicability of Contour Furrows for Control of Erosion on Permanent Pastures of Virginia.

The relatively low number of high intensity storms gave rather incomplete records in regard to surface runoff. Tables I and II in Appendix B give a summary of the results to date.

Once again unseasonable distribution of precipitation gave an unnatural distribution of vegetative growth during the 1944 season. Sufficient yield and moisture data has not yet been gathered to permit a full report. However, in answer to requests from the Virginia Operations Division, a Progress Report was prepared on the Pasture Furrow investigations in Virginia. This publication was issued as an In-Service publication.

A definite lack of information regarding moisture distribution under contour furrows became apparent while preparing this paper. Plans have been made for the installation of an extensive system of Boyouccous-Mick resistance blocks to make possible a more exhaustive study of moisture conditions on this particular project.

C. VA-R-1-B-1-2-5 - Comparison of Various Tillage Practices Useful in Utilizing Plant Residue Mulches for Reducing Soil and Water Losses under Cultivated Crops.

Considerable delay in obtaining equipment caused this project to be somewhat delayed in getting under way in the spring. The year proved to be profitable in that it gave us a chance to get the project sight into rotation and to give us an opportunity to adapt and adjust our methods and practices. Variations in crop yields were highly significant. Highest yields were obtained on the regular turn plow check areas, while lowest yields were found on the plots that were only disced in preparation.

Some very interesting trends in available nitrogen were found under the different treatments. Lack of laboratory assistance has delayed the completion of this phase of the study. Studies of the changes in soil structure and aggregation were completed but have not yet been completely analyzed for significance. This work will be done by the Virginia Agricultural Experiment Station Statistical Laboratory in the near future.

There were no apparently significant differences in crop yields, soil structure changes, and chemical availability changes brought about by the use of two different types of cultivator teeth. Further statistical analysis may throw more light on this phase of the study.

Several new adjustments for cultivators and planters used under stubble mulch conditions, were worked out. These will receive further testing this coming year.

Three field trials for stubble mulch were established in out lying areas. Preliminary analysis of data from these trials showed little difference in corn yields between the stubble mulch and check areas in two of the trials, and a slightly higher corn yield under stubble mulch in the Piedmont area. In all three

trials there was a noticeable reduction in sheet erosion under the mulch area. The mulched corn withstood the August drought in the Piedmont area much better than plowed corn did.

D. VA-R-2-B-2-2 - To Determine Rates and Amounts of Runoff From Small Watersheds in the Allegheny Mountain Plateau Runoff Problem Area in Virginia.

The Blacksburg watersheds, W-II and W-III, went through their second year under strip cropping with very little runoff. The runoff that did occur did so at a very low rate causing little or no serious erosion. Table I and Figures 1 through 3 and 3 A and Cover and Tillage Map No. 2 in Appendix C summarize the rainfall, runoff, miscellaneous climatological conditions and cover and tillage conditions existing on these watersheds during the year 1944.

At the present time it is impossible to show exactly the conservation effect of strip cropping on these watersheds. The fact that until the latter part of 1944 the bulk of the watershed records had not been tabulated or computed makes such analysis impossible. The 1944 data are now completely analyzed and analysis of the 1943 and certain parts of the 1941 and 1942 data are now under way. Upon its completion some very significant comparisons between water losses on straight row and strip crop farming may be developed.

Although this was the second year that strip cropping had existed on the watersheds no cover and tillage map had been prepared to show the acreage distribution of the various crops. Such a map was prepared and reproduced by ozalid printing. A finished map may be prepared when there is sufficient project personnel to carry out an accurate survey.

In the past, no standard method had been used in reporting total and cumulative total precipitation; standard and recorder gage readings were used interchangeably with resulting discrepancy in totals. The 1944 records included here are based on chart line readings and, consequently, do not always tally with some previous reports that may have been based on standard or recorder bucket totals. All subsequent records will be reported on the basis of standard gage readings - recorder readings being used only to determine midnight totals and rainfall intensities.

E. VA-R-2-B-2-2 (Part II) - To determine the Rates and Amounts of Runoff From Small Watersheds, Typical of the Piedmont Tobacco Runoff Problem Area in Region II.

Through the cooperative and very capable assistance of the personnel of the Chatham, Virginia work unit office continuous

records of rainfall, runoff and miscellaneous climatological data were obtained on the Danville Sub-station. Full summaries of the records are found in Appendix C in Tables II, III, and IV, and Figures 4 through 7 and 7A and Cover and Tillage Maps Nos. 7A, B, and C. Tables V, VI, and VII present general data summaries.

It will be noted that the Piedmont area had an extremely high annual rainfall despite a rather droughty summer. This condition was mainly caused by the high September rainfall. On September 12 and 13 heavy rains thoroughly saturated the soil. Then on September 17, 18 and 19 over 10.0" of rain fell causing high rates of runoff. The entire county suffered heavy flood damage-highway damages exceeding \$100,000 in Pittsylvania County alone. A preliminary report of this storm was prepared and submitted to Mr. Kringold in October. A more complete analysis is now in progress. This analysis will closely parallel the report of the 1940 flood as submitted by Cardwell. These two storms appear very similar in nature.

Here again, back logs of unanalyzed data make it impossible to submit comparative summaries at this time. The 1944 data are now completely analyzed and analysis is under way on 1943 and certain portions of the 1941 and 1942 records. The use of Cover and Tillage maps was once again initiated in September. Back records in the field notes are being used to develop suitable maps for the previous years that are missing.

#### Terrace Studies:

In accordance with permission granted by the Chief of Research in his letter of June 13, the Terrace Runoff gages on Watershed W-III at Danville were discontinued and removed on June 28. A great deal of the data from these installations has never been analyzed. When the remaining back log of data from the watersheds has been fully analyzed, analyzing of these terrace charts will be started.

#### F. Miscellaneous Studies:

- a. Some laboratory work has gone forward on an analysis of the soil structure in crests formed on the Long-Term Fertilizer Plots, previously reported on by Jesse Elson, Assistant Soil Technologist, Virginia Agricultural Experiment Station. Completion of the study is dependent upon return of suitable laboratory assistants.
- b. Two 1/50 acre runoff plots (temporary type) were planted to kudzu as part of a study of the adaptability of this plant to the areas in Virginia subject to 2,000 feet altitude conditions. As yet, there are no data to report.

- c. The flood rains of September apparently caused the failure of a number of Fish Pond Dams in the region surrounding the Hydrologic Sub-Station at Chatham. At the request of the District Conservationist and of certain members of the State Office the Project Supervisor has spent some time in studying these failures. Photographs, soil samples, and general data have been collected. The soil samples are being tested for liquid limit and particle size distribution. Further study of the hydrological phases of the problem is under way.
- d. Laboratory study of the eroded materials, soil samples, and grass samples from the above projects has been severely handicapped by lack of qualified laboratory technicians. Since Mr. Elson went on military leave in October 1943 the project supervisor has been attempting to maintain work on a current basis with what assistants were locally available. Several potential replacements for Mr. Elson have been rejected by the Experiment Station for one reason or another. At present a laboratory technician has been found and approved; however, War Manpower regulations may prevent her release to this job.

G. Miscellaneous Activities:

a. Extension:

A total of six radio talks were presented by project personnel. Soil Conservation Research and field practices formed the basis of these talks. Listed by title they are:

- "How Much Soil Are We Losing?"
- "Hydrologic Research Activities in Virginia"
- "Flash Floods - The Farm Is Their Source"
- "Autumn - The Season of Evaluation"
- "Don't Put Off Until Next Year What You Can Do Today"
- "Spring Tillage Practices for Soil Conservation"

Three discussions of the Research Program were presented to Rotary Clubs in Virginia during the year. Four conferences of agricultural and research workers were attended. A total of 15 field trips were made to various parts of the state for the purpose of establishing and guiding cooperative field trials of stubble mulch, inspection of research projects and study of research needs.

Approximately 100 visitors were taken over the Research Station at Blacksburg. The following groups were represented: Virginia Polytechnic Institute Agronomy Classes, County Farm Demonstration Agents, Virginia Polytechnic Institute General Agricultural Classes, Soil Conservation Service personnel, Forest Service personnel, Virginia Bankers Association, College and Experiment Station personnel (Virginia and other states), and Army Inspection Officers (3rd Service Command).

b. Cooperation with District program:

Several steps have been taken to improve the relations and cooperation between the Operations and Research Divisions.

1. Presentation of Research data in a popular form. "Losing Farms by the Truckload" is the first of this series.
2. Preparation of a Bibliography of material concerning stubble mulch practices.
3. Distributions of several questions asking for field comments on research needs.
4. Preparation of a Quarterly Bibliography of Soil Conservation reading material of particular interest to Virginia Soil Conservation Service personnel.
5. Cooperative investigation of causes for fish pond dam failures in Pittsylvania County.
6. Publication of Progress Report on Pasture Furrows in answer to requests for information from Work Unit Technicians and other Soil Conservation Service personnel.
7. Assisted in preparation of report on "Rates of Soil Deterioration in Problem Areas of Virginia" in response to requests from Regional Operations officials.
8. Preparation of a project outline on Orchard Erosion Control for post-war use started at request of the field personnel in orchard areas of the state.
9. A number of individuals requested information pertaining to Virginia Soil Conservation problems. These requests were either answered or referred to proper sources.

#### H. Publications:

The continued reduction in the staff has made it extremely difficult to find sufficient time for the preparation of publications. The following list of short publications were, however, released during 1944.

Elson, Jesse, "A Four-Year Study of the Effects of Crop, Lime, Manure, and Fertilizer on Macro-aggregation of Dunmore Silt Loam". Paper presented at October, 1943 Soil Science Society of America Annual Meeting, Published in Proceedings of Soil Science Society of America - 1943.

Edminster, T. W. - "Selected Bibliography on 'Mulch Culture' and Related Subjects", Mimeographed Experiment Station Release.

Edminster, T. W. - "Summary Report on the Soil and Water Conservation Research Program", Mimeographed by Department of Agricultural Engineering. Paper presented at the Soil Conservation Service Research Conference at Auburn, Alabama, May, 1944.

Edminster, T. W., Crabb, George A., Jr. - "Losing Farms by the Truckload", State Soil Conservation Committee Pamphlet No. 1, August, 1944

Edminster, T. W., "A Progress Report on Contour Pasture Furrow Investigations in Virginia - 1937-1944. Mimeographed In-Service, December, 1944.

The following manuscripts are now in preparation:

1. "Report on the 1944 Danville Flood"
2. "Report on Fish Pond Dam Failures in Pittsylvania County September, 1944".
3. "Grass Dams" - A popular style leaflet covering the subject of strip cropping.
4. "Analysis of Soil and Water Losses Under the High Intensity Storms of 1943"

#### I. Post-War Planning Activities:

In July, 1944 the Virginia Polytechnic Institute Post-War Planning Committee requested a brief summary of proposed post-war plans in Soil and Water Conservation Research. At

that time an outline of eight proposed studies was prepared and submitted to this planning committee. A copy of this outline was submitted to the Chief of Research on July 26. Since that time more and more requests for a research program on Orchard Conservation Practices has made it advisable to prepare a detailed project outline on this subject in order that it will be ready for immediate action when conditions permit expansion of the research program. Collection of pertinent background material is now under way. It is planned to summarize and work up a preliminary project outline sometime in February, 1945. Mr. John T. Bregger, In Charge Orchard Erosion Investigations, has volunteered assistance in this preparatory work.

Whenever possible, the Project Supervisor has been attending meetings of Soil Conservation Service Operations personnel in order to learn of and study the problems arising in that field. Such information will form the basis of future post-war planning activities.

A P P E N D I X A

VA-R-1-B-1-1-4

Determination of the Effect of Slope,  
Character of Soil, Rainfall, and Cropping Treatment  
on Erosion From Crop Land

1944

(Preliminary)

SLOPE	CROP	1 9 4 3	1 9 4 4*	8 Year Avg.
5	Corn	23.73 Tons	0.30 Tons	5.08 Tons
	Wheat	0.43 "	1.26 "	0.60 "
	Clover	0.07 "	0.03 "	0.02 "
10	Corn	54.63 Tons	0.40 Tons	10.61 Tons
	Wheat	0.46 "	2.50 "	1.59 "
	Clover	0.06 "	0.06 "	0.06 "
15	Corn	71.98 Tons	2.32 Tons	15.96 Tons
	Wheat	0.51 "	1.77 "	0.96 "
	Clover	0.06 "	0.02 "	0.02 "
20	Corn	75.12 Tons	5.17 Tons	16.57 Tons
	Wheat	0.14 "	1.69 "	0.54 "
	Clover	0.15 "	0.00 "	0.03 "
25	Corn	94.86 Tons	4.95 Tons	22.19 Tons
	Wheat	0.17 "	1.58 "	0.87 "
	Clover	0.07 "	0.00 "	0.01 "

\*Preliminary

TABLE I - SUMMARY OF SOIL LOSSES ON BASIS OF ANNUAL YEAR

JANUARY 1 - DECEMBER 31, 1944

BLACKSBURG, VIRGINIA

SLOPE	CROP	1943	1944*	8 Year Avg.
5	Corn	6.1876 Inches	.4657 Inches	1.8211 Inches
	Wheat	.3320 "	2.9886 "	.9332 "
	Clover	.5969 "	.3445 "	.1777 "
10	Corn	7.9956 Inches	2.4106 Inches	2.4106 Inches
	Wheat	1.7341 "	3.9650 "	2.8133 "
	Clover	3.9608 "	.3181 "	.9599 "
15	Corn	7.8055 Inches	.5434 Inches	2.1236 Inches
	Wheat	1.9954 "	1.3394 "	1.0425 "
	Clover	.6187 "	.5635 "	.1618 "
20	Corn	8.7245 Inches	.7523 Inches	2.4177 Inches
	Wheat	1.6388 "	3.2274 "	.9676 "
	Clover	2.8674 "	.4719 "	.4824 "
25	Corn	7.5965 Inches	.6908 Inches	2.5605 Inches
	Wheat	1.0326 "	2.2611 Inches	1.1122 "
	Clover	.5227 "	.4337 "	.1329 "

\*Preliminary

TABLE II - SUMMARY OF WATER LOSSES ON BASIS OF ANNUAL YEAR

JANUARY 1 - DECEMBER 31, 1944

BLACKSBURG, VIRGINIA

A P P E N D I X B

VA-R-1-B-1-2-4

Determination of the Practicability of  
Contour Furrows for Control of Erosion on  
Permanent Pastures of Virginia

1944

Treatments	1942				1943				1944			
	No. Rains	Total Rain-fall	In. of Rain-fall	% Run-off	No. Rains	Total Rain-fall	In. of Rain-fall	% Run-off	No. Rains	Total Rain-fall	In. of Rain-fall	% Run-off
Untreated	16	16.02	3.66	7.62	11	13.77	6.32	15.30	3	4.87	1.48	30.39
Fertilized	16	16.02	5.25	11.26	11	13.77	7.58	18.35	3	4.87	2.48	50.99
Furrowed	16	16.02	0.67	1.40	11	13.77	2.82	6.81	3	4.87	0.59	12.18
Fert. & Furr.	16	16.02	0.58	1.22	11	13.77	1.66	4.01	3	4.87	0.33	6.77

TABLE I - YEARLY RUNOFF FROM PASTURE PLOTS

Treatment	Total No. of Rains Causing Runoff	Total Inches of Rainfall Causing Runoff	Total In. of Runoff	Percent of Rainfall That Ran off
Untreated	30	34.66	11.46	33.06
Fertilized	30	34.66	15.31	44.17
Furrowed	30	34.66	4.08	11.77
Fert. & Furr.	30	34.66	2.57	7.41

TABLE II - THREE YEAR SUMMARY OF PASTURE PLOT RUNOFF

A P P E N D I X   C

VA-R-2-B-2-2

To Determine Rates and Amounts of  
Runoff From Small Watersheds in the  
Allegheny Mountain Plateau Runoff  
Problem Area in Virginia

1944

To Determine the Rates and Amounts  
of Runoff from Small Watersheds Typical  
of the Piedmont Tobacco Runoff Problem Area in Region II

DATE	RAINFALL				RUNOFF				: ANTECEDENT RAINFALL DATE	: RUNOFF COEF. FOR 15 M. RAINFALL RATE: "C"	: CROP, COVER & SOIL CONDITIONS	
	: INTENSITY FOR				: VOLUME: MAXIMUM RATE							
	: VOLUME : 5 M	: 10 M	: 15 M	: 30 M	: VOLUME :	: MAXIMUM RATE :	: CFS	: CFS/AC.				: INCHES :
: INCHES :	: INCHES PER HOUR				: INCHES :	: CFS/AC.		: INCHES :	: INCHES :	: RAINFALL RATE :		
<u>W-II</u>												
May 24	2.68	3.00	2.64	2.36	1.96	.4468	5.72	1.051	5/21	.05	.445	See Cover and Tillage Map 2.
June 23	1.91	2.16	1.50	1.04	1.12	.0505	1.08	.198	6/19-20	.08	.190	
<u>W-III</u>												
May 24	2.68	3.00	2.64	2.36	1.96	.2140	10.59	.549	5/21	.05	.233	See Cover and Tillage Map 2.
June 23	1.91	2.16	1.50	1.04	1.12	.0284	.25	.013	6/19-20	.08	.012	

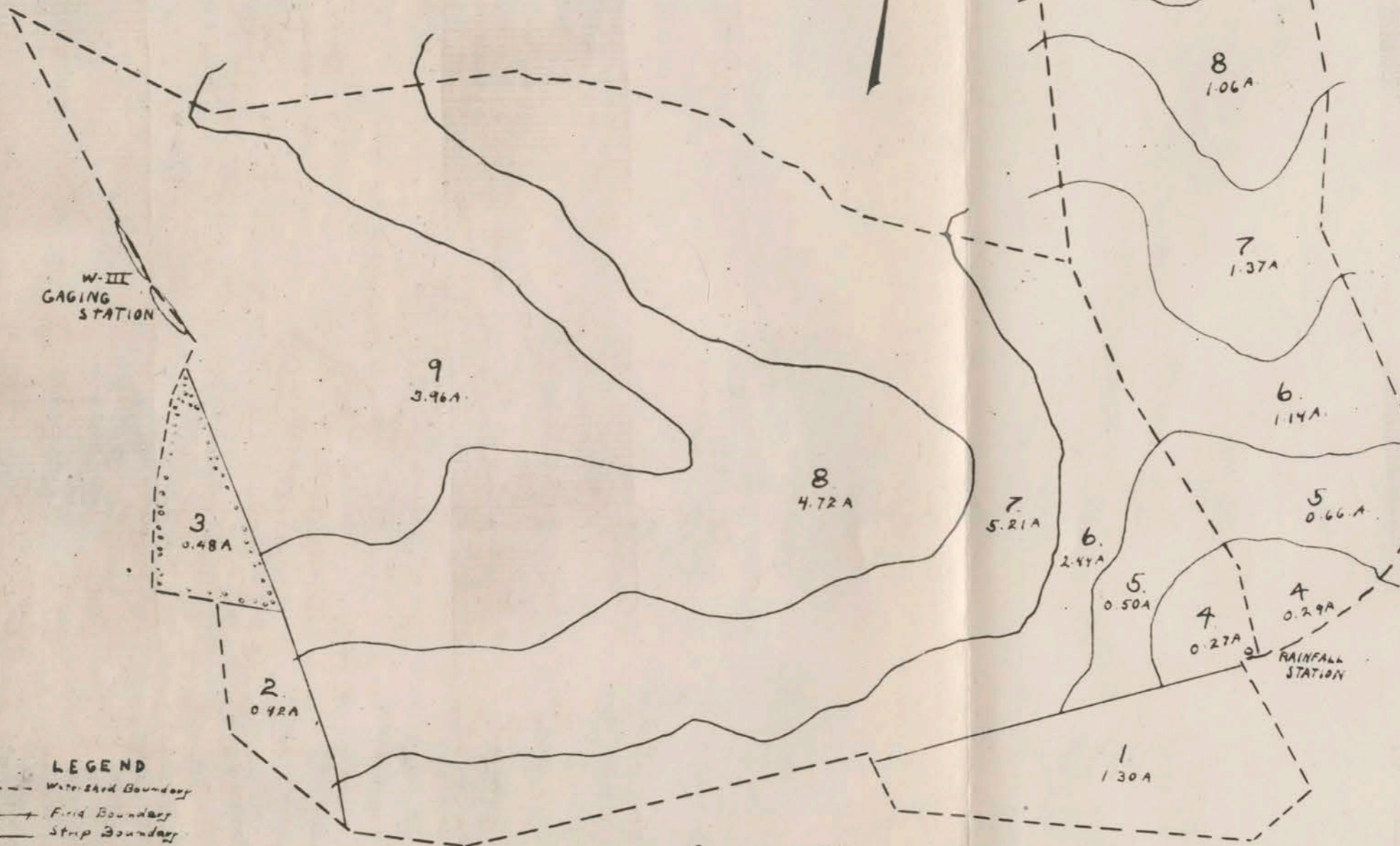
W-II Watershed Characteristics: Area 5.44 A., Dunmore Silt Loam 5.14 A., Emory Silt Loam 0.3 A., Prevailing slope 6-10%, waterway 600 feet, 6%, Strip cropped.

W-III Watershed characteristics: Area 19.3 A., Dunmore Silt Loam - 17.3 A., Emory Silt Loam-1.20 A., Dunmore Clay Loam - 0.8 A., Prevailing Slopes 3%, 5%, 13%. Waterway 1,400 feet, Average slope 4.6%, strip cropped.

TABLE I - SUMMARY OF OUTSTANDING RUN-OFF PERIODS FOR WATERSHEDS W-II AND W-III, BLACKSBURG, VIRGINIA  
FOR THE CALENDAR YEAR 1944

**Acreage Summary**

Field	W-II	W-III
1	-	30 Acres
2	-	0.42
3	-	0.48
Strip 4	0.24 Acres	0.27
5	0.46	0.50
6	1.14	2.44
7	1.37	5.21
8	1.06	4.72
9	0.92	3.96
Total	5.44	17.30



**Field Notes**

Date	7	8	9	Remarks
4/3	Plowed	Wheat 6" high	Plowed	
4/21	Discd Corn		Discd Corn	
5/1	Planted Corn	12" high	Planted Corn	
5/15	Sprouted Corn		Sprouted Corn	
5/20	Weeded		Weeded	
5/29	Corn 6"	Wheat heading	6"	
6/9	Cultivated		Cultivated	
6/30	"	Harvested	"	
8/21	Cut for Silo	Lespedeza	Cut for Silo	
9/18	Discd & Clover	growing	Discd Wheat	
10/9	Seeded		Seeded	
10/23	Coming up		Coming up	
11/2	No Change	Weeds Clipped	No	
12/30	No Change	No Change	No change	

Date	7	8	9	Remarks
4/3	Hay	Plowed	Wheat 6" high	
4/21		Discd Corn		
5/1		Planted Corn		
5/15		Sprouted Corn		
5/20		Weeded Corn		
5/29		Corn 6"		
6/9		Cultivated		
6/30	Mowed	"	Harvested	
8/21		Cut for Silo	Lesp. & Clover	
9/18		Discd	Coming up	
10/9		Wheat Sowed		
10/23		Wheat up		
11/2		" "	Weeds Clipped	
12/30	No Change	No change	No change	

**Cropping Plan**

Year	1	2	3	4	5	6	7	8	9
1943	Past.	Past	Woods	Barley	Barley	Oats	Bar. & Corn	Corn	Oats
1944	"	"	"	Corn	Wheat	Corn	Hay	Corn	Wheat
1945									
1946									
1947									
1948									
1949									
1950									

Cover + Tillage Map  
W-II + W-III  
Blacksburg, Virginia  
Map No. 2

KEUFFEL & ESSER CO., N. Y. NO. 359-137L  
Six months by days, Jan. to June.  
182 days x 50 (10 per line) inches.  
MADE IN U.S.A.

Daily Precipitation and Runoff in Inches

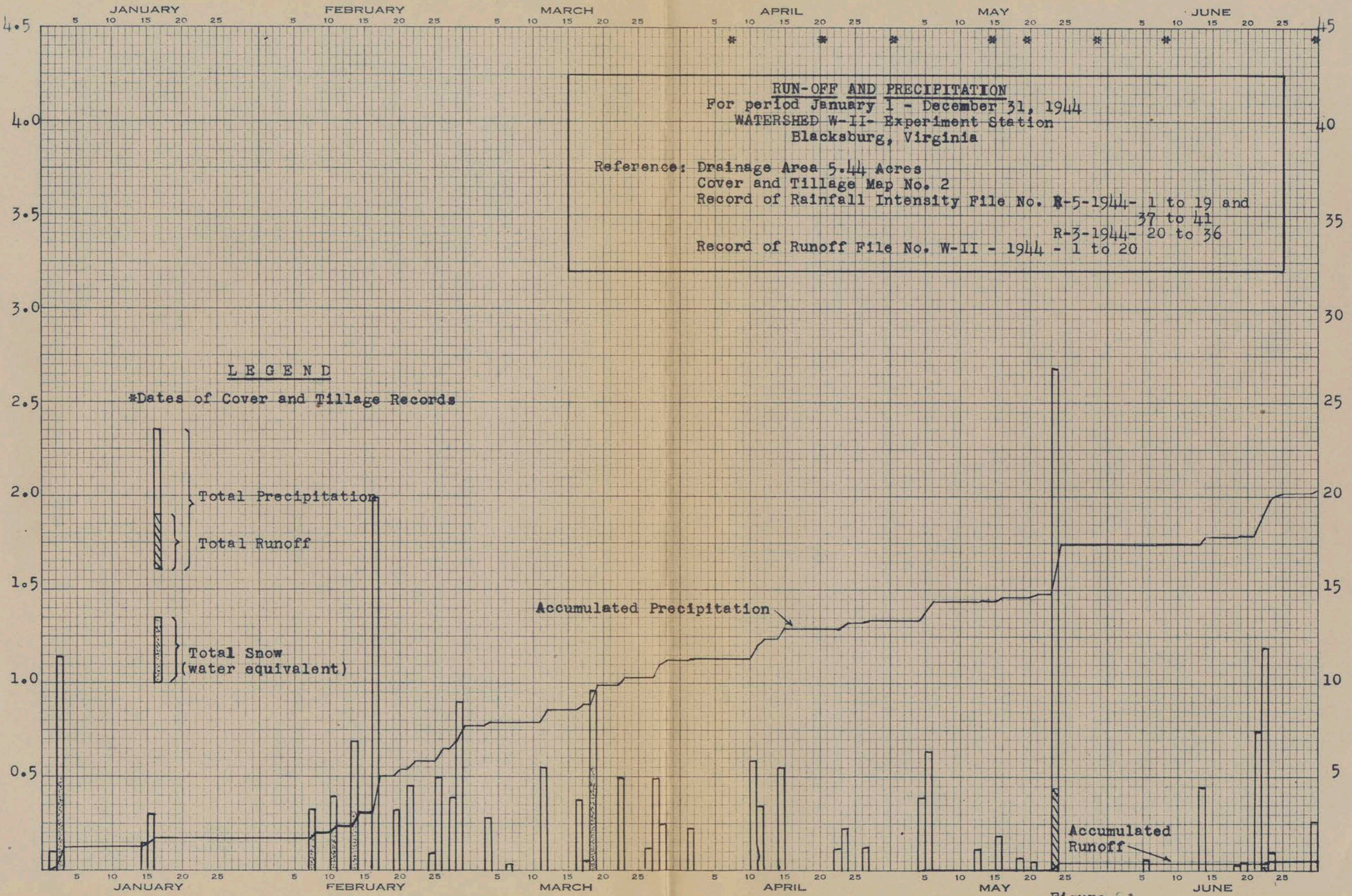
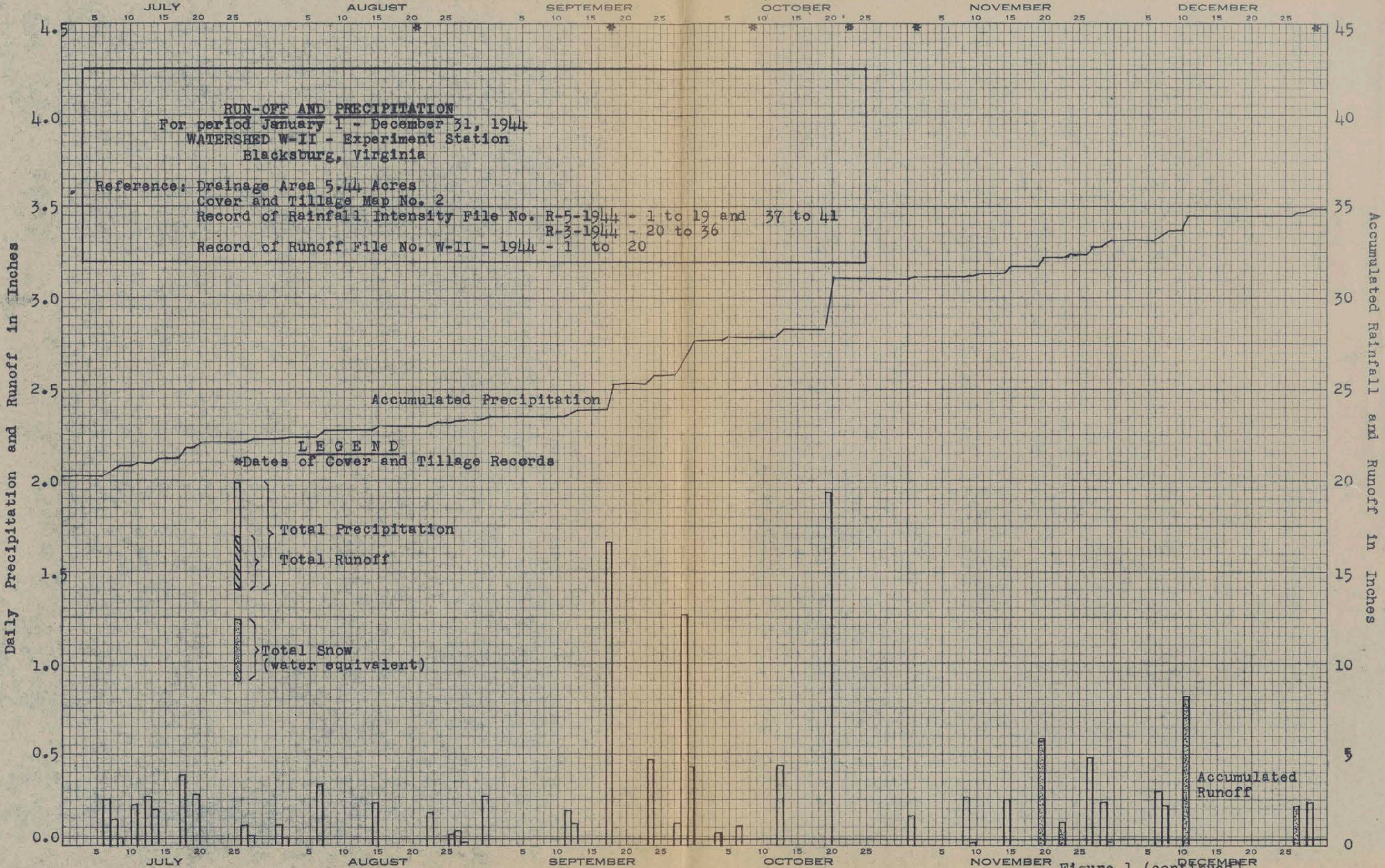


Figure 1  
Sheet 1 of 2 Sheets



KEUFFEL & ESSER CO., N. Y. 350-1261  
 Six months by Day, July 1944  
 181 days x 50 (10 per unit)  
 MADE IN U. S. A.

Figure 1 (continued)

KEUFFEL & ESSER CO., N. Y. NO. 359-1371  
 Six months by days, Jan. to June,  
 182 days x .90 (10 per inch)  
 MADE IN U. S. A.

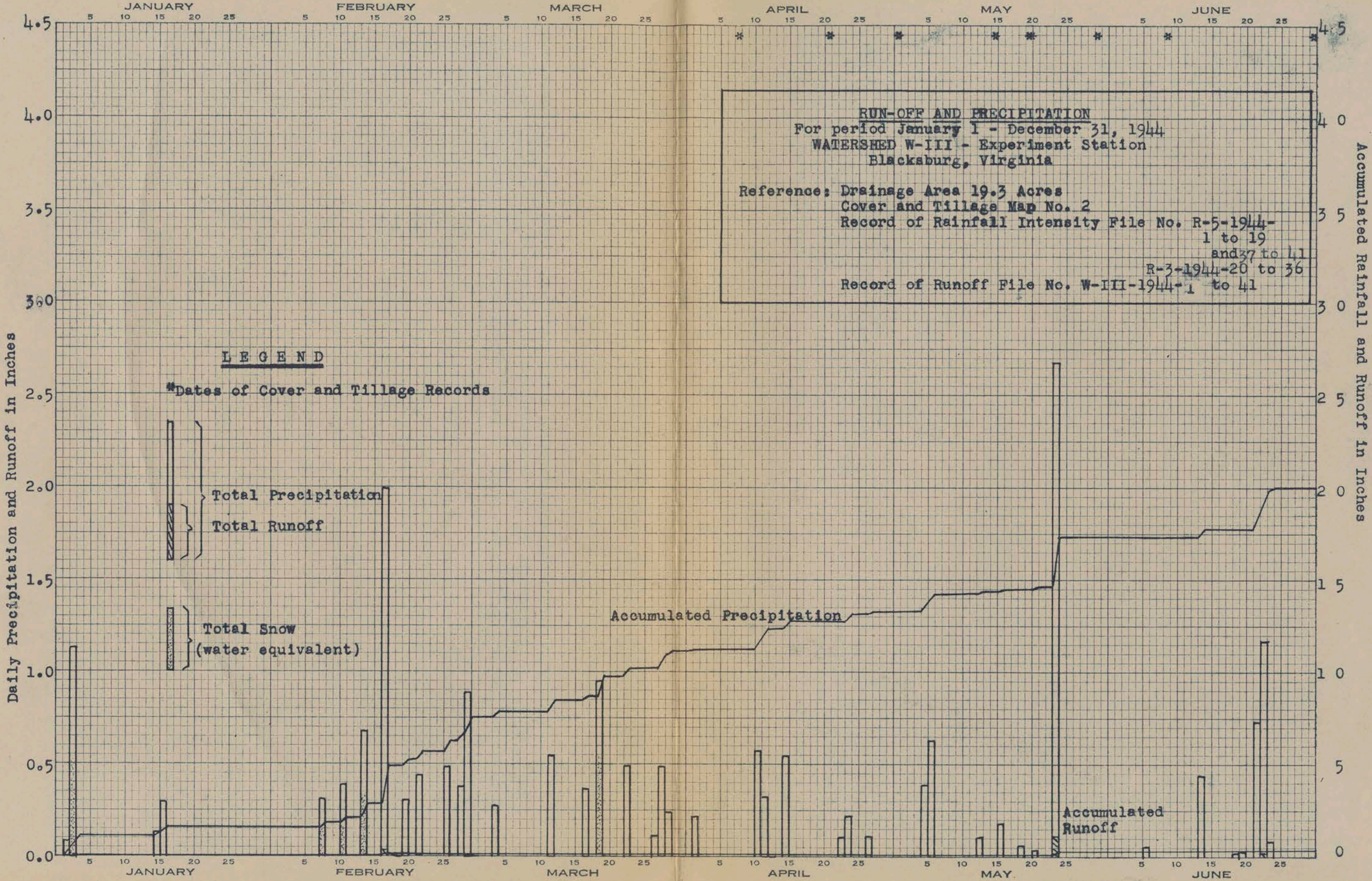


Figure 2  
 Sheet 1 of 2 Sheets

REVUEL & ESSER CO. N.Y. NO. 10, 10-1-10  
 100 months by base daily  
 100 days - 100 per unit  
 MADE IN U.S.A.

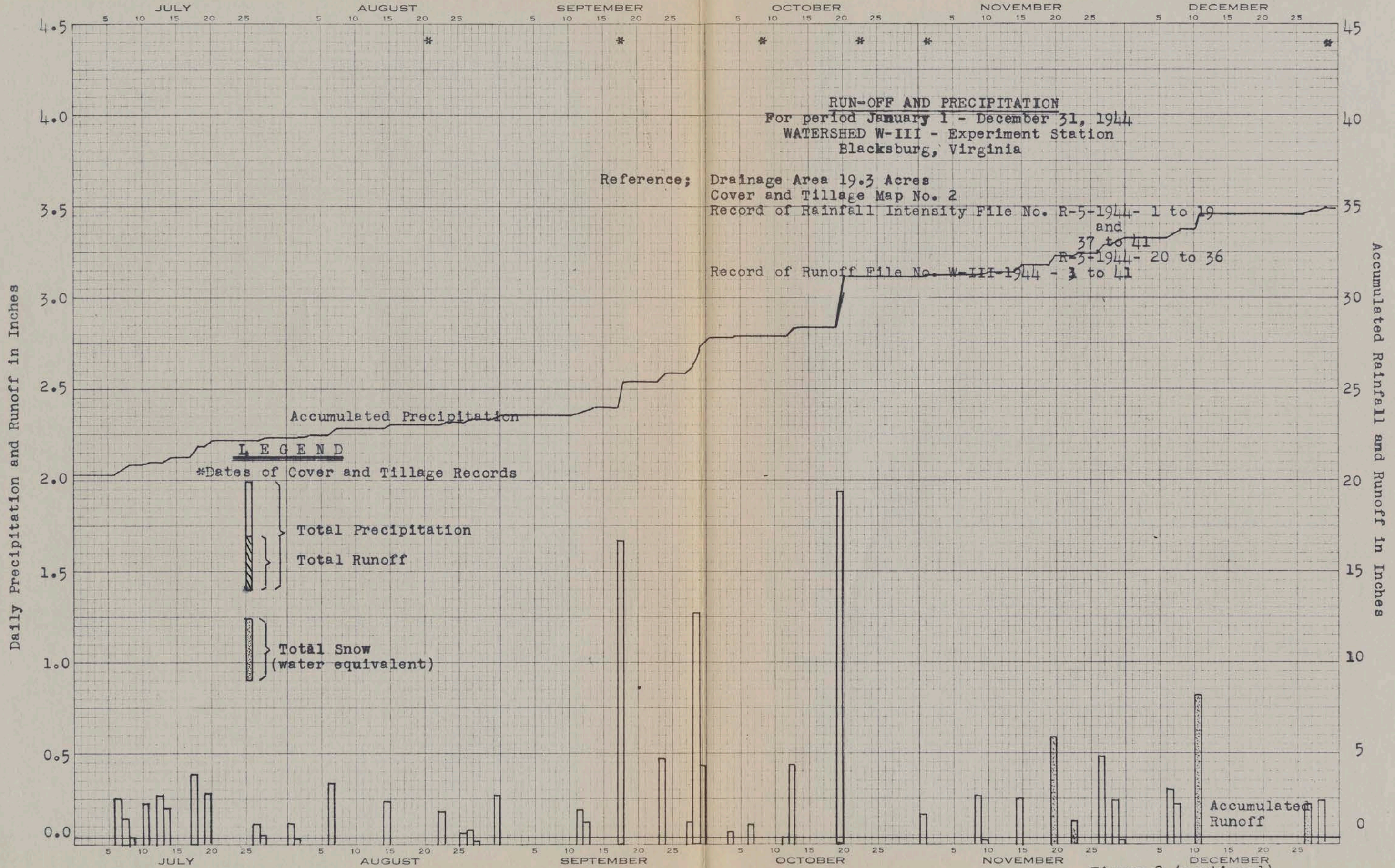
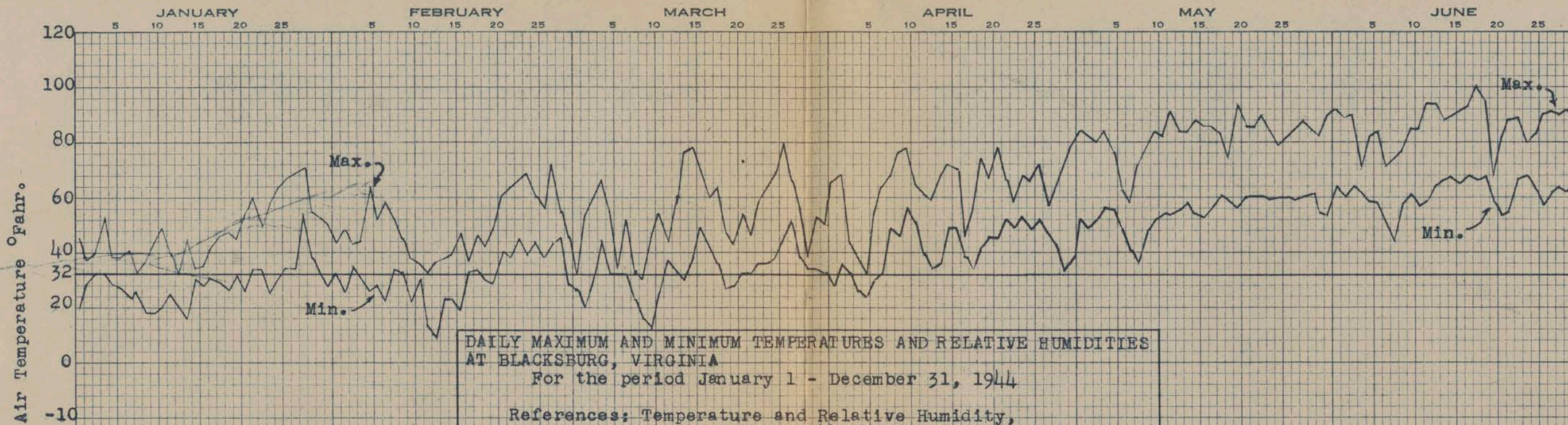


Figure 2 (continued)  
 Sheet 2 of 2 Sheets



DAILY MAXIMUM AND MINIMUM TEMPERATURES AND RELATIVE HUMIDITIES  
 AT BLACKSBURG, VIRGINIA  
 For the period January 1 - December 31, 1944  
 References: Temperature and Relative Humidity,  
 Chart Nos. 1944 - 1-52

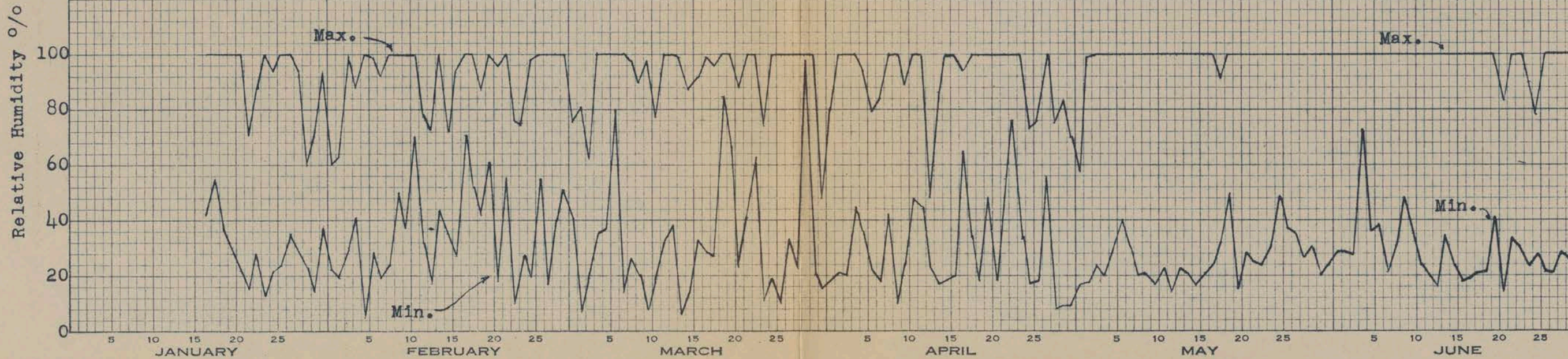


Figure No. 3  
 Sheet 1 of 2 Sheets

KEUFFEL & ESSER CO., N. Y. 159-137L  
 Six months by days, 1/2" x 1/2" days x 90 (10 per inch)  
 MADE IN U.S.A.

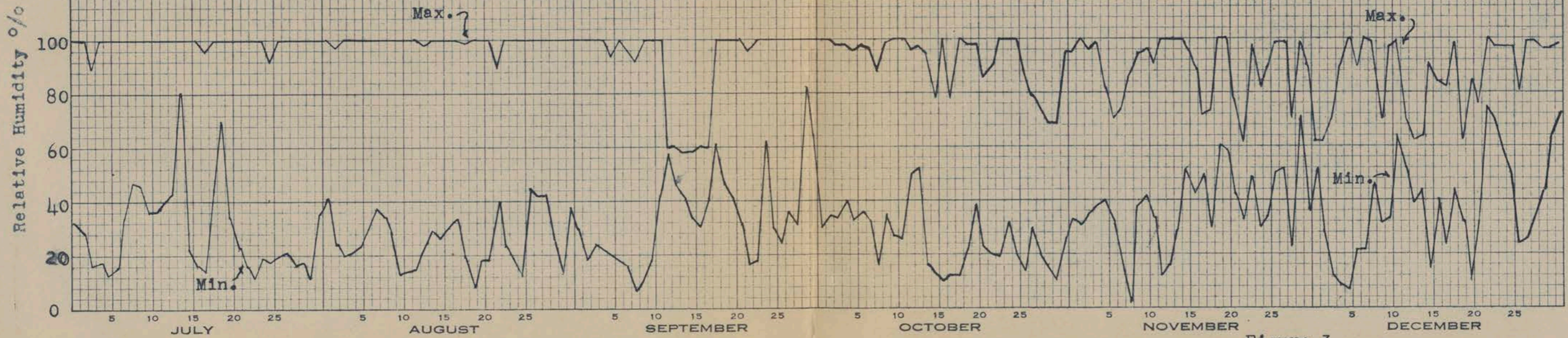
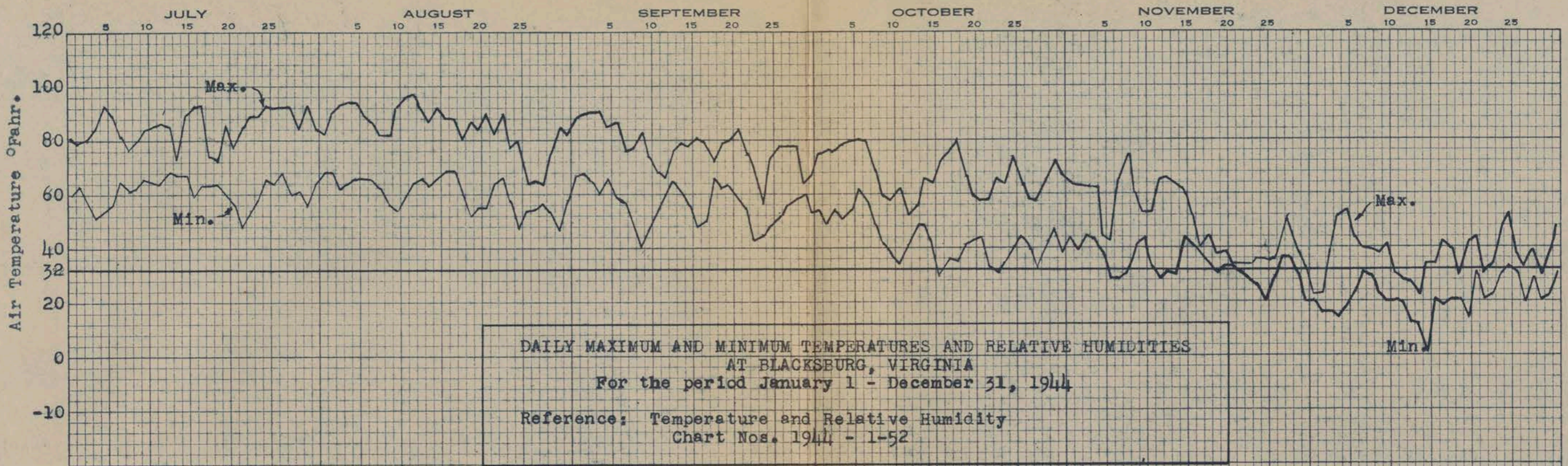
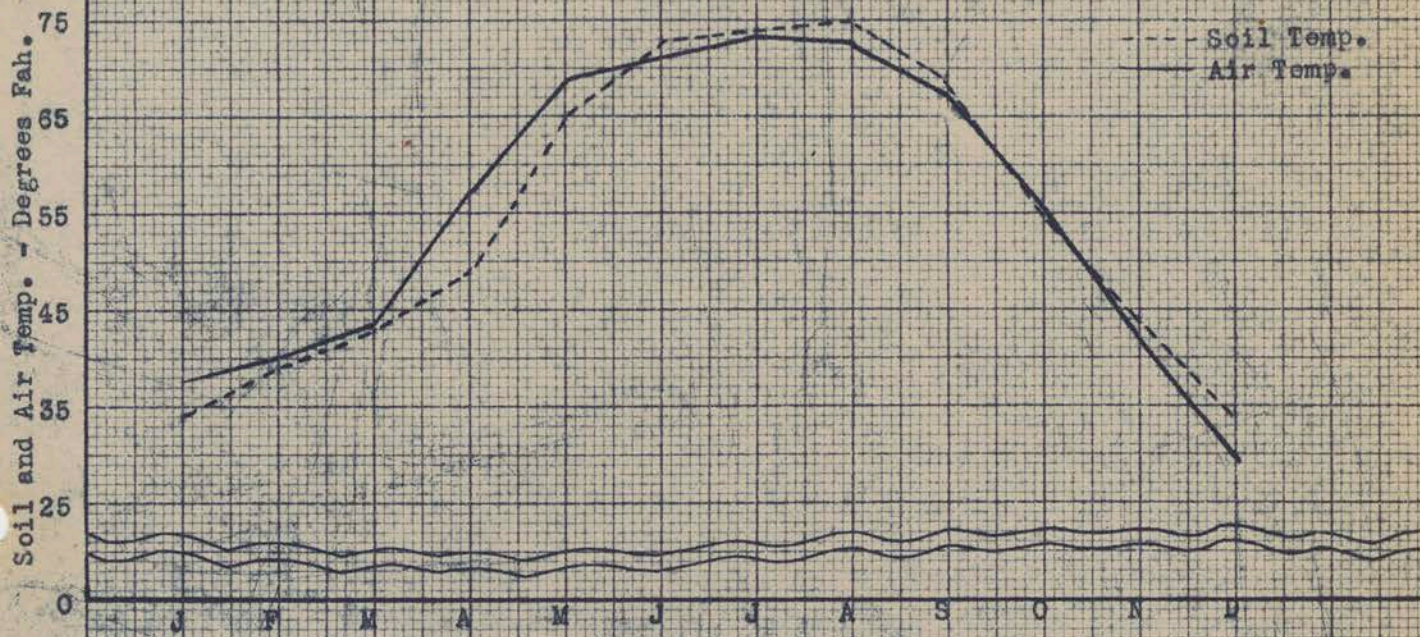


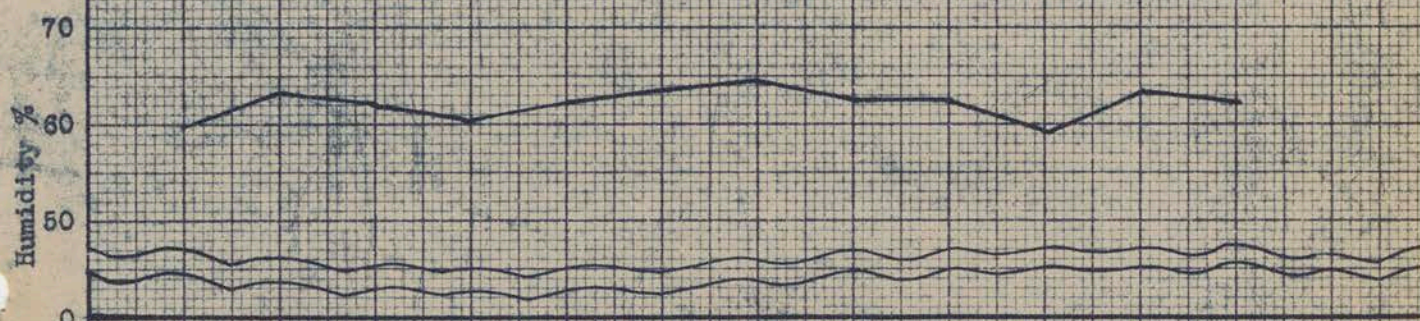
Figure 3  
 Sheet 2 of 2 Sheets

KEUFFEL & ESSER CO., N. Y. NO. 365-1381  
 Six months by Days, July  
 184 days x 50 100 per unit  
 MADE IN U. S. A.

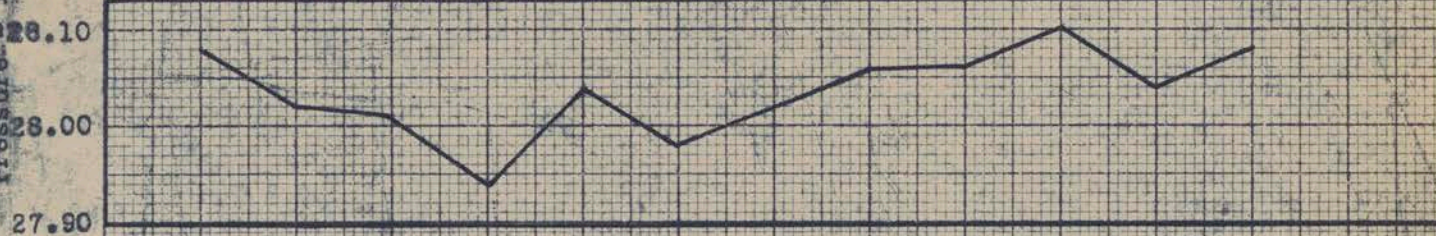
CLIMATIC SUMMARY - BLACKSBURG, VIRGINIA - 1944



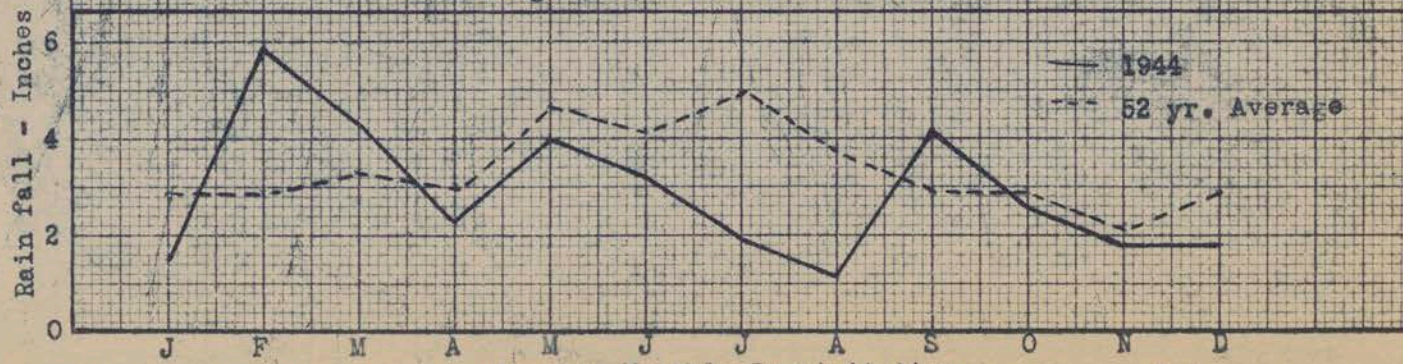
Average air and soil temperature by months



Average humidity by months



Average barometric pressure by months



Average Monthly Precipitation

Figure 3 A

KEUFFEL & ESSER CO., N. Y. NO. 3504-11  
 3 1/2 x 5 1/2 in. to the inch, 2 1/2 in. heavy.

DATE	R A I N F A L L					R U N O F F				: ANTECEDENT : : RAINFALL :	: RUNOFF COEF. : : FOR 15 M. :	: CROP, COVER & SOIL : : CONDITIONS :	
	: VOLUME : : INCHES :	: INTENSITY FOR :				: VOLUME : : INCHES :	: MAXIMUM RATE : : CFS :	: CFS/AC. :	: DATE : : INCHES :				: RAINFALL RATE : : "C" :
		: 5 M :	: 10 M :	: 15 M :	: 30 M :								
March 6-9	1.16	.48	.48	.48	.44	.1665	.403	.030	3/4	.44	.06	See Cover and Tillage	
March 29-31	1.76	.36	.30	.24	.24	.1986	.168	.013	3/27	.36	.05	Map 7 A.	
May 24-26	2.37	5.04	3.84	3.36	2.16	.2163	2.253	.169	5/21	.04	.05		
June 30	1.32	5.76	4.68	4.00	2.44	.1322	2.304	.173	6/22-23	.07	.04		
July 13-14	1.58	3.36	2.64	2.00	2.12	.2010	2.920	.220	7/8-9	1.13	.11		
Sept. 12-13	4.50	3.60	3.24	2.48	1.80	.7054	1.382	.104	9/11	.06	.04		
Sept. 18-23	10.07*	4.56	2.76	2.88	2.52	6.5979	27.313	2.054	9/12-13	4.50	.71		
Sept. 29- Oct. 2	3.58	1.08	.96	.80	.66	.7874	1.344	.101	9/24	.08	.13		

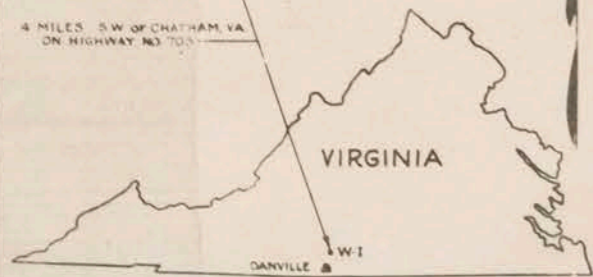
\* U. S. W. B. G.

W-I Watershed Characteristics: Acreage 13.3 A. Prevailing slopes 7%, 12%; 71% Madison very fine sandy loam, 14% Madison clay loam, 15% Louisa clay loam and Louisa very fine sandy clay loam. Terraced.

TABLE II - SUMMARY OF OUTSTANDING RUNOFF PERIODS FOR WATERSHED W-1, DANVILLE, VIRGINIA

LONGITUDE 75°-25' W (APPROXIMATE)  
 LATITUDE 36°-45' N

4 MILES S.W. OF CHATHAM, VA.  
 ON HIGHWAY NO. 703



LOCATION MAP

COVER AND TILLAGE MAP FOR PERIOD BEGINNING, 1/1/44 ENDING, 12/31/44

WATERSHED CHARACTERISTICS

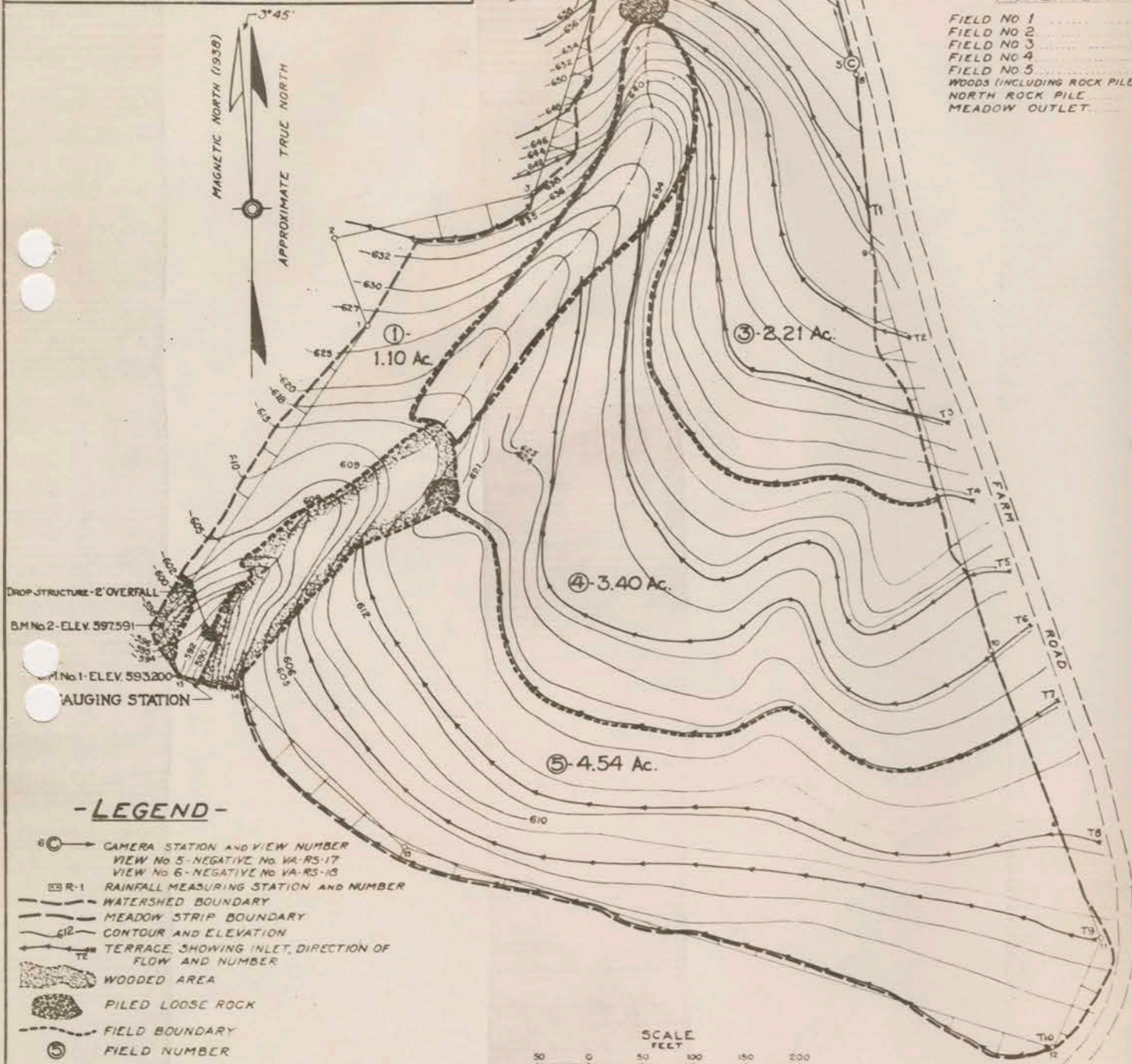
1. SIZE 13.3 ACRES, .0206 SQUARE MILE
2. RANGE IN ELEVATION FROM 590 FT TO 668 FT (APPROX. M.S.L.)
3. PREVAILING LAND SLOPES 7% - 12%
4. RANGE IN LAND SLOPES FROM 2% TO 20%
5. LENGTH OF PRINCIPAL WATERWAY FEET
6. AVERAGE SLOPE OF PRINCIPAL WATERWAY %
7. TOTAL NUMBER OF WATERWAYS
8. NUMBER OF ACRES PER WATERWAY
9. TOTAL LENGTH OF WATERWAYS FEET
10. DRAINAGE DENSITY (LENGTH OF WATERWAYS PER ACRE) FT./ACRE
11. FORM FACTOR, A/L<sup>2</sup>
12. AREA OF WOODS 0.96 ACRE

-ACREAGE SUMMARY-

FIELD NO	ACRES
FIELD NO 1	1.10
FIELD NO 2	0.94
FIELD NO 3	2.21
FIELD NO 4	3.40
FIELD NO 5	4.54
WOODS (INCLUDING ROCK PILE IN THESE WOODS)	0.96
NORTH ROCK PILE	0.03
MEADOW OUTLET	0.62
<b>TOTAL</b>	<b>13.30</b>

COVER AND TILLAGE CONDITIONS

DATE	FIELD No.1	FIELD No.2	FIELD No.3	FIELD No.4	FIELD No.5
1/1	Lespedeza Weeds 90% C	Rye 3" high	Hay 75% Cov.	Crimson clover 1' h. Hay 90% cover	Hay 75% cover
1/27	"	"	"	"	Plowed
2/25	"	"	"	2" high	discd
3/4	"	"	"	3" "	bare
4/3	Fenced for pasture	"	"	90% cover	"
4/26	100% C Pasture	Plowed	Lesp. Hay 1" high	1' high	Harrowed & sowed to soy beans
5/13	100% Pasture	Bare	"	Clover mowed up	Beans coming
5/22	90% Pasture	Listed	" 90% C stubble	90% C stubble	Beans 1" high 30% cover Beans 3" high 80% cover
5/25	"	Tob. planted	" 100% C	"	"
5/27	"	"	"	Plowed	"
6/12	"	Tob. 6" high	Lesp. 6" high	Corn planted high	Beans 6" high
6/26	"	Cultivated	"	Corn 6" high	Beans 12" high
7/10	"	Tob. 13" high	Hay matured 100% cover	Corn 10" high	Beans 16" high
8/7	"	Tob. rows no cover	"	Corn 10" high by	Beans 2" high
9/19	" 90% C	Tob. no cover	"	& Crabb grass cut corn 35% C	cut-raked in piles 25% cover
10/7	"	"	Mowed	Corn cut	"
10/13	"	"	Hay stubble	"	"
11/6	"	Sowed to small grain	Sowed to small grain	Sowed to small grain	Sowed to small grain
12/31	"	Small grain 3" high	Small grain 3" high	Small grain 3" high	Small grain 3" high



-LEGEND-

- 6C → CAMERA STATION AND VIEW NUMBER  
VIEW No 5 - NEGATIVE No VA-RS-17  
VIEW No 6 - NEGATIVE No VA-RS-18
- R-1 → RAINFALL MEASURING STATION AND NUMBER
- → WATERSHED BOUNDARY
- → MEADOW STRIP BOUNDARY
- 612 → CONTOUR AND ELEVATION
- TE → TERRACE, SHOWING INLET, DIRECTION OF FLOW AND NUMBER
- → WOODED AREA
- → PILED LOOSE ROCK
- → FIELD BOUNDARY
- 5 → FIELD NUMBER



NOTE: -ALL OTHER SYMBOLS ARE THOSE ADOPTED BY THE U.S. BOARD OF SURVEYS AND MAPS.

CROPPING PLAN

CROP YEAR	FIELD No. 1	FIELD No. 2	FIELD No. 3	FIELD No. 4	FIELD No. 5
1938	IDLE	RED TOP	WIMOTHY, RED CLOVER, RED TOP	ALFALFA	LESPEDEZA
1939	lesp. & oats	Tobacco	Corn	Corn	Corn
1940	lesp.				cannot find in records
1941	lespedeza	Wheat to clover	Lesp. Hay	lesp. Hay	Wheat to clover
1942	Corn	Soya Beans	Corn	Peas	Clov. - Lesp. Hay
1943	lespedeza	lesp. hay	lesp. hay	wheat to cl.	Clov. - lesp. hay
1944	Pasture	tabacco	"	corn	soya beans
1945					
1946					
1947					
1948					
1949					
1950					
1951					
1952					
1953					
1954					
1955					

Cover & Tillage Map  
 W-I-1944-7A

COVER AND TILLAGE MAP  
 WATERSHED W-I (A.H. EASLEY)  
 DANVILLE, VIRGINIA REGION 2  
 U.S. DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 H.H. BENNETT, CHIEF  
 REFERENCE COOPERATOR'S AGREEMENT: DANVILLE, 1944  
 SURVEYED BY: W.T. DICKERSON, JR. DATE: SEPT. 1938  
 SUBMITTED: O.W. CARDWELL DATE: 7-7-39  
 COMPILED, TRACED, CHECKED: DATE: 7-7-39 DRAWING NO: 28-5786

KEUFFEL & ESSER CO., N. Y. NO. 359-137L  
Six months by days, Jan. to June.  
1 1/2 days x 9" (10 per inch)  
MADE IN U. S. A.

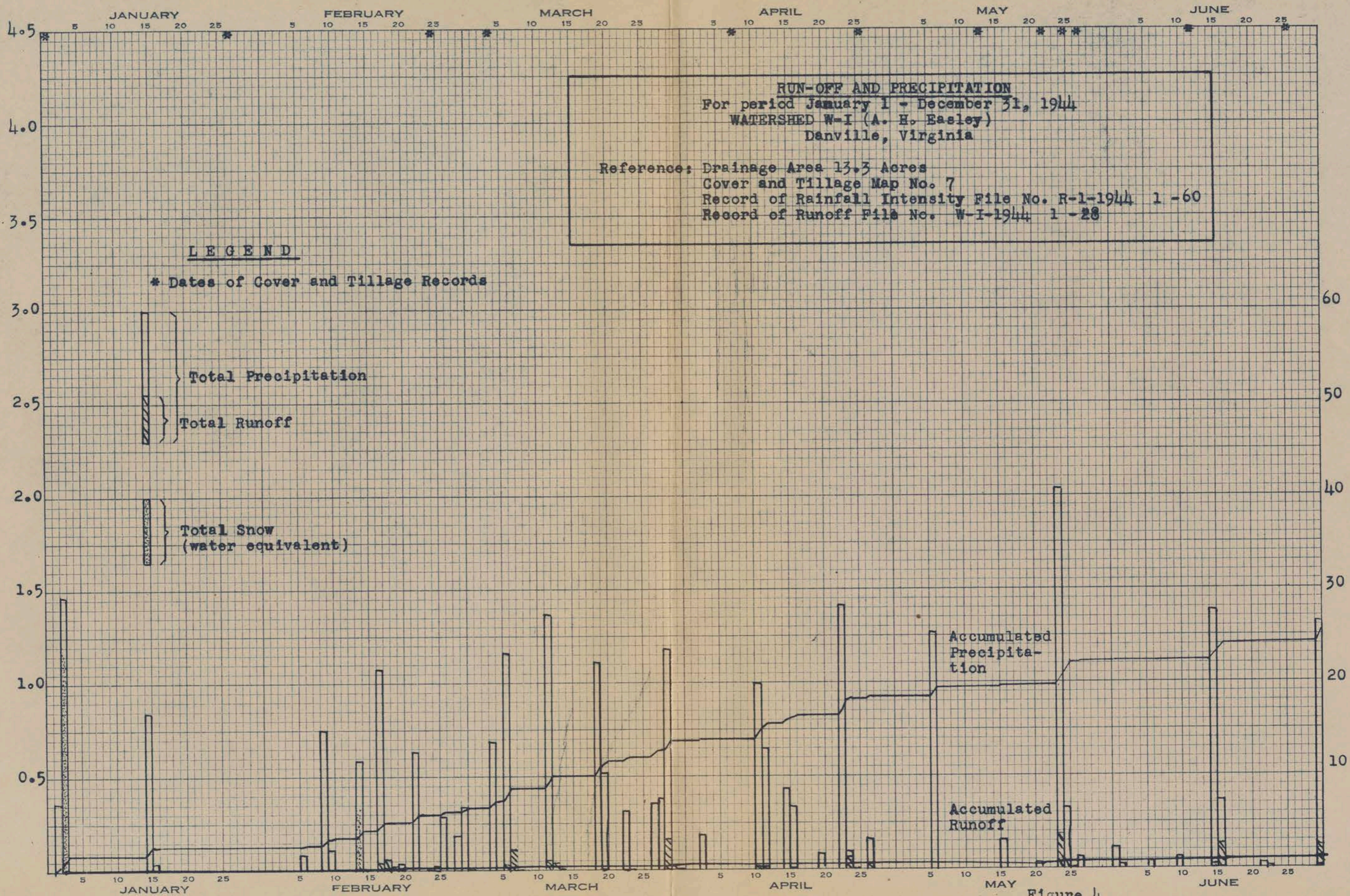
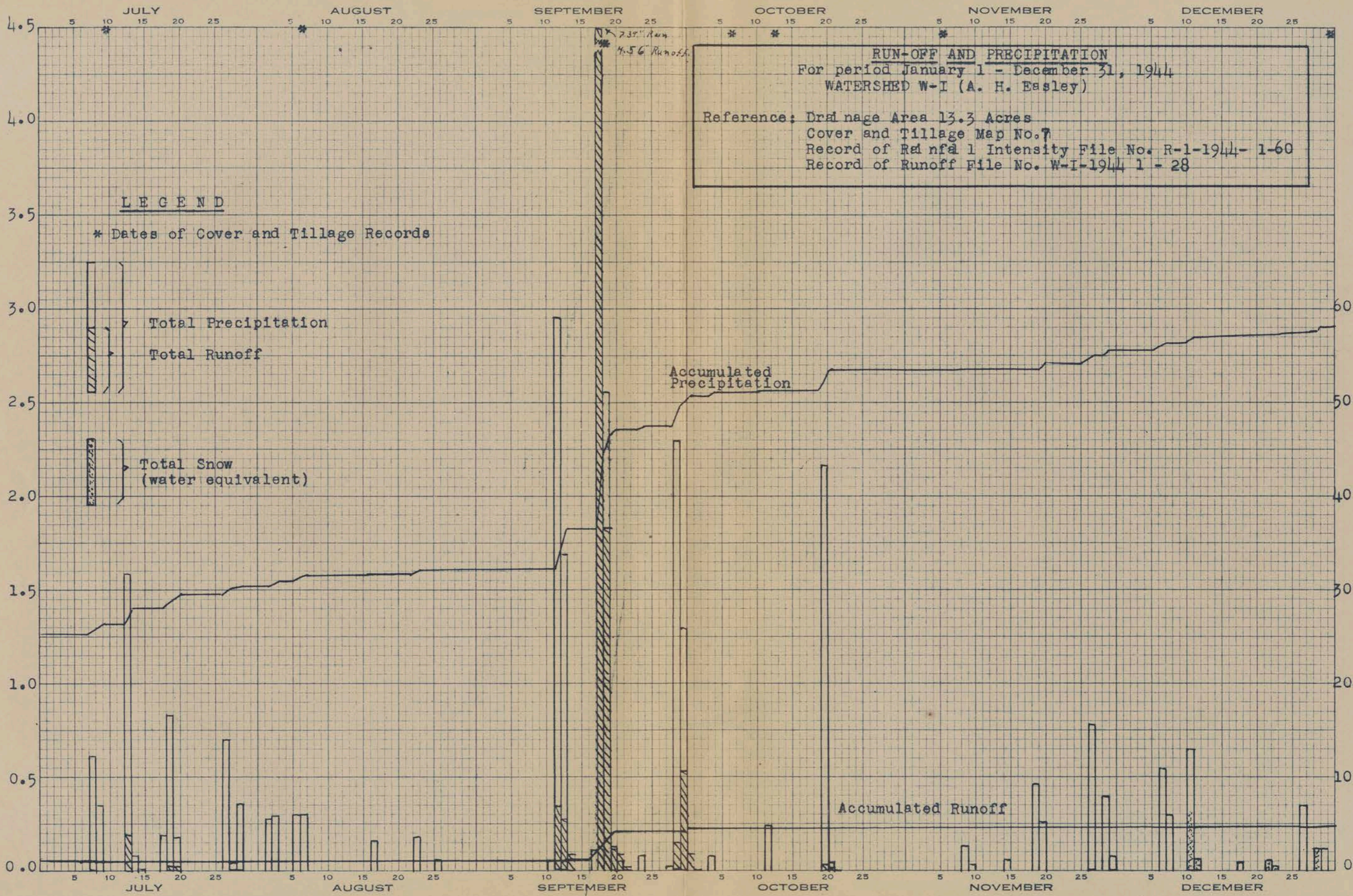


Figure 4  
Sheet 1 of 2 Sheets



KEUFFEL & ESSER CO., N. Y. NO. 359-1381  
 Six months by Days, July  
 184 days x 90 (16 per unit)  
 MADE IN U.S.A.

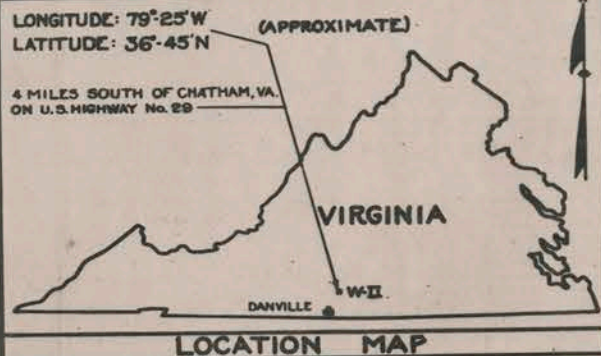
Figure 4  
 Sheet 2 of 2 Sheets

DATE	RAINFALL					RUNOFF			ANTECEDENT RAINFALL DATE	INCHES	:RUNOFF COEF. : FOR 15 M. : RAINFALL RATE: : "C"	CROP, COVER & SOIL CONDITION
	: VOLUME : INCHES	: INTENSITY FOR				: VOLUME : INCHES	: MAXIMUM RATE					
		5 M	10 M	15 M	30 M		: CFS	: CFS/AC				
March 6-9	1.12	.48	.42	.40	.32	.4282	.844	.052	3/4	.40	.13	See Cover and Tillage Map 7 B.
March 12-16	1.36	.60	.36	.40	.32	.3652	.913	.057	3/6	1.12	.14	
March 28- Apr. 2	1.68	.48	.36	.24	.24	.7951	.889	.055	3/27	.40	.23	
April 11-14	1.97	1.68	.84	.64	.40	.4920	1.899	.118	4/3	.20	.18	
Apr. 24-27	2.16	1.92	1.92	1.44	1.08	.7662	4.937	.307	4/20	.12	.21	
May 24-25	2.56	3.12	2.16	1.72	1.44	.2990	3.822	.238	5/21	.10	.14	
June 30	1.04	4.32	3.48	3.20	2.08	.1657	3.979	.248	6/22-23	.06	.08	
July 19-20	1.22	5.52	4.08	3.92	2.44	.5665	11.295	.703	7/18	.26	.18	
Sept. 12-13	3.53	1.80	1.20	1.20	1.20	.3135	5.204	.324	9/11	.11	.27	
Sept. 18-22	10.24*	6.00	4.50	4.00	3.80	7.3435	52.400	3.263	9/12-13	3.53	.82	
Sept. 29 - Oct. 3	3.77°	.48 <sup>1</sup>	.48 <sup>1</sup>	.56 <sup>1</sup>	.48 <sup>1</sup>	1.0056	1.012	.063	9/25	.10	.11	
Oct. 20-21	2.24	.48	.48	.48	.40	.3054	.662	.041	10/12	.10	.08	

\* U. S. W. B. G.  
 ° Two Rains  
 1. First Rain

W-II Watershed Characteristics: 16.1 Acres, Prevailing slopes 5%, 6%, and 8%. Soil is 47% Mayodan sandy loam, 30% Granville sandy loam, 11% Cecil clay loam, 8% Appling sandy loam, and 6% Wadesboro clay loam. Terraced.

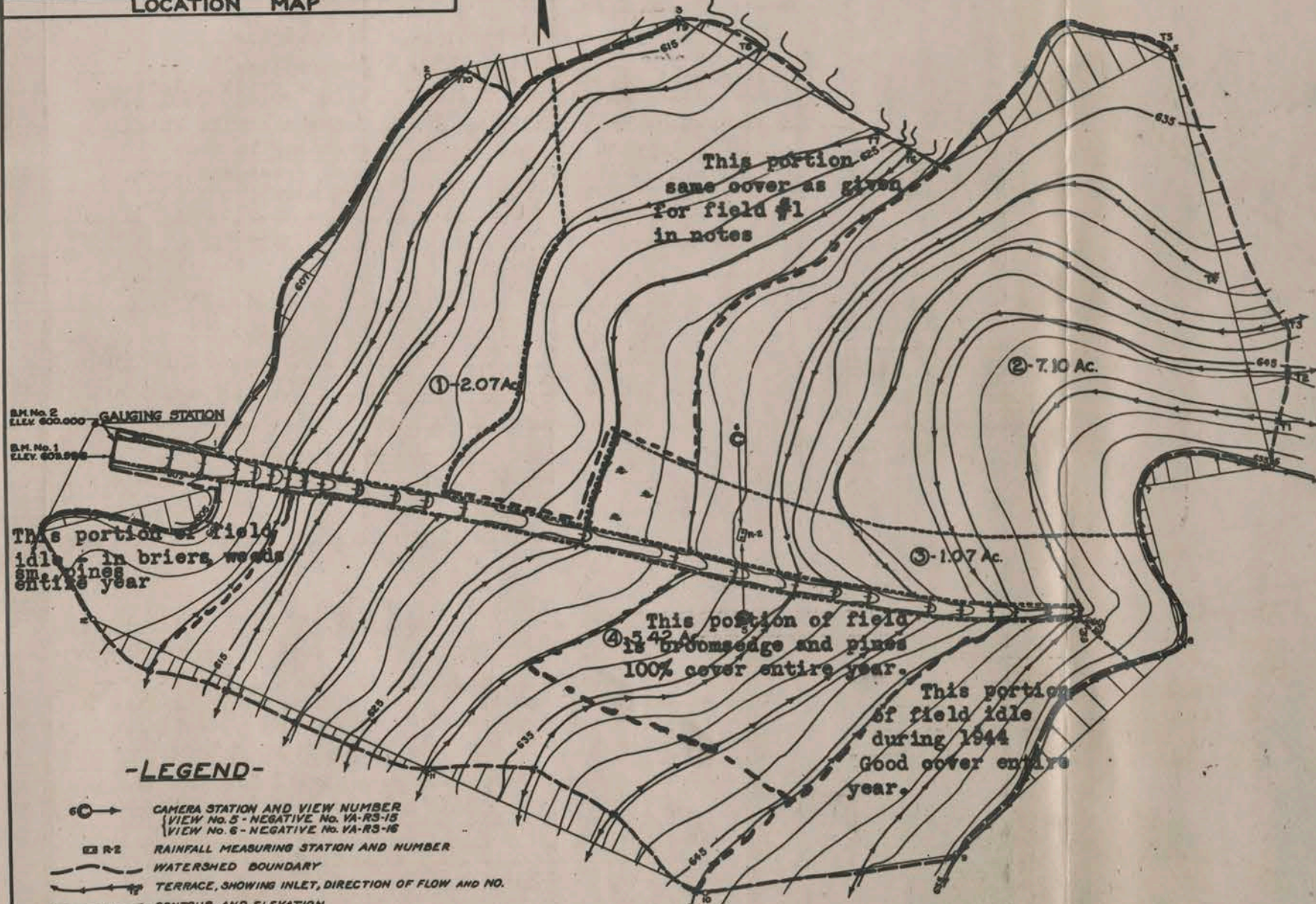
TABLE III - SUMMARY OF OUTSTANDING RUNOFF PERIODS FOR WATERSHED W-II, DANVILLE, VIRGINIA



COVER AND TILLAGE MAP FOR PERIOD BEGINNING, 1/1/44 ENDING, 12/31/44

COVER AND TILLAGE CONDITIONS

DATE	FIELD No. 1	FIELD No. 2	FIELD No. 3	FIELD No. 4
1/1	Hay less weeds 100%	Tobacco rows weeds no cover	Briers 100%	tobacco rows no cover
4/13	"	"	"	"
4/26	"	Logged & disc. No C.	"	logged & disc No cover
5/23	"	"	"	listed & tob. planted No cover
5/26	"	listed & planted No C.	"	Plowed & hoed
7/31	"	plowed & hoed	"	in top
8/2	"	1st pulling	"	1st pulling
8/28	"	2nd pulling	"	2nd pulling
9/19	less-weed hay harvested high 100% C. grass	100% C.	"	stalks still standing crab grass - 50% cover
12/31	uncut hay cut stalks 100% cover on ground-still in rows - crab grass 5% C.	"	"	Tobacco stalks still standing in rows crab grass and weeds 20% cover.



CROPPING PLAN

C-CORN; L-LESPEDEZA T-TOBACCO; W-WHEAT; ID-IDLE

CROP YEAR	FIELD No. 1	FIELD No. 2	FIELD No. 3	FIELD No. 4
1938	1.73 Ac. C, 0.34 Ac. L	4.54 Ac. T, 0.34 Ac. C, 2.34 Ac. ID	0.05 Ac. T, 1.02 Ac. ID	2.12 Ac. T, 3.30 Ac. ID
1939	1.07 C, 1.07 L	5.67 C, 0.34 C, 1.27 T	0.5 T, 1.02 ID	1.6 W, 2.0 T, 1.67 ID
1940	1.07 Peas, 1.07 L	2.47 T, 3.3 W, 3.10 ID	1.07 ID	2.05 W, 3.37 ID
1941	2.07 Corn	not in records	5.42 ID	4.6 Peas #2
1942	2.07 L	3.76 ID, 3.34 T	1.07 ID	2.52 T, 2.97 ID
1943	2.07 L	7.10 T	1.07 L	2.52 T, 2.97 ID
1944	2.07 L	3.76 ID, 3.34 T	1.07 ID	4.92 T, 5.10 ID
1945				
1946				
1947				
1948				
1949				
1950				
1951				
1952				
1953				
1954				
1955				

-LEGEND-

- ⊙ CAMERA STATION AND VIEW NUMBER  
 VIEW No. 5 - NEGATIVE No. VA-R3-15  
 VIEW No. 6 - NEGATIVE No. VA-R3-16
- ⊙ R2 RAINFALL MEASURING STATION AND NUMBER
- WATERSHED BOUNDARY
- TERRACE, SHOWING INLET, DIRECTION OF FLOW AND NO.
- 635 CONTOUR AND ELEVATION
- TERRACE OUTLET CHANNEL
- CONCRETE CHECK DAMS IN CHANNEL
- ⊙ TREES
- FIELD BOUNDARY
- ⑤ FIELD NUMBER



WATERSHED CHARACTERISTICS

1. SIZE 16.06 ACRES; 0.0281 SQUARE MILE
2. RANGE IN ELEVATION FROM 600 FT. TO 655 FT. (APPROX. M.S.L.)
3. PREVAILING LAND SLOPES: 8%, 6%, 5%
4. RANGE IN LAND SLOPE FROM 2% TO 13%
5. LENGTH OF PRINCIPAL WATERWAY: \_\_\_\_\_ FEET
6. AVERAGE SLOPE OF PRINCIPAL WATERWAY: \_\_\_\_\_ %
7. TOTAL NUMBER OF WATERWAYS: \_\_\_\_\_
8. NUMBER OF ACRES PER WATERWAY: \_\_\_\_\_
9. TOTAL LENGTH OF WATERWAYS: \_\_\_\_\_ FEET
10. DRAINAGE DENSITY (LENGTH OF WATERWAYS PER ACRE): \_\_\_\_\_ FT./ACRE
11. FORM FACTOR A/L<sup>1.5</sup>: \_\_\_\_\_

-ACREAGE SUMMARY-

FIELD No. 1	2.07 Ac.
FIELD No. 2	7.10 Ac.
FIELD No. 3	1.07 Ac.
FIELD No. 4	5.42 Ac.
CHANNEL AREA	0.40 Ac.
WOODS	0.00 Ac.
TOTAL	16.06 Ac.

Cover + Tillage Map  
 W-II - 1944 - 7 B

\*NOTE: THE WESTERN 0.80 ACRE OF FIELD NO. 3 IS SWAMPY

COVER AND TILLAGE MAP  
 WATERSHED W-II (J. W. BRYANT)  
 DANVILLE, VIRGINIA REGION 2  
 U.S. DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 H. H. BENNETT, CHIEF

REFERENCE: COOPERATOR'S AGREEMENT No. A-VA-14c-872  
 Surveyed By: W. E. DICKERSON, JR. DATE: Oct. 1938

APPROVED: \_\_\_\_\_  
 DATE: \_\_\_\_\_

NOTE: - ALL OTHER SYMBOLS ARE THOSE ADOPTED BY THE U.S. BOARD OF SURVEYS AND MAPS.

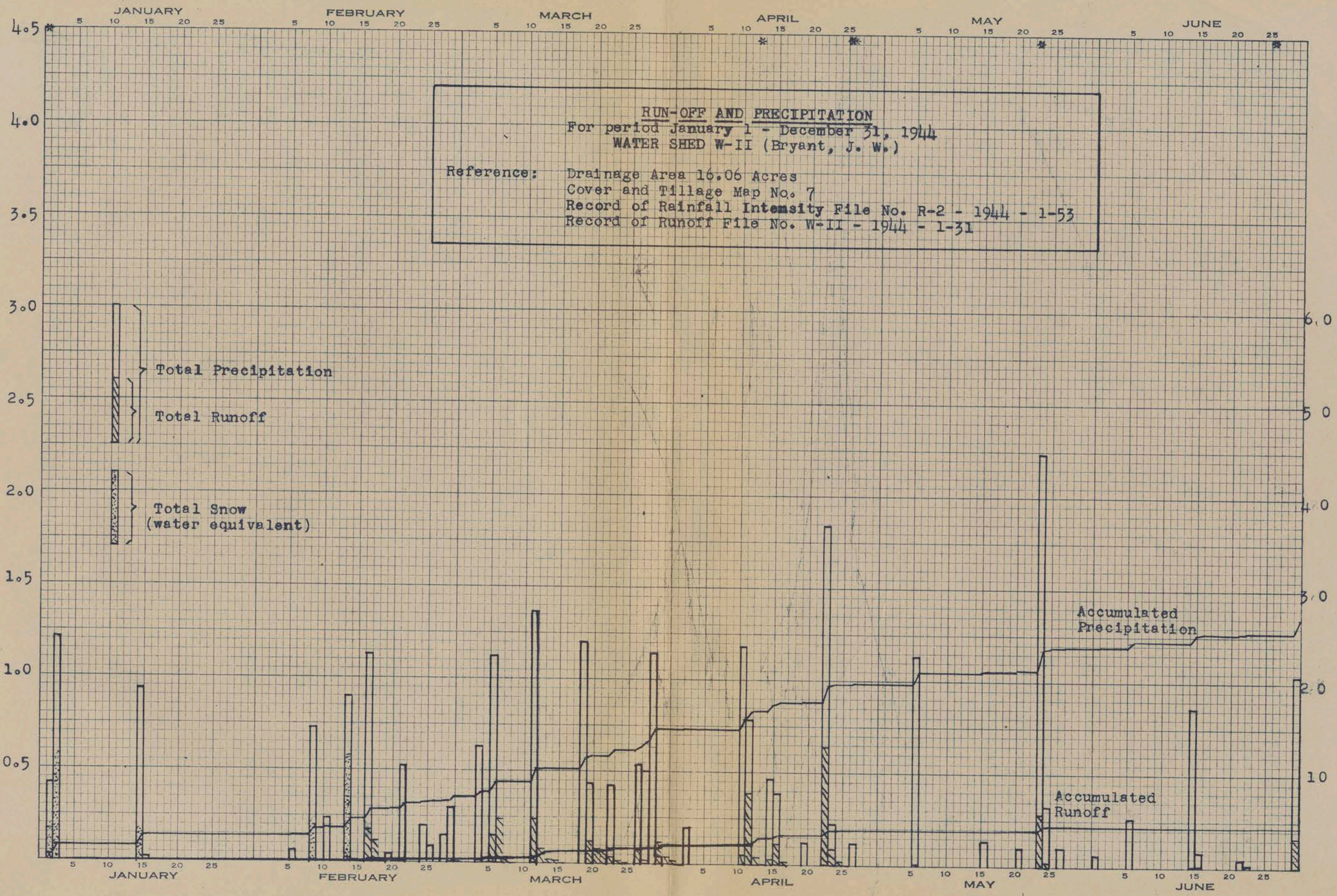
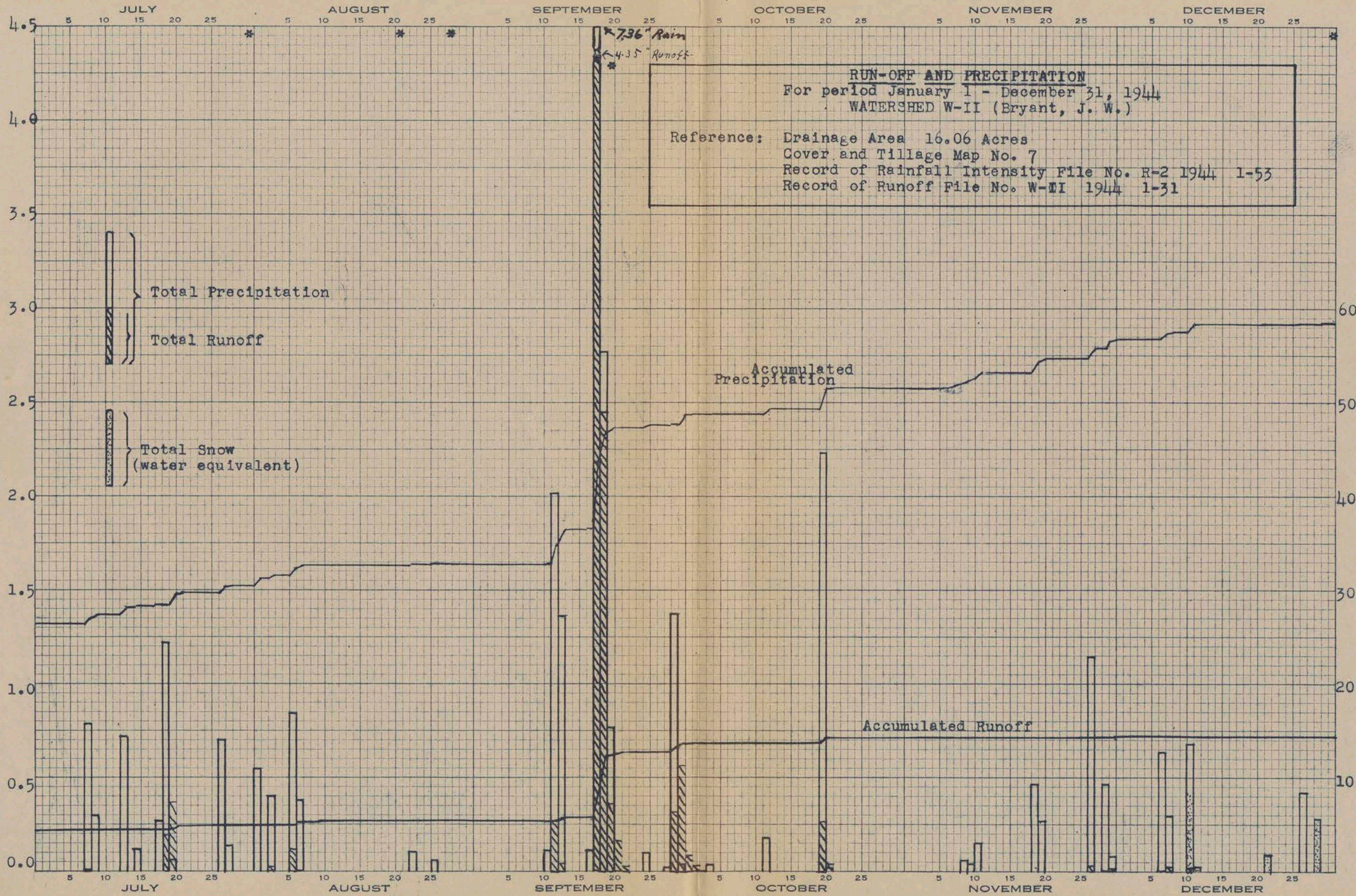


Figure 5  
 Sheet 1 of 2 Sheets

KEUFFEL & ESSER CO., N. Y. NO. 349-1371  
 Six months by days, Jan to June  
 182 days x .50 (10 per inch) divisions.  
 MADE IN U.S.A.



KEUFFEL & ESSER CO., N. Y. NO. 385-1341  
 Six months by Days, July to December.  
 184 days x 30 (10 per unit) of days.  
 MADE IN U. S. A.

Figure 5  
 Sheet 2 of 2 Sheets

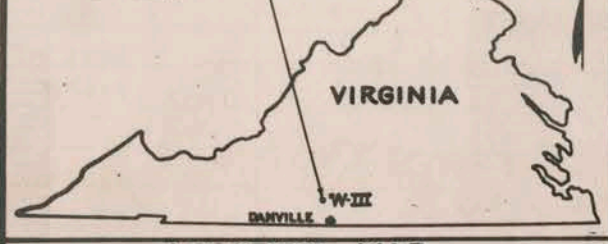
DATE	RAINFALL				RUNOFF			ANTECEDENT RAINFALL DATE	: RUNOFF COEF. FOR 15 M. RAINFALL RATE "C"	: CROP, SOIL, & COVER CONDITION		
	: VOLUME : INCHES	: INTENSITY FOR			: VOLUME : INCHES	: MAXIMUM RATE						
		: 5 M	: 10 M	: 15 M		: 30 M	: CFS				: CFS/AC.	
March 6-7	1.14	.72	.48	.40	.32	.2111	.918	.054	3/4	.30	.14	See Cover and Tillage Map 7 C.
March 29 - Apr. 2	1.64	.60	.42	.32	.24	.5202	.859	.050	3/27	.31	.16	
Apr. 24-27	1.88	2.40	2.04	1.68	1.24	.5623	9.120	.534	4/20	.04	.32	
May 24-25	1.46 <sup>1</sup>	2.40 <sup>2</sup>	1.80 <sup>2</sup>	1.44 <sup>2</sup>	.92 <sup>2</sup>	.1186	.774	.045	5/21	.30	.003	
Sept. 12-14	3.24 <sup>1</sup>	2.16 <sup>2</sup>	1.20 <sup>2</sup>	1.20 <sup>2</sup>	1.00 <sup>2</sup>	.2589	2.050	.120	9/11	.09	.10	
Sept. 18-21	10.00 <sup>3</sup>	4.56 <sup>4</sup>	2.76 <sup>4</sup>	2.88 <sup>4</sup>	2.52 <sup>4</sup>	7.8410	33.930	1.986	9/12-13	3.24	.69	
Sept. 29- Oct. 3	3.76 <sup>1</sup>	.96 <sup>2</sup>	.60 <sup>2</sup>	.48 <sup>2</sup>	.40 <sup>2</sup>	.9026	.937	.055	9/25	.18	.11	
Oct. 20-21	1.80	.48	.36	.32	.28	.1190	.262	.015	10/12	.11	.05	

- 1 Two Rains
- 2 First Rain
- 3 U. S. W. B. G.
- 4 From W-I - R-3 Pen failed to record.

W-III Watershed Characteristics: Area - 17.1 Acres. Prevailing slopes 4% and 7%, Soil: 40% Appling Sandy loam, 5% Cecil clay loam, 35% Durham sandy loam, 14% Cecil sandy loam, 6% Senaca loam. Terraced.

TABLE IV - SUMMARY OF OUTSTANDING RUNOFF PERIODS FOR WATERSHED W-III, DANVILLE, VIRGINIA

LONGITUDE: 79° 30' W (APPROXIMATE)  
 LATITUDE: 36° 45' N (APPROXIMATE)  
 12 MILES S.W. OF CHATHAM, VA.  
 ON HIGHWAY No. 718



LOCATION MAP

**- LEGEND -**

- CAMERA STATION AND VIEW NUMBER  
 (VIEW No. 5 - NEGATIVE No. VA-RS-13  
 VIEW No. 6 - NEGATIVE No. VA-RS-14)
- RAINFALL MEASURING STATION AND NUMBER
- WATERSHED BOUNDARY
- TERRACE, SHOWING INLET, DIRECTION OF FLOW AND NUMBER
- CONTOUR AND ELEVATION
- PROPERTY LINE
- SODDED OUTLET CHANNEL
- WOODED AREA
- FIELD BOUNDARY
- FIELD NUMBER

NOTE: ALL OTHER SYMBOLS ARE THOSE ADOPTED BY THE U.S. BOARD OF SURVEYS AND MAPS.

COVER AND TILLAGE MAP FOR PERIOD BEGINNING, 1/1/44 ..... ENDING 12/31/44 .....

WATERSHED CHARACTERISTICS

1. SIZE: 17.08 ACRES, 0.257 SQUARE MILE
2. RANGE IN ELEVATION FROM 583 FT. TO 622 FT. (APPROX. M.S.L.)
3. PREVAILING LAND SLOPES: 5% , 7%
4. RANGE IN LAND SLOPES FROM 2% TO 10%
5. LENGTH OF PRINCIPAL WATERWAY: \_\_\_\_\_ FEET
6. AVERAGE SLOPE OF PRINCIPAL WATERWAY: \_\_\_\_\_ %
7. TOTAL NUMBER OF WATERWAYS: \_\_\_\_\_
8. NUMBER OF ACRES PER WATERWAY: \_\_\_\_\_
9. TOTAL LENGTH OF WATERWAYS: \_\_\_\_\_ FEET
10. DRAINAGE DENSITY (LENGTH OF WATERWAYS PER ACRE): \_\_\_\_\_ FT./ACRE
11. FORM FACTOR: A/B: \_\_\_\_\_
12. AREA OF WOODS: 1.21 ACRES

COVER AND TILLAGE CONDITIONS

DATE	FIELD No. 1	FIELD No. 2	FIELD No. 3	FIELD No. 4	
	Field conditions at 1st of year shown on map				Rest of Field
		T4-5	T4-5	T5-12	
4/3	sm. grain 6" high	wheat 6" high	same 1/1	Same 1/1	
4/24	Plowed	wheat 10" high	Plowed to 1-9	10" high wheat 5" high	plowed
5/22	listed	wheat heading 1-9-10	hay 12" h. 100% cov.	wheat heading high	No cover
6/12	cultivated	matured hay 12" h.	top. cult. hay 12" h.	matured	weeds
6/19	"	harvested	top. cult. hay 12" h.	harvested	10% cover
7/14	cultivated	hay w. stubbles 80% cover	"	hay w. stubbles 100% cover	100% c. 25% "
7/24	in top	hay 75% cover	in top hay 90% c. cover	hay 75% cover	weeds 50% cover
8/21	1st pulling	"	"	"	"
8/28	2nd pulling	"	2nd pulling hay 5% c.	"	"
9/17	c. grass in top 25% cover	100% cover	c. grass 25% c. hay 100% c.	hay 100% c.	hay weeds 80% cover
10/10	seeded to sm. grain	"	"	"	"
12/31	sm. grain 4" high	old hay dead c. grass 100% cover	weeds 28% cover	hay 100% cover	weeds 75% cover

CROPPING PLAN

CROP YEAR	FIELD No. 1	FIELD No. 2	FIELD No. 3	FIELD No. 4
1938	IDLE	TOBACCO <small>seeded to RYE OCT. 10, 1938</small>	TOBACCO	IDLE
1939	Tobacco	Tobacco	Tobacco	Tobacco
1940	"	"	"	"
1941	Not in records			
1942	Weeds	sm. grain	4.23 T.	5.60 T. 3.94 hay
1943	Wheat	leap. & weeds	Tobacco	5.60 T. 2.11 cover
1944	Tobacco	wheat & lesp.	62 hay 3.61 T.	Herds lesp.
1945				
1946				
1947				
1948				
1949				
1950				
1951				
1952				
1953				
1954				
1955				

ACREAGE SUMMARY

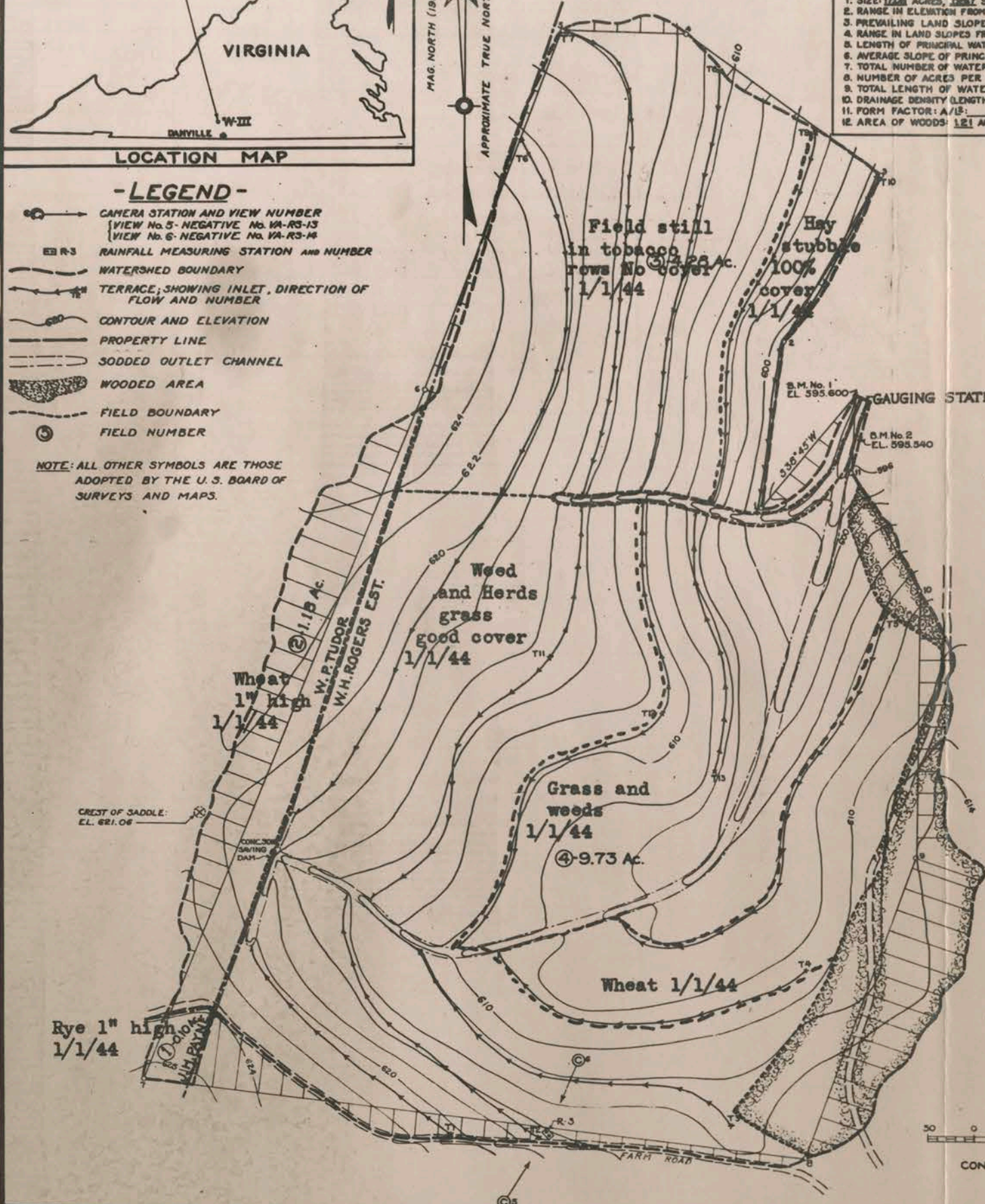
- FIELD NO. 1..... 0.10 Ac.
- FIELD NO. 2..... 1.18 Ac.
- FIELD NO. 3..... 4.28 Ac.
- FIELD NO. 4..... 9.73 Ac.
- CHANNELS..... 0.40 Ac.
- WOODS..... 1.21 Ac.
- ROADS..... 0.18 Ac.
- TOTAL..... 17.08 Ac.

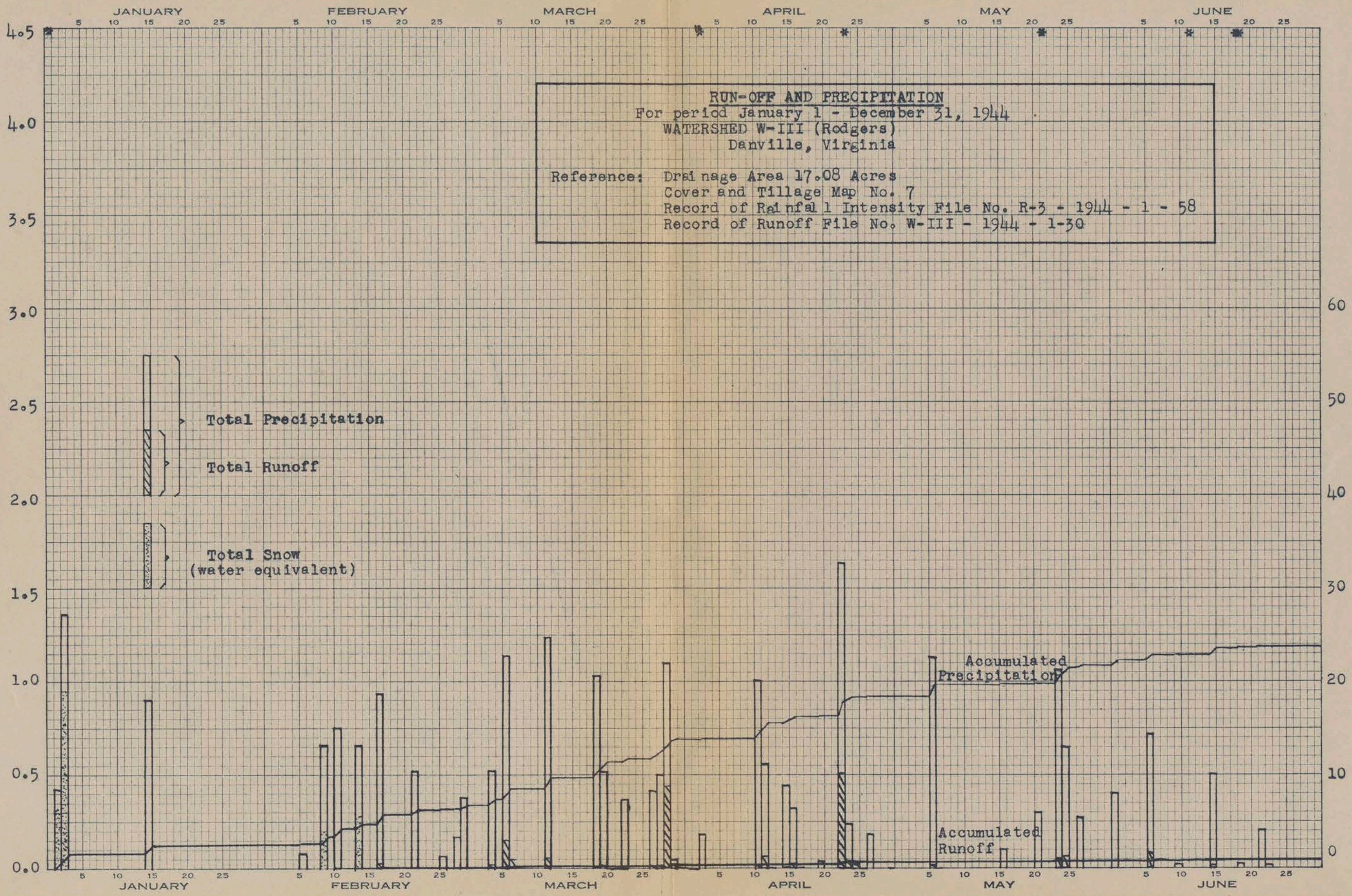
\*NOTE: AREA OF ROADS AND CHANNELS INSIDE OF FIELD NO. 4 NOT INCLUDED IN AREA OF THIS FIELD.

Cover + Tillage Map  
 W-III - 1944 - 7C

COVER AND TILLAGE MAP  
 WATERSHED W-III (W.H. ROGERS EST.)  
 DANVILLE, VIRGINIA REGION 2  
 U.S. DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 H. H. BENNETT, CHIEF  
 REFERENCE COOPERATOR'S AGREEMENT No. A-VA-190290  
 Surveyed By W.T. DICKERSON, JR. Date Oct. 1938

SUBMITTED: D.W. CARSWELL  
 APPROVED: [Signature]  
 COMPILED: TRACED: CHECKED: DATE: 7-11-50  
 W.E.D. W.E.P. H.A.A.B. 88-5774





KEUFFEL & ESSER CO., N. Y. NO. 359-137L  
 Six months by days, Jan type.  
 142 days x 9" (10 per inch) grid.  
 MADE IN U.S.A.

Figure 6  
 Sheet 1 of 2 Sheets

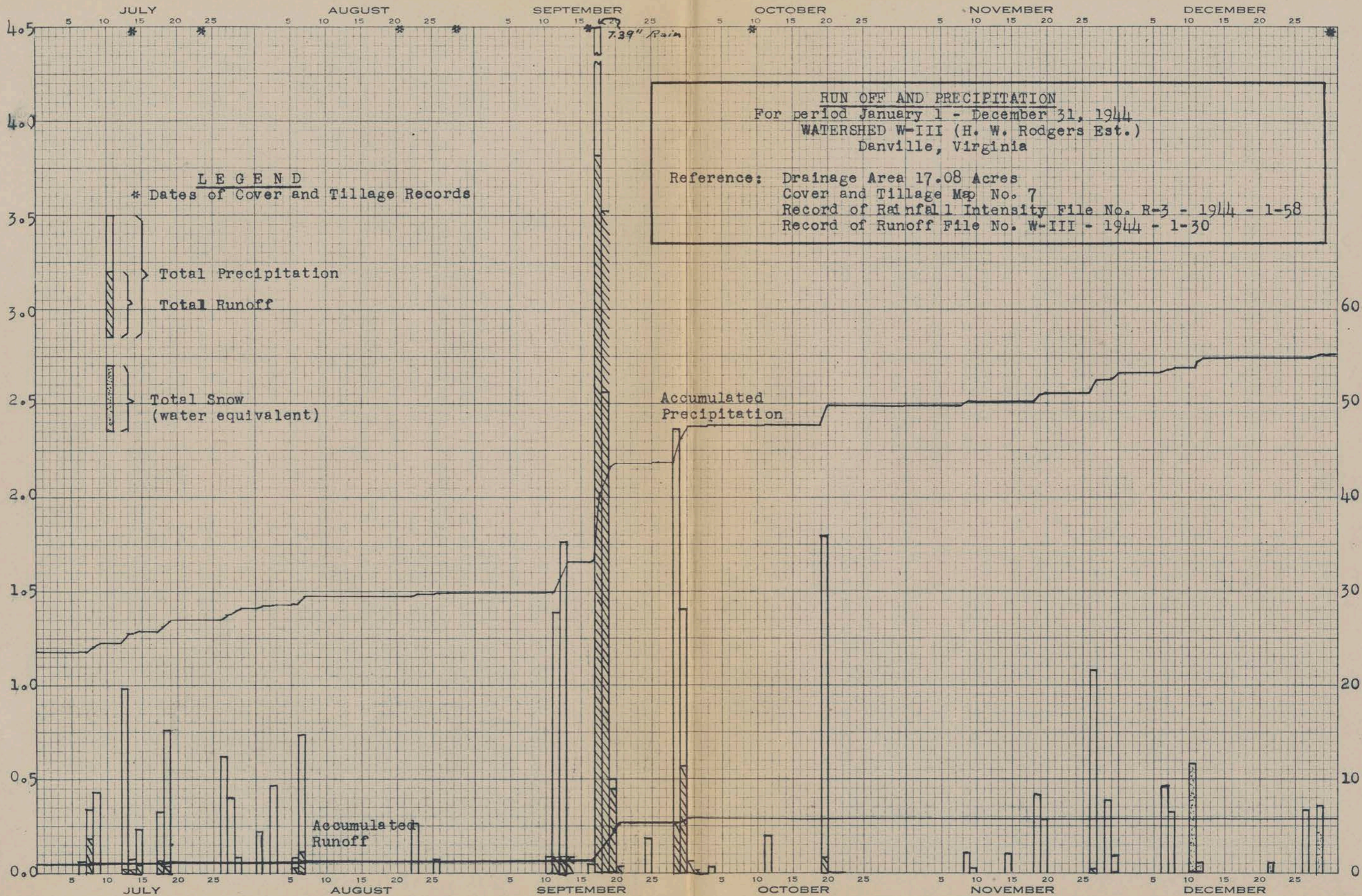
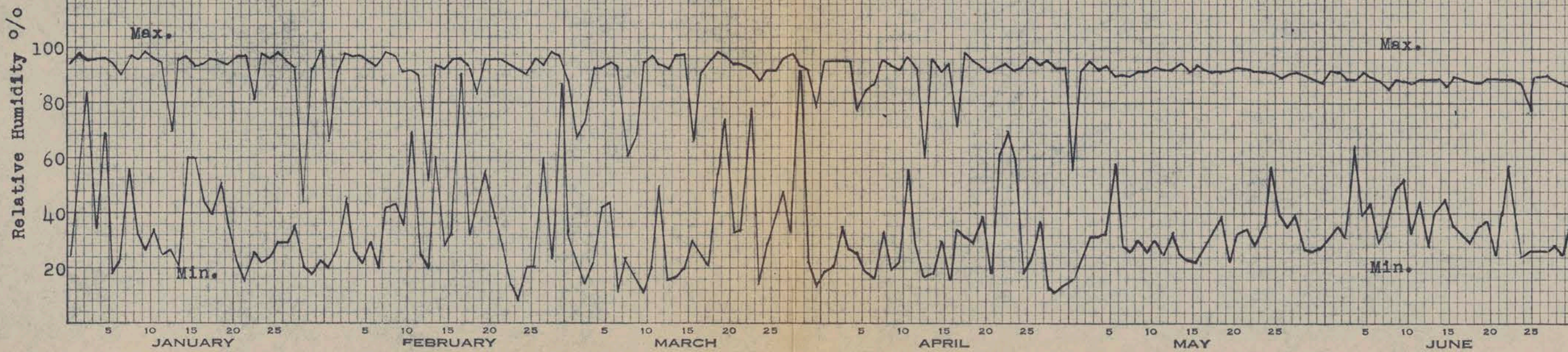
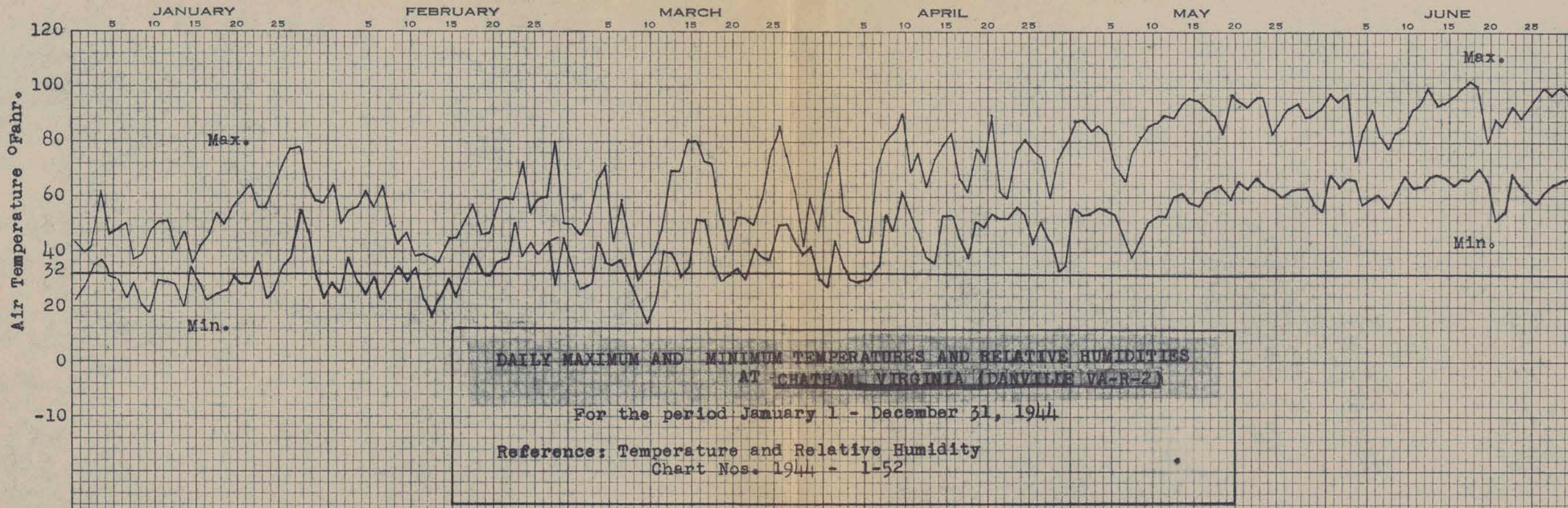


Figure 6  
 Sheet 2 of 2 Sheets

KEUFFEL & ESSER CO., N. Y.  
 Six months by Days, July to June.  
 181 days X .90 (10 per cent) = 163 days.  
 MADE IN U. S. A.



KEUFFEL & ESSER CO., N. Y. 359-137L  
 Six months by days, Jan. to June  
 192 days X 90 (10 per inch)  
 MADE IN U. S. A.

Figure 7  
 Sheet 1 of 2 Sheets

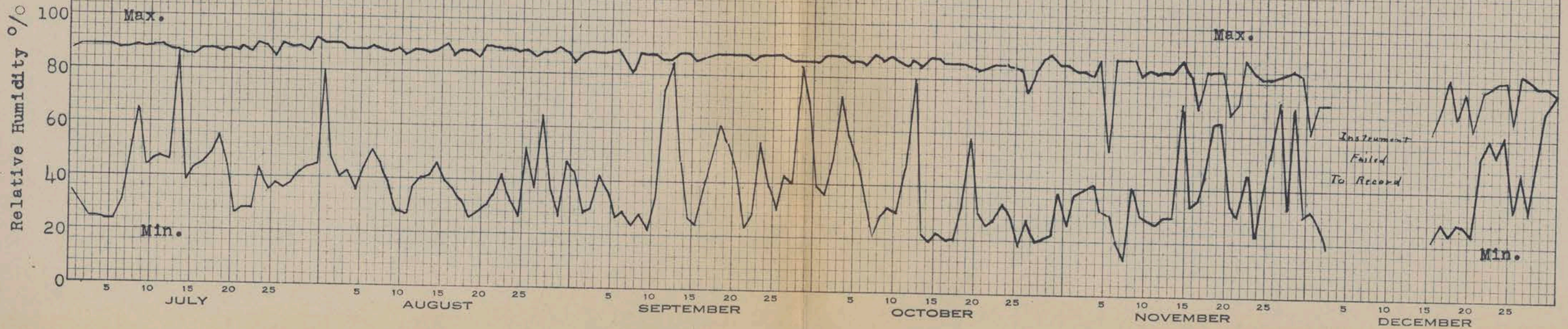
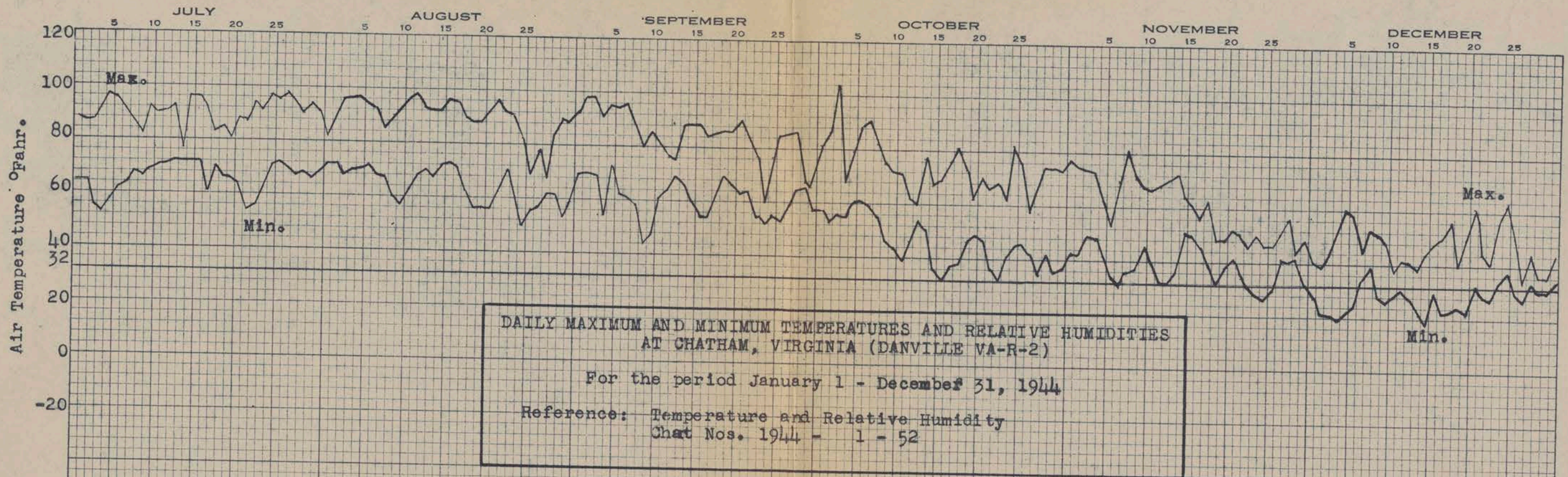
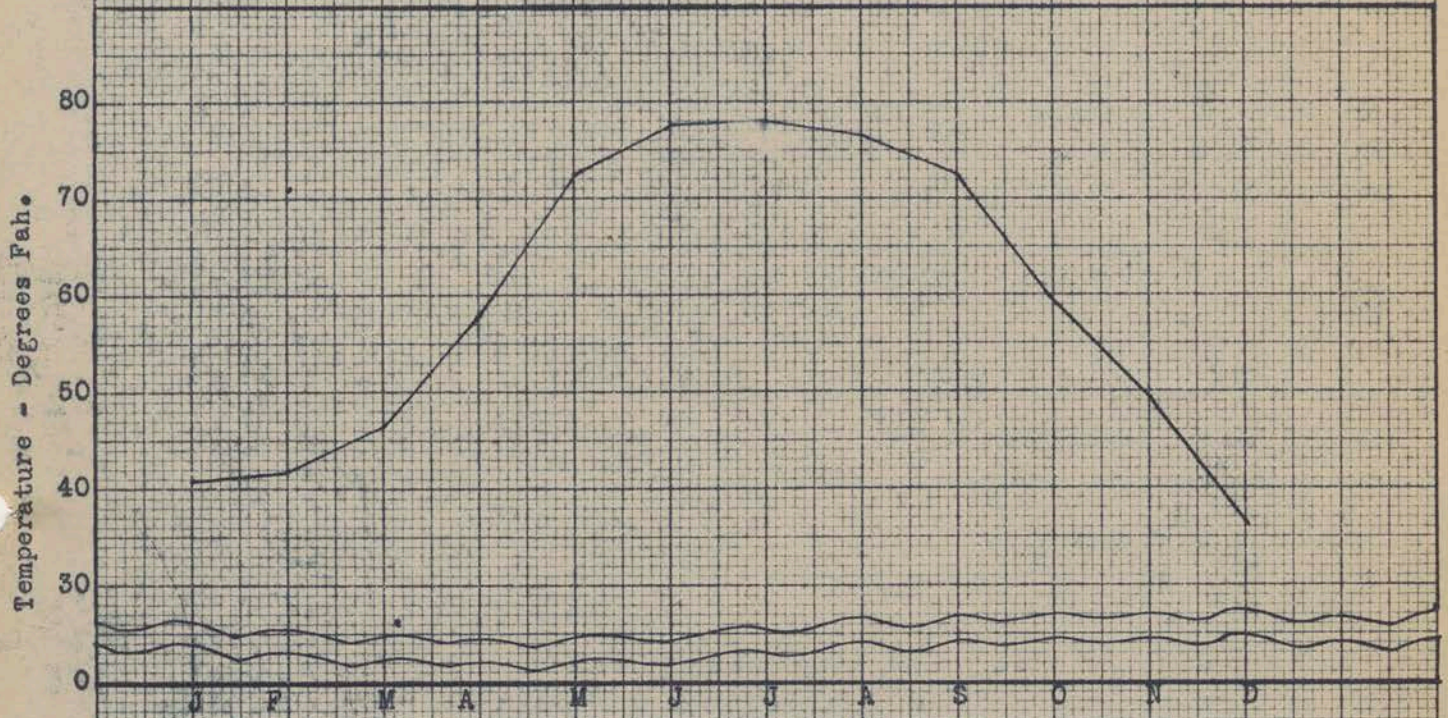


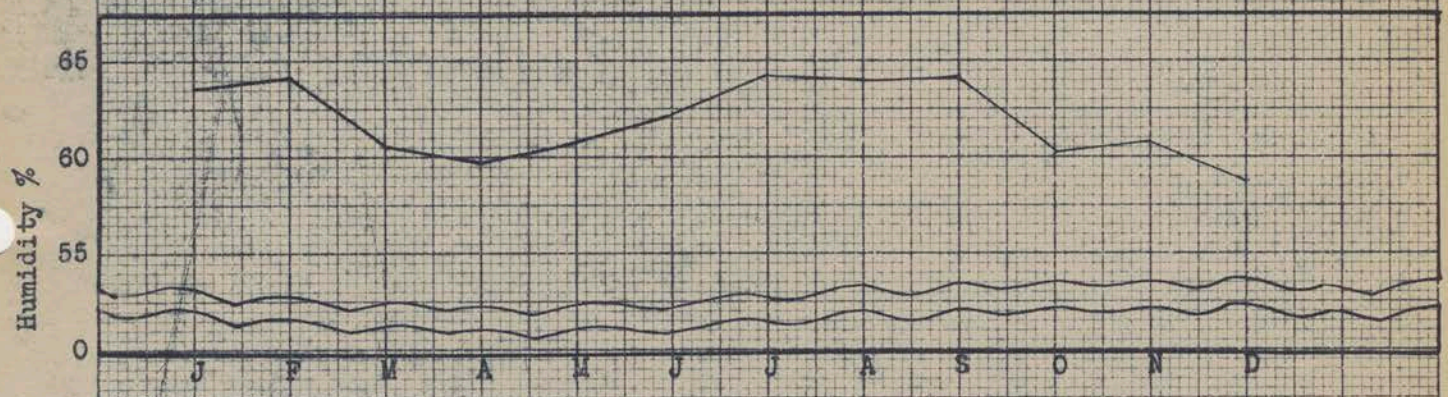
Figure 7  
 Sheet 2 of 2 Sheets

KEUFFEL & ESSER CO., N. Y. 159-1364  
 Six months by Days, July to June  
 151 days x 30 (10 per cent) 0.50  
 MADE IN U. S. A.

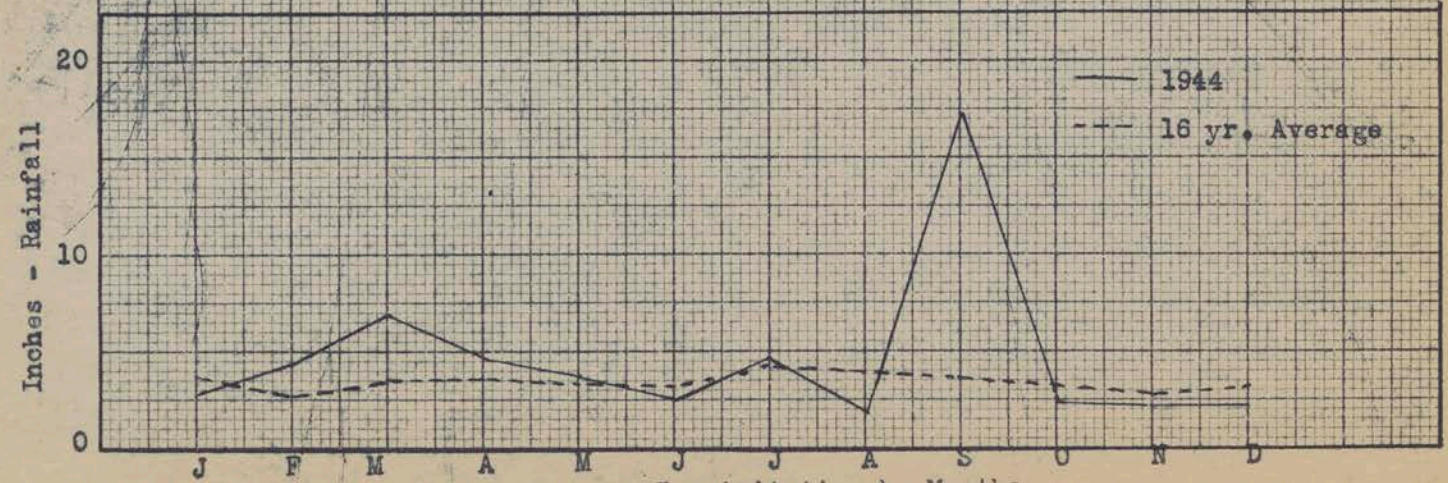
CLIMATIC SUMMARY - CHATHAM, VIRGINIA - 1944



Average Air Temperature by Months



Average Humidity by Months



Average Precipitation by Months

Figure 7 A

KEUFFEL & ESSER CO., N. Y. NO. 359H-11  
 20 x 30 to the inch, 100 lb. heavy.

MON TH	AIR TEMP.	SOIL TEMP. <sup>1</sup>	HUMIDITY	AIR PRESSURE <sup>2</sup>	PRECIPITATION
January	37.8	34	59.9	28.08	1.54
February	40.2	39	63.2	28.02	5.94
March	43.8	43	62.2	28.01	4.26
April	52.4	49	60.5	27.94	2.22
May	68.7	65	62.2	28.04	4.08
June	71.2	73	63.4	27.98	3.17
July	73.2	74	64.2	28.02	1.92
August	72.7	75	62.7	28.06	1.11
September	67.0	69	62.7	28.06	4.22
October	55.2	55	59.0	28.10	2.59
November	42.0	44	63.4	28.04	1.83
December	29.4	34	62.3	28.08	1.80

CLIMATIC SUMMARY---BLACKSBURG, VIRGINIA---1944

MONTH	AIR TEMP.	HUMIDITY	PRECIPITATION
January	41.3	63.7	2.67
February	42.8	64.2	4.19
March	46.7	60.7	6.99
April	57.8	59.9	4.76
May	72.9	60.8	3.76
June	77.9	62.2	2.53
July	78.0	64.3	4.84
August	76.8	64.0	1.91
September	72.5	64.3	17.31
October	59.6	60.1	2.34
November	49.4	60.9	2.33
December	36.7	57.9	2.29

CLIMATIC SUMMARY---CHATHAM<sup>3</sup>, VIRGINIA---1944

1. Six inch depth under mixed sod.
2. Uncorrected for elevation, temperature, and latitude.
3. Danville Project.

TABLE V - MONTHLY SUMMARY OF MISCELLANEOUS

CLIMATIC FACTORS - 1944

Factor	DANVILLE			
	Blacksburg	R-1&W-1 Easley	R-2&W-II Bryant	R-3&W-III Rodgers
Total Annual Prec.	34.68'	56.29'	56.53'	54.93'
Number of Precipitations	120	135	101	108
Number of Snows	3	2	2	2
No. Mixed Snow&Rains	4	4	5	6
No. Rains .25" & over	39	52	48	53
No. Rains Less than .25"	81	83	53	55
Max. Rain 24 hr. Period	2.68"	7.28"	6.99"	7.13" <sup>2</sup>
Max. Intensity 2 Min.	4.20"	6.40"	6.60"	8.40" <sup>3</sup>
Max. Intensity 5 Min.	3.00"	5.76"	6.00"	3.84" <sup>3</sup>
Max. Intensity 10 Min.	2.64"	4.68"	4.50"	3.36" <sup>3</sup>
Max. Intensity 15 Min.	2.36"	4.00"	4.00"	2.72" <sup>3</sup>
Max. Intensity 30 Min.	1.96"	2.52"	3.80"	1.44" <sup>3</sup>
Max. Intensity 60 Min.	1.47"	3.26"	2.70"	1.00" <sup>3</sup>
Dryest Month	August	August	August	August
	1.11"	1.58"	2.33"	1.83"
Wettest Month	February	September	September	September
	5.94"	17.38"	16.86"	17.68"
Period of Drought	16 Days	21 Days	21 Days	21 Days

MASTER STATION  
Chatham

Maximum Temperature	100.0°	102.0°
Minimum Temperature	3.0°	14.0°
Last Frost (32°)	4/7/44	4/6/44
First Frost (32°)	10/28/44	10/16/44
Growing Season	204 Days	193 Days
Maximum Humidity	100.0%	99.0%
Minimum Humidity	4.0%	11.0%
Maximum Soil Temperature	87.0°	Not Recorded
Minimum Soil Temperature	30.0°	Not Recorded
Last Frost 32° @ 6"	3/11/44	
First Frost 32° @ 6"	12/5/44	
No. Days Frozen 6" deep	25	

1. Based on "Recorder Chart" line readings.
2. Average of R-1 and R-2 as R-3 failed to record maximum storm on September 18.
3. Exclusive of September 18 storm.

TABLE VI - SUMMARY OF MISCELLANEOUS CLIMATIC FACTORS

MONTH	BLACKSBURG						DANVILLE								
	W-II			W-III			W-I			W-II			W-III		
	:RAIN- :FALL	RUN- OFF	% R.O.	:RAIN- :FALL	RUN- OFF	% R.O.	:RAIN- :FALL	RUN- OFF	% R.O.	:RAIN- :FALL	RUN- OFF	% R.O.	:RAIN- :FALL	RUN- OFF	% R.O.
January	1.54 <sup>1</sup>	0 <sup>2</sup>	0	1.54	.0085	.55	2.68	.0173	.64	2.81	.0281	1.00	2.52	0	0
February	5.94	0	0	5.94	.0442	.74	4.17	.1365	3.27	4.06	.3702	9.12	4.34	.0629	1.45
March	4.26	0	0	4.26	.0033	.08	7.10	.4788	6.74	7.02	2.0824	29.66	6.85	.8881	12.96
April	2.22	0	0	2.22	.0002	.01	4.37	.1197	2.74	5.31	1.4284	26.90	4.59	.7057	15.37
May	4.08	.4539	11.12	4.08	.2159	5.29	3.90	.2163	5.55	4.04	.3005	7.44	3.33	.1328	3.99
June	3.17	.0509	1.60	3.17	.0285	.90	3.35	.1792	5.35	2.36	.1698	7.19	1.88	.0920	4.89
July	1.92	0	0	1.92	.0004	.02	4.99	.2440	4.89	4.30	.5678	13.20	5.23	.3715	7.10
August	1.11	0	0	1.11	0	0	1.58	0	0	2.33	.1420	6.09	1.83	.1475	8.06
September	4.22	0	0	4.22	.0027	.06	17.38	7.9961	46.01	16.86	8.5510	50.72	17.68	8.9318	50.52
October	2.59	0	0	2.59	.0065	.25	2.52	.1563	6.20	2.46	.4170	16.95	2.04	.1960	9.61
November	1.83	0	0	1.83	0	0	1.96	.0004	.02	2.58	.0485	1.88	2.46	.0211	.86
December	1.80	0	0	1.80	0	0	2.29	.0116	.51	2.40	.0805	3.35	2.18	.0090	.41
Annual Basis	34.68	.5048	1.46	34.68	.3102	.89	56.29	9.5562	16.98	56.53	14.1862	25.95	54.93	11.5584	21.04

1. Inches of Precipitation
2. Inches of Runoff

TABLE VII - RAINFALL-RUNOFF SUMMARY BY MONTHS



