

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

S (ECW) R-6  
Timber Surveys, Umatilla  
Rock Creek Project

DESCRIPTIVE REPORT

BEAR CREEK TIMBER SURVEY PROJECT<sup>1</sup>

UMATILLA NATIONAL FOREST

1933

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Fred A. Matz,  
Chief of Timber Surveys.



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## I. INTRODUCTION

### Name of Project

A large portion of the project is situated at the headwatershed of Rock Creek, which drains northwesterly to the John Day River, and for this reason the work has been named the Rock Creek Timber Survey Project.

### Maps

A map on the scale of ¼ -inch equals 1 mile forms the frontispiece of this report. On it is shown the area originally proposed for survey, the portion completed, unit divisions and other data in accordance with the accompanying legend.

Blue-line prints of both the topographic and timber estimate plats for each township involved in the completed portion of the project have been prepared and are bound in the regulation folders and form a part of this report. The unit boundaries and summary of type acreages and timber estimates appear on the timber estimate plats. The forest types are indicated on the topographic prints in accordance with the standard type legend.

### History of Project

The Kinzua Lumber Co. has operated in privately-owned timber just west of the project area for a number of years. The Company's sawmill is located on Thirty Mile Creek about five miles west of the Forest boundary and about 20 miles southeast of Condon, Oregon. This Company owns also much of the patented land within the Forest in and adjacent to the Project.

The Office of Forest Management has felt the need for intensive timber survey work in the tract, because the Company had steadily extended its logging operations eastward from their mill. Its main line logging railroad into the Forest was already under way last season. It is, therefore, quite likely that this Company will make application for the purchase of some of the Government timber, at least in that portion of the tract adjacent to its timber holdings.

The establishment of Bull Prairie Camp CCC afforded an opportunity to employ enrolled men on the cruising work and arrangements were made accordingly.

H. C. Heine, Jr., who had served several seasons on timber surveys in this Region, was selected as Chief of Party to conduct the timber survey work. The men assigned to him were all green to this kind of work and had no previous training in surveying or cruising. The men had been enrolled from New York City and had not had an opportunity to be in the woods previous to their assignments to the CCC camp.

Field work started with schooling some of the men in the vicinity of the camp on July 17, 1933. By the end of the month, a total of 14 men were assigned to the timber survey crew, but three of these served only a couple of days. On these three, the Chief of Party wrote a comment on their time records: "Couldn't stand the strain."

The first step in the training of these men was the re-tracement of some section lines in the vicinity of Bull Prairie camp and the finding of corners established by the General Land Office. While chaining the distances the men were instructed to practice pacing and in that way each had an opportunity to check the paced distance with actual measurements as desired. Tree measurements

and map sketching were then taken along these surveyed lines, and the practice work kept up until the men became fairly familiar with their duties and could be paired off and entrusted to find their way about under forest conditions.

When the crew was sufficiently schooled so that it seemed practical to attempt cruising, it was found that the excessive loss of time in travel to and from the west end of the project precluded the possibility of successfully carrying on the work in that way, so on August 3 a side camp was established at "The Notch" in Sec. 18 of T. 7 S. R. 24 E. On September 20 this side camp was moved to Long Prairie about seven miles east of its former location, and from there the season's work was completed. The party was furnished a ton and a half truck (ECW) for transportation purposes and it was kept continuously with the side camp throughout the season.

### Personal

Enrolled men from the CCC organization formed the crew, working under the supervision of H.C. Heine, Jr., E.C.W. foreman, Chief of Party. General inspection of the work was done periodically by E. J. Hanzlik and Fred A Matz from the Regional Office of Forest Management. The names of the crew members follow:

<u>Name</u>	<u>Period of Service</u>
1. Joseph Buscemi	July 27 to Oct. 6
2. Fred E. Koscink	July 26 to Oct. 5
3. Isadore Klopot	July 26 to Oct. 6
4. Maurice Shostack	July 25 to Oct. 6
5. Boyd Hinton	July 26 to July 31
6. Alexander Shostick	July 26 to Aug. 31
7. *C. Schmidt	July 25 to July 28
8. James D. Gregotio	July 25 to Oct. 6
9. Luther Cardwell	July 17 to Oct. 4
10. Isadore Golden	July 17 to Oct. 6
11. Sam Wilson	July 17 to Oct. 5
12. *L. Benowitz	July 17 to July 25
13. Jacob Witlin	July 26 to Oct. 5
14. * Harry Hudias	July 24 to July 25

Commented upon by Chief of Party as "Couldn't stand the strain." The inability to carry on farther was probably due to lack of interest in the work, or no desire for it, rather than physical incapacity to do so.

All the other crew members were willing to carry on the work to the best of their ability, but because of the extreme limitation of previous training were in constant need of instruction and supervision by the party chief.

### Location and Area

The project area is situated at the western end of that unit of the Umatilla Forest comprising the Heppner Ranger District. It is all within the Condon Working Circle. The town of Heppner, which is on a branch line of the O. W. R. R. & N. Co., is, situated about forty miles northeast of the tract. Condon is likewise situated at the southern terminal of another branch line railroad and via the logging railroad line of the Kinzua Lumber Co. is about 20 miles northwest of the western boundary of the project.

The project area is outlined on the frontispiece map in this report.

Area

As originally planned, the project consisted of about 52,000 acres, of which about 38,000 acres was designated as principal area and the remainder secondary area. The area actually covered was, confined to the portion designated as principal area and consisted of 17,347 acres of National Forest lands and an additional acreage of 680 acres of patented land, making a gross total of 18,027 acres.

Unit Divisions

The boundaries of the management units are shown on the small scale map forming the frontispiece of this report and on the 4-inch-to-the-mile scale timber estimate plats in FM folders.

The area covered is all within the Condon Working Circle and in the Heppner and Spray blocks thereof. The National Forest acreage represented in each block is as follows:

Heppner block-----	13,323 acres
Spray block -----	4,024 acres
Total -----	17,347 acres

Status and Ownership

There is a considerable acreage of patented land within the project area, the locations of which are indicated on the frontispiece map and other maps pertaining to this report. All these lands are chiefly valuable for timber growing and now have a good stand of timber on them. With the exception of comparatively small areas used for saddle horse pastures, the lands are unfenced. Forest roads extend across these lands.

The Forest Service has improved some of the springs in the region and last summer made some small building improvements with E.C.W. in the Long Prairie vicinity.

A lookout station is maintained at Wheeler Point in Section 18 of T. 7. S., R. 24 E. The improvements at this L.O. Station consist of a neat cabin and a garage. Roads and telephone lines are kept in good order.

The Bureau of Public Roads has constructed a fine highway across the project about 3 miles west of Bull Prairie. This highway is to connect Heppner, which is on a paved highway into Pendleton, with the John Day Highway at a point about 3 miles east of Spray. Over most of the proposed route for that portion of this highway between the Forest boundary and Heppner, no construction work had been done and it was necessary last summer to travel the old dirt road.

Only a small acreage of patented lands was cruised. In order to give more comprehensive data concerning the gross acreage involved in each management unit the patented lands are tabulated in a separate column in the summaries.

Briefly, the entire acreage represented is as follows:

Block	Acreage of lands		Total Acres
	Government	Patented	
Heppner	13,323.02	2,116.79	15,439.81
Spray	4,023.85	2,159.37	6,183.32
	17,346.87	4,276.16	21,623.03

## II. FIELD WORK AND COMPUTATIONS

### Field Work

Control Methods: The fieldwork in connection with the vertical and horizontal control was done in accordance with the special instructions issued by the Regional Office of Engineering. Frank Flack from the Office of Maps and Surveys was assigned to the project and had charge of a small crew while running out vertical control lines with transit and stadia.

The old lines, established by the G. L. O. many years ago, were retraced and along them were set stations for starting and checking points for the strip surveys. These stations were set at 10-chain intervals in order to provide for a 10 per cent cruise. It was found that the original survey was very inaccurate and much difficulty was had in locating the lines and corners.

Horizontal positions along the strip surveys were determined by using a staff compass for alignment and the distance paced. Elevations along the strip surveys were determined by adjusted aneroid barometer readings.

Cruising Methods: The regular two-man party, strip method was used in cruising. Horizontal distances were obtained by pacing using the new type Forest Service compass for alignment. Elevations along the strip surveys were determined with aneroid barometers, adjustments of the readings being made after closing in on the control lines.

Whenever it was necessary to cross patented lands it was customary to cruise the timber thereon. However, the timber volume pertaining to them had not been carried into the tabulations which follow later, and the figures given there apply only to the Government lands.

All of the timberland types were cruised on a 10% basis, running two strips through each forty. The comparatively small acreage covered on 5% basis was of grass and sagebrush types. The Government acreage covered by these degrees of intensiveness is as follows:

10 % basis –	17,267 acres
5% basis –	80 acres
Total	17,347 acres

### Office Computations

Computations for only a small portion of the timber volume on the area covered were completed in the field camp. All other computations and compilations were made in the Regional Office at Portland, Oregon.

The B. M. volume for ponderosa pine was computed separately for mature and immature age classes. The immature age class has given a fair index of what may be expected to be left after cutting.

The B. M. volume of all other species was computed as of one age class.

Volume Tables Used

For ponderosa pine mature age class, the Forester's Table, Site IV, Washington Office 1930 was used. The second growth Ponderosa Pine Table, by Hanzlik, was used for the immature Ponderosa Pine timber. Both of these tables are in log length height classes.

The following tables, based on d.b.h. classes, were used for the associated species:

Douglas fir and white fir: Special table prepared for the North Fork Malheur River Project in 1927.

Western Larch: Table prepared from measurements on North Fork Malheur River Project applied to Table No. 64, Part 1 of Western Species Volume Tables.

Englemann Spruce: Tables used on Hilgard Project, Umatilla National Forest 1925.

Lodgepole Pine: Malheur, North Fork Malheur River Project in 1927.

Western Juniper: Revision of Cord Volume Table prepared for Dog Lake Project, Fremont National Forest in 1925.

Single, tree volume by 2-inch diameter classes are, given in Table No. 1 which follows:

TABLE NO. 1

Volume Tables for Associated Species

D.B.H.	Volume in Ft. B. M. Decimal "C"				Cord Volume Juniper
	Douglas fir White fir	Western Larch	Englemann Spruce	Lodgepole Pine	
12	7	9	5	8	.18
14	10	13	10	15	.23
16	14	20	16	18	.28
18	20	28	24	23	.34
20	28	40	34	30	.42
22	36	52	46	40	.50
24	46	65	62	52	.60
26	60	81	86	66	.72
28	75	99	113	86	.84
30	90	119	141		.96
32	110	146	169		1.10
34	130	164	190		1.23
36	142	190	220		1.36
38	173	214	260		1.50
40	197	242	300		1.65
42	220	267			
44	260	293			
46	300	318			
48	350	343			

### Defect and Breakage Correction Factors

No deduction is made for defect or breakage in the immature class of Ponderosa Pine, since the volume tables for this class of saw timber are considerably lower than for mature timber. Both defect and breakage are expressed as one number on the tally sheets and varies as follows:

Ponderosa pine, mature -----	5% - 10%
Douglas fir-----	10% - 20%
White fir-----	5% - 10%
Western larch-----	15% - 30%
Englemann spruce -----	5% - 10%

White fir trees, 26 inches and over d.b.h. are, considered worthless for lumber, because of shake and rot, and therefore no volume for trees of that size has been carried into the timber estimate summaries. The above stated factors for this species were used only for volume corrections when the trees were 24 inches and less d.b.h.

### III. SILVICULTURAL DESCRIPTION

#### Description of Types

Ponderosa pine type: Approximately 61% of the project area is covered by this type, about 2/3 of which is of mature age class. Of the remainder of the pine type, 70% is immature sawtimber type, 16% large pole age class, and 14% seedlings and saplings age classes.

Trees of all age classes are found throughout most of the mature timber type, and it affords, therefore, a good opportunity for cutting under the selection system. On the areas mapped as of this type ponderosa pine constitutes the majority of the timber volume, but there is a goodly representation of Douglas fir, white fir and western larch throughout.

The quantity of reproduction varies considerably and at best is a 2/3 stocking. Areas of scant reproduction are usually at the borders of juniper or open types and where there is shallow rocky soil. Very little underbrush and windfalls are found.

White fir-Larch-Douglas fir type: The species included in this type are found growing on the same sites and are not found in pure stands of individual species. This type is found along the draws and cooler sites. The timber on the uplands is generally short and of poor quality. Along the draws and on the north slopes the timber is of good height, but is shaky, especially is this true of Western larch in the larger sizes. Engelmann spruce is found in this type in the cool, moist sites along the bottoms of the draws.

Grass and Sagebrush types: By reference to the summary of forest type acreages at the back of this report it will be noticed that slightly over 1,100 acres were classified as non-timbered in grass and sagebrush. The quantity of sagebrush type is a little more than double that of the grass type. Both types exist under practically the same site conditions, but it is noticeable that the grass prevails where there is an abundance of moisture. Both types are found on the rocky uplands where it is practically worthless scabland, with very dry shallow soil and large surface boulders and rock outcrops are abundant. On these rocky headlands the vegetation is often so scarce that it is impossible to determine by casual observation whether it should rightly be classified as grass or sagebrush type and in all probability should be designated weed type.

Growth and Yield Data – (Saw timber Size)

All the ponderosa pine trees were tallied in two age classes as mature or immature, whereas in the associated species only one age class in sawtimber was recognized.

Trees of pole sizes, all species, were tallied in two diameter classes, namely, 4” – 7” and 8” – 11” d.b.h. The results of the compilation of pole estimates are shown under table No. 4 at the back of this report.

IV. LOGGING DATA

Topography

The topography ranges from gentle slopes free from rocks to steep slopes with numerous rocks. Much of the area is traversed by long shallow draws. Logging may be done either by horses or caterpillar tractors, skidding to truck roads, or railroads, which may be most conveniently located since there are no engineering difficulties.

Underbrush

Underbrush is light or medium and will not hinder logging operations.

Windfalls

Windfalls do not occur in the pine stands in sufficient quantity to interfere with logging operations. There are numerous windfalls in the fir-larch areas on the north slopes and along creek bottoms, but with present timber values these areas will not be logged.

V. STATISTICAL SUMMARIES

Final tracings of the topographic and timber-estimate plats were prepared by the office of maps and surveys. Blue line prints of these plats, which form a part of this report, are in the files of the Forest Supervisor and the Regional Office.

Statistical summaries for forest type acreages, timber estimates and number of poles were prepared in the timber surveys branch of the Office of Forest Management. The abbreviations for tree species and type symbols are in accordance with the standards given in “Instructions for Making Timber Surveys”, Part V of R-6 Forest Management Handbook. For convenience in making reference to the summaries which follow, the abbreviations are quoted here, namely:

A. Tree Species

	<u>Species Abbreviations</u>	
Ponderosa pine, mature		P
Ponderosa pine, immature		P – I
Lodgepole pine		LP
Douglas fir		D
White fir		WF
Western Larch		WL
Englemann spruce		ES

B. Types and Age Classes

<u>Types and Ages</u>	<u>Symbol</u>
Ponderosa pine (saw timber), mature	P-4
Ponderosa pine (saw timber), immature	P-3
Ponderosa pine (large poles), immature	P-2
Ponderosa pine (Seedlings and saplings)	P-1
White fir-larch-Douglas fir, mature	FL-3
White fir-larch-Douglas fir (Large poles), immature	FL-2

Four tabulations comprise the statistical summaries for this report and are arranged in the following order:

Acreage Summary of Forest Types -----	Table No. 2
* Timber Summary by Sections -----	Table No. 3
Summary of Number of Poles -----	Table No. 4
Summary of Timber Estimate -----	Table No. 5

\* Includes summary of snags, cord volume of juniper, insect killed volume of pine, number of diseased trees and number of recent insect-killed trees.

These tables follow:

TABLE NO. 2  
ACREAGE SUMMARY OF FOREST TYPES  
CONDON WORKING CIRCLE  
HEPPNER BLOCK

Township and Section Number	Alienated Land Acres	Ponderosa Pine				WF-Larch-DF		Juniper Acres	Sage-Brush Acres	Grass Acres	Total N.F. Acres
		P-4 Acres	P-3 Acres	P-2 Acres	P-1 Acres	FL3 Acres	FL2 Acres				
<u>T. 7 S., R. 23 E., W.M.</u>		<u>COMPARTMENT NO. 1</u>									
11			57		3	54				114.00	
14		1.00	43		54	183	14			296.00	
Comp. No.1 Totals		1.00	100		57	237	14			410.00	
<u>T. 7.S.,R. 23 E., W.M.</u>		<u>COMPARTMENT NO.2</u>									
11			203		3	240	34			485.00	
12			23			177			5	200.00	
Comp. No. 2 Totals			226		3	417	34		5	685.00	
<u>T. 7 S., R. 23 E. W.M.</u>		<u>COMPARTMENT NO. 3</u>									
11			19			12				41.00	
12		2.00	161	6	2	114	6			440.00	
13		57.00		10	8	92	62		32	120.00	
14	40.00	8.00	9	29		2	1		9	40.00	
Por. Twp. Totals		40.00	67.00	189	45	220	69		41	641.00	
<u>T. 7 S., R. 24 E., W. M.</u>		<u>COMPARTMENT NO.4</u>									
6			79			5				258.80	
7	130.38	95.80	48			24	79		3	118.80	
18	150.25	12.80				26	34			125.17	
Por. Twp. Totals		280.63	108.60	127		55	113		96.17	502.77	
Comp. No. 3 Totals		320.63	175.60	316	45	275	182		96.17	1143.77	
<u>T. 7 S., R. 24 E., W.M.</u>		<u>COMPARTMENT NO.5</u>									
5							4			68.00	
6	156.00	61.00			3	30	28			60.00	
7	189.92				2	115				160.00	
8	208.00	3.00	42			195				425.00	
18		31.00	58	1	1	34		166		34.00	
Comp. No. 4 Totals		553.92	95.00	100	1	374	32		166	774.00	
<u>T.7 S., R. 24 E., W.M.</u>		<u>COMPARTMENT NO. 5</u>									
3		112.44		18		20				160.44	
4		159.39	112	119	35	216		10		641.39	
5	44.00	91.30	16	4		197	4			332.30	
8		34.00	69		4	10		20		160.00	
9		155.00	164	132	15	119		43		640.00	
10		3.00	155		24	78		5		260.00	
Comp. No. 5 Totals		44.00	555.13	516	273	78	640	4	50	78	2194.13

TABLE No. 2 (Cont'd)  
ACREAGE SUMMARY OF FOREST TYPES  
CONDON WORKING CIRCLE  
HEPPNER BLOCK

Township and Section Number	Alienated Land Acres	Ponderosa Pine				W-F-Larch-DF		Juniper Acres	Sage-Brush Acres	Grass Acres	Total N.F. Acres
		P4 Acres	P3 Acres	P2 Acres	P1 Acres	FL3 Acres	FL2 Acres				
<u>COMPARTMENT NO. 6</u>											
T. 7 S., R. 24 E., W.M.											
1	160.00	61.40	280		27	207		60		6	641.40
2		310.19	8			111			8	45	482.19
3		276.32		46	4	147			2	6	481.32
10		257.00		49		74					380.00
11		390.00				238				12	640.00
12		30.00		320		7	207	28	12	36	640.00
Por. Twp. Totals	160.00	1324.91	608	95	38	984	28	72	10	105	3264.91
<u>COMPARTMENT NO. 7</u>											
T. 7 S., R. 25 E., W.M.											
5		27.00	38		40	80	14			21	220.00
6		326.57	23		8	196				43	596.57
7		45.00	80		24	6	16			35	206.00
Por. Twp. Totals		398.57	141		72	282	30			99	1022.57
Comp. No. 6 Totals	160.00	1723.48	749	95	110	1266	58	72	10	204	4287.48
<u>COMPARTMENT NO. 8</u>											
T. 7 S., R. 25 E., W.M.											
3		69.00		12	6	24			45	2	158.00
4		247.44		16	18	264	2		91	2	640.44
5		95.80	35		34	52	11	1	2	28	258.80
9		118.00	12	2		80		24	8		244.00
Comp. No. 7 Totals		530.24	47	30	58	420	13	25	146	32	1301.24
<u>COMPARTMENT NO. 9</u>											
T. 7 S., R. 25 E., W.M.											
1	159.25	180.75			3	56					239.75
2	398.99	62.61	4			111			62		239.61
3		202.04	8			138			134		482.04
9		100.00	4	4							108.00
10		411.00	2	4		4		31	16	12	480.00
11	60.00	64.00	35	14		63		12			188.00
Comp. No. 8 Totals	618.24	1020.40	53	22	3	372		43	212	12	1737.40
<u>COMPARTMENT NO. 9</u>											
T. 7 S., R. 25 E., W.M.											
1	120.00	95.00			12	13					120.00
11	100.00	172.00	10	8		40					230.00
12	200.00	380.00			2	50				8	440.00
Comp. No. 9 Totals	420.00	647.00	10	8	14	103				8	790.00
<u>HEPPNER BLOCK TOTALS</u>											
	2116.79	4747.85	2117	474	339	4104	337	190	708.17	306	13323.02

TABLE NO. 2. (Cont'd)  
ACREAGE SUMMARY OF FOREST TYPES  
CONDON WORKING CIRCLE  
SPRAY BLOCK

Township and Section Number	Alienated Land Acres	Ponderosa Pine				WF-Larch-DF		Juniper Acres	Sage-brush Acres	Grass Acres	Total N. F. Acres
		P4 Acres	P3 Acres	P2 Acres	P1 Acres	FL3 Acres	FL2 Acres				
<u>COMPARTMENT NO. 1</u>											
T. 7 S., R. 23 E., W. M.											
13	280.00	60.00	1	4		125				10	200.00
14	80.00	1.00	102	28	30	43				20	224.00
24	240.00	30.00				46	4				80.00
Comp. No. 1 Totals	600.00	91.00	103	32	30	214	4			30	504.00
<u>COMPARTMENT NO. 2</u>											
T. 7 S., R. 24 E., W. M.											
18	239.37	No	Govern	-ment	Acreage						
19	160.00	86.57				73					159.57
20	100.00		152	4		44					200.00
30			12	16		12					40.00
Comp. No. 2 Totals	499.37	86.57	164	20		129					399.57
<u>COMPARTMENT NO. 3</u>											
T. 7 S., R. 24 E., W. M.											
8		12.00			6				10		28.00
17	240.00	178.00	34	30	8	116	4		30		400.00
18	200.00	22.00				18					40.00
20	100.00	27.00	137	65	8	3					240.00
Comp. No. 3 Totals	540.00	239.00	171	95	22	137	4		40		708.00
<u>COMPARTMENT NO. 4</u>											
T. 7 S., R. 24 E., W. M.											
21	200.00	294.00	48		84	14					440.00
22	320.00	151.00	9								160.00
27		8.00		32							40.00
28		7.00		33							40.00
Comp. No. 4 Totals (Incomplete)	520.00	460.00	57	65	84	14					680.00
<u>COMPARTMENT NO. 6</u>											
T. 7 S., R. 25 E., W. M.											
5		78.60	10		8	53	3			8	160.60
6						14					14.00
7		217.68	120			48	18			4	407.68
8		371.00	6			261				2	640.00
9		66.00				18					84.00
Comp. No. 6 Totals		733.28	136		8	394	21			14	1306.28
<u>COMPARTMENT NO. 7</u>											
T. 7 S., R. 25 E., W. M.											
9		197.00			4				3		204.00
10		127.00			9					6	160.00
11		55.00				4		18		3	62.00
Comp. No. 7 Totals		379.00			13	4		21	3	6	426.00
<u>SPRAY BLOCK TOTALS</u>											
	2159.37	1988.85	631	212	157	892	29	21	43	50	4023.85
<u>PROJECT TOTALS</u>											
	4276.16	6736.70	2748	686	496	1264	366	211	751.17	356	17346.87

TABLE NO. 3  
TIMBER SUMMARY BY SECTIONS  
CONDON WORKING CIRCLE  
HEPPNER BLOCK

Township And Section Number	Area N. F. Acres	M. Ft. B. M. for Species									Recent Killed	Cord volume	No. Recent Pond- Pine Trees	No. Dis- eased W.F. Trees	No. of snags all species													
		Ponderosa Pine			LP	D	WF	WL	ES	Total					10"- 20"	22"- 30"	32"- 40"	42"+	Total									
		Mature	Im- mature	Total																								
<b>Compartment No. 1</b>																												
T. 7 S., R. 23 E., W.M																												
11	114.00	110	608	718		568	96	155		1537	38		99	102														
14	296.00	393	566	959		739	260	219		2177	300		995	146	1973	554	55	10		2592								
Comp. No.1 Totals	410.00	503	1174	1677		1307	356	374		3714	338		1094	248	1973	554	55	10		2592								
<b>Compartment No. 2</b>																												
T. 7 S., R. 23 E., W.M																												
11	485.00	488	3406	3894	34	1397	469	725		6519	857		3927	503														
12	200.00	517	88	605		273	280	139		1297	5	2	4	350	542	256	10			808								
Comp. No. 2 Totals	685.00	1005	3494	4499	34	1670	749	864		7816	862	2	3931	853	542	256	10			808								
<b>Compartment No. 3</b>																												
T. 7 S., R. 23 E., W.M																												
11	41.00	199	228	427		122	19	25		593				22						263								
12	440.00	1830	151	1981		342	192	150		2665	45	5	134	533	159	104				474								
13	120.00	325	23	348		138	80	81		647				31	218	221	35			79								
14	40.00	86	11	97		34	19	37		187	16		29	20	20	39	20											
Por. Twp. Totals	641.00	2440	413	2853		636	310	293		4092	61	5	163	606	397	364	55			816								
<b>Compartment No. 4</b>																												
T. 7 S., R. 24 E., W.M																												
6	258.80	1108	723	1831		354	97	43		2325	116		300	141	302	206	53	21		582								
7	118.80	219	156	375		75	42	39		531	4		10	31	182	59	30			271								
18	125.17	78	7	85		182	46	19		332	13	9	20	180														
Por. Twp. Totals	502.77	1405	886	2291		611	185	101		3188	133	9	330	352	484	265	83	21		853								
Comp. No. 3 Totals	1143.77	3845	1299	5144		1247	495	394		7280	194	14	493	958	881	629	138	21		1669								
<b>Compartment No. 4</b>																												
T. 7 S., R. 24 E., W.M																												
5	68.00	575	26	601		97	4	8		710	58	2	40		18	27				45								
6	60.00	41	203	244		361	81	43		729				73	370	133	17			520								
7	160.00	260	158	418		237	60	191	2	908	6	9	20		542	229	30			801								
8	452.00	667	110	777		379	162	234	2	1554	36	86	140	227	276	174	44			494								
18	34.00	102	22	124		56	36	66		282	27		110	30														
Comp. No.4 Totals	774.00	1645	519	2164		1130	343	542	4	4183	127	97	310	330	1206	563	91			1860								
<b>Compartment No. 5</b>																												
T. 7 S., R. 24 E., W.M																												
3	160.44	519	61	580		65	5			650		47			67	79	50	10		206								
4	641.39	2695	992	3687		1241	301	296		5525	173	128	316	517	835	753	110			1698								
5	332.30	1039	160	1199		304	150	113	18	1784		16		190	482	403	180	10		1075								
8	160.00	484	84	568		32	2	15		617		13	9		20	50	20			90								
9	640.00	1843	231	2074		380	158	71		2683		235		100	580	390	30			1000								
10	260.00	243	1017	1260		613	54	46		1973	28	4	69	10	692	410	9	10		1121								
Comp. No. 5 Totals	2194.13	6823	2545	9368		2636	670	541	18	13232	201	443	394	817	2676	2085	399	30		5190								
<b>Compartment No. 6</b>																												
T. 7 S., R. 24 E., W.M																												
1	641.40	1192	1034	2226		657	180	251	9	3323	256	288	530	60	2210	840	120			3170								
2	482.32	2934	224	3158		653	197	137	13	4158		56		264	747	476	208	10		1441								
3	481.32	1537	129	1666		363	120	120	4	2273	4			161	343	236	47			626								
10	380.00	1797	116	1913		580	51	33		2577	1	33	1	226	18	10	1			29								
11	640.00	2929	442	3371		785	408	319	117	5000				427	1079	593	149			1821								
12	640.00	1111	1260	2371		1564	282	247	101	4565	120	78	280	100	2652	1317	140			4109								
Por. Twp. Totals	3264.91	11500	3205	14705		4602	1238	1107	244	21896	381	455	811	1238	7049	3472	665	10		11196								

TABLE NO 3 (Continued)  
TIMBER SUMMARY BY SECTIONS  
CONDON WORKING CIRCLE  
HEPPNER BLOCK

Township And Section Number	Area N. F. Acres	M. Ft. B. M. for Species									Recent killed	Cord Volume WJ	No. Recent Killed Pond. Pine trees	No. Diseased WF Trees	No. of snags all species				
		Ponderosa Pine			LP	D	WF	WL	ES	Total					10"-20"	22"-30"	32"-40"	42+	Total
		Mature	Immature	Total															
<b>Compartment No. 6 Continued</b>																			
T. S., R. 25 E., W.M																			
5	220.00	997	319	1316		288	161	102	58	1,925		5		278	822	270	94	26	1212
6	596.57	4836	337	5173		466	252	240	100	6,231	315	41	384	614	147	120	47	20	334
7	206.00	776	666	1442		349	63	36		1,890	7	4	4	24	656	101	140	30	927
Por. Twp. Totals	1022.57	6609	1322	7931		1103	476	378	158	10,046	322	50	388	916	1625	491	281	76	2473
Compt. No. 6 Totals	4287.48	18109	4527	22636		5705	1714	1485	402	31,942	703	505	1199	2154	8674	3963	946	86	13669
<b>Compartment No. 7</b>																			
T. 7 S., R. 25 E., W.M																			
3	158.00	408	39	447		130	14	31		622		20		53	81	36	13		130
4	640.44	1803	158	1961		834	232	188	94	3309		36		328	364	354	188		906
5	258.80	1962	333	2295		898	173	37	57	3460	65	44	140	179	544	292	106	29	971
9	244.00	1863	314	2177		374	208	50		2809	121	103	257	168	40	39	16		95
Comp. No. 7 Totals	1301.24	6036	844	6880		2236	627	306	151	10200	186	203	397	728	1029	721	323	29	2102
<b>Compartment No. 8</b>																			
T. 7 S., R. 25 E., W.M																			
1	239.75	1664	161	1825		562	26	150		2563	29	12	44		391	379	182		952
2	239.61	1073	117	1190		350	154	226	27	1947	45		51	260	120	70	20		210
3	482.04	1133	115	1248	2	461	119	200	9	2039		62		272	348	267	109		724
9	108.00	669	264	933		88	4	2		1027	20	61	32	4	20	1	7		28
10	480.00	1398	480	1878		95	1	3		1977		264			59	58	12		129
11	188.00	772	79	851		472	83	68		1474	4	39	10	164	53	90	33	2	178
Comp. No. 8 Totals	1737.40	6709	1216	7925	2	2028	387	649	36	11027	98	438	137	700	991	865	363	2	2221
<b>Compartment No. 9</b>																			
T. 7 S., R. 25 E., W.M																			
1	120.00	986	107	1093		200	4	57		1354	42	2	75		237	241	248		726
11	230.00	989	112	1101		149	47	45		1342	2		5	96	157	250	47	13	467
12	440.00	1535	187	1722		503	109	261	16	2611		66		180	500	370	350	30	1250
Comp. No. 9 Totals	790.00	3510	406	3916		852	160	363	16	5307	44	68	80	276	894	861	645	43	2443
<b>Block Totals</b>																			
	133235.02	48185	16024	64209	36	18810	5501	5518	627	94301	2753	1770	8035	7064	18866	10497	2970	221	32554

TABLE NO. 3 (Continued)  
 TIMBER SUMMARY BY SECTIONS  
 CONDON WORKING CIRCLE  
 SPRAY BLOCK

Township and Section Number	Area N.F. Acres	M. Feet B. M. for Species								Recent Killed	Cord Volume WJ	No. Recent Killed Pond. Pine trees	No. Dis-eased WF Trees	No. of Snags All Species					
		Ponderosa Pine			LP	D	WF	WL	ES					Total	10"-20"	22"-30"	32"-40"	42"+	Total
		Mature	Immature	Total															
<b>Compartment No. 1</b>																			
T. 7 S., R. 23 E., W.M.																			
13	200.00	750	112	862		258	52	81		1253		3		28	225	219	69	10	523
14	224.00	278	615	893		434	124	203		1654	41	19	119	216	1089	393	87	21	1590
24	80.00	473	36	509		44	10	11		574					240	120	40		400
Comp't No.1 Totals	504.00	1501	763	2264		736	186	295		3481	41	22	119	244	1554	732	196	31	2513
<b>Compartment No. 2</b>																			
T. 7 S., R. 24 E., W. M.																			
18	No	Gov.	Acreage																
19	159.57	689	137	826		119	14	35		994					304	336	74		714
20	200.00	110	403	513		68	12			593	5	26	19		541	321	30		892
30	40.00	38	32	70		36				106	1		12		71	177			248
Comp't No. 2 Totals	399.57	837	572	1409		223	26	35		1693	6	26	31		916	834	104		1854
<b>Compartment No. 3</b>																			
T. 7 S., R. 24 E., W. M.																			
8	28.00	117	18	135		10	3			148		12							
17	400.00	884	143	1027		342	68	41		1478		17		55	317	481	126		924
18	40.00	63	30	93		25	9	54		181	31		46	19					
20	240.00	975	387	1362		334				1696	173	22	276		404	321	9		734
Comp't No. 3 Totals	708.00	2039	578	2617		711	80	95		3503	204	51	322	74	721	802	135		1658
<b>Compartment No. 4 (Incomplete)</b>																			
T. 7 S., R. 24 E., W.M.																			
21	440.00	1657	340	1997		102		8		2107	908		1820		76	157	10		243
22	160.00	475	197	672		32				704	190	1	409						
27	40.00	148	135	283						283	6	7	10						
28	40.00	37	34	71						71									
Comp't No. 4 Totals (Incomplete)	680.00	2317	706	3023		134		8		3165	1104	8	2239		76	157	10		243
<b>Compartment No. 6</b>																			
T. 7 S., R. 25 E., W.M																			
5	160.60	758	169	927		473	130	51	11	1592		16	9	345	257	126	36		764
6	14.00	113		113		29	5	14		161					4	4			8
7	407.68	1800	763	2563		1165	140	118		3986	11	3	7	52	9	12			73
8	84.00	4519	713	5232		1181	215	445	133	7206	263	71	790	675	438	175			1288
9		461	137	598		33				631		16							
Comp't No.6 Totals	1306.28	7651	1782	9433		2881	490	628	144	13576	274	106	797	137	1072	708	317	36	2133
<b>Compartment No.7</b>																			
T. 7 S., R. 25 E. W.M.																			
9	204.00	1309	613	1922		126	19	17		2084	14	83	30					9	9
10	160.00	632	200	832		77	3			912		104		200	53				253
11	62.00	366	19	385		81	13	12		491	1	6	5	40	50	10			100
Comp't No. 7 Totals	426.00	2307	832	3139		284	35	29	144	3487	15	193	35	240	103	10	9		362
<b>BLOCK TOTALS</b>	4023.85	16652	5233	21885		4969	817	1090		28905	1644	406	3543	455	4579	3336	772	76	8763
<b>PROJECT TOTALS</b>																			
<b>2 Blocks</b>	17346.87	64837	21257	86094	36	23779	6318	6608	771	123606	4397	2176	11578	7519	23445	13833	3742	297	41317

TABLE NO. 4  
SUMMARY OF NUMBER OF POLES  
CONDON WORKING CIRCLE

HEPPNER BLOCK

Township and Section Number	Ponderosa Pine						Lodgepole Pine	Douglas Fir		White Fir		Western Larch		Englemann Spruce		Total			
	Mature		Immature		Total			4"-7"	8"-11"	4"-7"	8"-11"	4"-7"	8"-11"	4"-7"	8"-11"	4"-7"	8"-11"	4"-7"	8"-11"
	4"-7"	8"-11"	4"-7"	8"-11"	4"-7"	8"-11"													
<u>T. 7 S., R. 23 E. W.M.</u>	<b>Compartment No. 1</b>																		
11			280	119	280	119		6	23	6	1751	1356	3	12			2057	1499	
14			5520	738	5520	738			496	468	2352	1121	242	468			8610	2795	
Comp't No.1 Totals			5800	857	5800	857		6	519	474	4103	2477	245	480			10667	4294	
<u>T. 7 S., R. 23 E. W.M.</u>	<b>Compartment No.2</b>																		
11			1144	451	1144	451	2424	1008	1817	1066	11661	6042	878	783			17924	9350	
12			868	338	868	338			259	247	1595	876	585	532			3307	1993	
Comp't No 2 Totals			2012	789	2012	789	2424	1008	2076	1313	13256	6918	1463	1315			21231	11343	
<u>T. 7 S., R.23 E. W.M</u>	<b>Compartment No.3</b>																		
11			247	94	247	94		2	414	266	721	182	245	94			1627	638	
12			1498	622	1498	622			311	198	4092	2001	301	318			6202	3139	
13			123	143	123	143			20	62	250	220	20	35			413	460	
14			1470	323	1470	323			29	39	323	196	10	10			1832	568	
Por. Twp. totals			3338	1182	3338	1182		2	774	565	5386	2599	576	457			10074	4805	
<u>T. 7 S., R. 24 E. W.M.</u>																			
6			1497	768	1497	768			610	421	1407	750	125	21			3639	1960	
7			321	134	321	134			69	40	1296	848	92	84			1778	1106	
18			80	110	80	110			180	50	730	380	20	10			1010	550	
Por. Twp. Totals			1898	1012	1898	1012			859	511	3433	1978	237	115			6427	3616	
Comp't No.3 Totals			5236	2194	5236	2194		2	1633	1076	8819	4577	813	572			16501	8421	
<u>T.7 S., R. 24 E., W. M.</u>	<b>Compartment No.4</b>																		
5			296	461	296	461			310	340	330	357	40	40			976	1198	
6				21		21			453	300	762	453	45				1260	774	
7			811	403	811	403			371	184	897	410	917	381			2996	1378	
8			479	684	479	684			534	264	2617	1244	50	220			3680	2412	
18			130	90	130	90			30		950	860	20	40			1130	990	
Comp't No.4 Totals			1716	1659	1716	1659			1698	1088	5556	3324	1072	681			10042	6752	
<u>T. 7 S., R. 24 E., W.M.</u>	<b>Compartment No.5</b>																		
3			67	77	67	77		10	10	30	50	40					127	147	
4			7311	2065	7311	2065			1504	1286	4101	2373	395	376			13311	6110	
5			68	290	68	290			40	220	90	197	50	170			248	877	
8			125	387	125	387				84		34		12			126	517	
9			830	790	830	790			280	330	600	850					1710	1970	
10			3377	1075	3377	1075											3377	1075	
Comp't No. 5 Totals			11779	4684	11779	4684		10	1834	1950	4841	3494	445	558			18899	10696	

TABLE NO. 4 (Continued)  
SUMMARY OF NUMBER OF POLES  
CONDON WORKING CIRCLE  
HEPPNER BLOCK

Township and Section Number	Ponderosa Pine						Lodgepole Pine		Douglas Fir		White Fir		Western Larch		Engelmann Spruce		Total All species	
	Mature		Immature		Total		4"-7"	8"-11"	4"-7"	8"-11"	4"-7"	8"-11"	4"-7"	8"-11"	4"-7"	8"-11"	4"-7"	8"-11"
	4"-7"	8"-11"	4"-7"	8"-7"	4"-7"	8"-11"												
<b>T. 7 S. R. 24 E., W.M.</b>																		
1			4450	1760	4450	1760	260	60	2220	2380	4640	2380	880	800			12450	7380
2			2558	632	2558	632			613	275	1320	518	99	64			4590	1489
3			125	159	123	159			49	191	60	238	53	44			285	632
10			3704	1487	3704	1487			1418	659	922	657	31	22			6075	2825
11			4034	1510	4034	1510	10		945	341	2823	1242	386	215			8198	3308
12			4463	1740	4463	1740	3860	180	1470	1375	3813	3084	450	520			14056	6899
<b>Por. Twp. Totals</b>			19332	7288	19332	7288	4130	240	6715	5221	13578	8119	1899	1665			45654	22533
<b>T. 7 S. R. 25 E., W.M.</b>																		
5			1692	586	1692	586			411	141	1477	733	300	232	130	70	4010	1762
6			10518	1419	10518	1419			694	356	4153	1380	1641	501	942	269	17948	3925
7			1326	335	1326	335			484	119	788	291	128	41			2726	784
<b>Por. Twp. Totals</b>			13536	2340	13536	2340			1589	616	6418	2404	2069	774	1072	339	24684	6473
<b>Comp't No. 6 Totals</b>			32868	9628	32868	9628	4130	240	8304	5837	19996	10523	3968	2439	1072	339	70338	29006
<b>T. 7 S. R. 25 E., W.M.</b>																		
3			91	148	91	148			53	114	37	64					181	326
4			193	350	193	350			40	194	136	519	50	160			419	1263
5			3035	637	3035	637			616	527	2466	1187	159	65	250		6526	2556
9			2637	933	2637	933			587	196	1245	642	75	24			4524	1795
<b>Comp't No. 7 Totals</b>			5956	2068	5956	2068			1276	1031	3884	2412	284	249	250		11650	5940
<b>T. 7 S. R. 25 E., W.M.</b>																		
1			2824	1023	2824	1023			634	550	1164	1370					4622	2943
2			690	473	690	473			110	100	753	645	152	257			1705	1475
3			259	241	259	241			140	287	249	430	40	130			688	1088
9			1235	549	1235	549			122	33	62	10	3				1422	592
10			4199	1722	4199	1722			23			42					4222	1764
11			888	356	888	356			101	509	1212	546	60	50			2261	1461
<b>Comp't No. 8 totals</b>			10095	4364	10095	4364			1130	1479	3440	3043	255	437			14920	9323
<b>T. 7 S. R. 25 E., W.M.</b>																		
1			800	300	800	300			237	224	483	418	59	82			1579	1024
11			614	439	614	439			45	31	165	109	15				839	579
12			970	800	970	800			1220	630	570	650	320	240			3080	2320
<b>Comp't No. 9 Totals</b>			2384	1539	2384	1539			1502	885	1218	1177	394	322			5498	3923
<b>BLOCK TOTALS</b>			77846	27782	77846	27782	6554	1266	19972	15133	65113	37945	8939	7053	1322	519	179746	89698

TABLE NO.4 (continued)  
SUMMARY OF NUMBER OF POLES  
CONDON WORKING CIRCLE  
SPRAY BLOCK

Township and Section Number	Ponderosa Pine						Lodgepole Pine	Douglas Fir		White Fir		Western Larch		Engelmann Spruce		Total All Species		
	Mature		Immature		Total			4"-7"	8"-11"	4"-7"	8"-11"	4"-7"	8"-11"	4"-7"	8"-11"	4"-7"	8"-11"	
	4"-7"	8"-11"	4"-7"	8"-11"	4"-7"	8"-11"												
T. 7 S., R. 23 E., W.M.							<b>Compartment No. 1</b>											
13			190	149	190	149			89	89	538	267	40	77			857	582
14			9230	1634	9230	1634			360	239	1028	394	560	84			11178	2351
24			40	70	40	70			10	30	90	60	20	30			160	190
<b>Comp't No. 1 Totals</b>			9460	1853	9460	1853			459	358	1656	721	620	191			12195	3123
T. 7 S., R. 24 E., W.M.							<b>Compartment No. 2</b>											
18		No	Gov.	Acreage														
19			130	217	130	217			149	70	165	76					444	363
20			8604	2482	8604	2482			1825	908	741	271		30			11170	3691
30			1628	684	1628	684			1180	425							2808	1109
<b>Comp't No 2 Totals</b>			10362	3383	10362	3383			3154	1403	906	347		30			14422	5163
T. 7 S., R. 24 E., W.M.							<b>Compartment No. 3</b>											
8			81	136	81	136			6	21	53	30					140	187
17			496	294	496	294			686	463	394	270		30			1576	1057
18			761	87	761	87			18		245	91	9	36			1033	214
20		1008	8058	3762	8058	4770			1017	484	28	21					9103	5275
<b>Comp't No.3 Totals</b>		1008	9396	4279	9396	5287			1727	968	720	412	9	66			11852	6733
T. 7 S., R. 24 E., W.M.							<b>Compartment No.4</b>											
21			8004	3010	8004	3010			610	212	42	12					8656	3234
22			2671	954	2671	954			215	174	10						2896	1128
27			1710	450	1710	450											1710	450
28			560	230	560	230											560	230
<b>Comp't No. 4 Totals (Incomplete)</b>			12945	4644	12945	4644			825	386	52	12					13822	5042
T. 7 S., R. 25 E., W.M.							<b>Compartment No.6</b>											
5			907	181	907	181			442	238	885	497	300	136	190	40	2724	1092
6			11	7	11	7			40	14	83	33	11	7			145	61
7			2529	716	2529	716			1499	721	3041	1092	447	224			7516	2753
8			6250	2901	6250	2901			1877	1054	2327	1062	346	306	919	300	11719	5623
9			1234	423	1234	423			59	92	8	17					1301	532
<b>Comp't No. 6 Totals</b>			10931	4228	10931	4228			3917	2119	6344	2701	1104	673	1109	340	23405	10061
T. 7 S., R. 25 E., W.M.							<b>Compartment No.7</b>											
9			3768	1203	3768	1203			693	229	136	19	80	20			4677	1471
10			1150	544	1150	544			74	42	24	15					1248	601
11			425	150	425	150			20	10	340	120	5				790	280
<b>Comp't No.7 Totals</b>			5343	1897	5343	1897			787	281	500	154	85	20			6715	2352
<b>BLOCK TOTALS</b>		1008	58437	20284	58437	21292			10869	5515	10178	4347	1818	980	1109	340	82411	32474
							<b>Project Totals</b>											
		1008	36283	48066	136283	49074	6554	1266	30841	20648	75291	42292	10757	8033	2431	859	262157	122172

TABLE NO. 5

Block Name	Acreage N.F.	Timber Estimate, M. Feet B. M.								
		Ponderosa Pine			LP	D	WF	WL	ES	Total
		Mature	Immature	Total						
Heppner	13,323	48,185	16,024	64,209	36	18,810	5,501	5,518	627	94,701
Spray	4,024	16,652	5,233	21,885	-	4,969	817	1,090	144	28,905
Totals	17,347	64,837	21,257	86,094	36	23,779	6,318	6,608	771	123,606

SUMMARY OF TIMBER ESTIMATE

VI. CONCLUSION

By referring to the preceding summaries, and based on the acreage of timberland types for the Government lands, the following averages are obtained:

1. Estimated per acre stand of timber, net, all  
species-----6,514 ft. B.M.
2. Number of snags per acre ----- 2.2
3. Number of small poles, 4"-7" class, per acre----- 13.8
4. Number of large poles, 8"-11" class, " " ----- 6.4

A Cost Report pertaining to this project will be submitted under separate cover.

*Fred A. Matz.*

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Fred A. Matz,  
Chief of Timber Surveys.

Approved: November 5, 1934

J. F. IRWIN  
Forest Supervisor

Approved: November 10, 1934

F. H. BRUNDAGE FEA  
Assistant Regional Forester.

Cost Report

I. Acreage and Mileage

Gross area mapped ----- 18,027 acres  
 National Forest area mapped (net) ----- 17,347 "

Basis of intensiveness of cruises:

10% basis ----- 17,947 acres  
 5% basis ----- 80 "

Number of miles of transit level lines ----- 26  
 Number of miles of compass, with A. altimeter ----- 59 1/2  
 Number of miles of strip survey (cruising) lines ----- 225

Estimated timber volume in project ----- 123,606 M. ft.B.M.

II. Expenses

All subsistence was furnished at CCC camp.

Travel for Frank Flack, transit man ----- \$51.80

Automobile transportation, including all items of cost

In operation and repairs, estimated per man day  
 Average ----- .15

Estimated average daily expense per man, not including  
 Transportation and foreman, Chief of Party ----- 1.50

III. Field Work

Average size of crew ----- 11 men

Average individual monthly salary, not including foreman \$30.00

Foreman, Chief of Party, salary per month ----- \$165.00

Cost distribution by activities:

(a) Supervision

Man days ----- 49

Salary ----- \$269.50

Expense (Pd. Mileage) 32.45

Total ----- \$301.95

(b) Transit level control:

Man days ----- 38

Salary ----- \$134.11

Expense (pro rated) ----- 81.50

Total ----- \$215.61

(c) Compass and altimeter control:	
Man days -----	137 ½
Salary-----	\$148.75
Expense (pro rated)-----	222.75
Total-----	\$371.50
(d) Strip Cruising:	
Man days -----	288
Salary-----	\$292.50
Expense (pro rated)-----	473.55
Total-----	\$766.05
(e) Computing and office work:	
Man days -----	50
Salary-----	\$97.25
Expense (pro rated)-----	65.18
Total-----	\$162.43
(f) Travel, moving and miscellaneous:	
Man days -----	50 ½
Salary-----	\$93.25
Expense (pro rated)-----	67.65
Total-----	\$160.90
(g) Sundays, holidays and leave:	
Man days -----	250
Salary-----	\$326.50
Expense (pro rated)-----	384.45
Total-----	\$710.95
(h) Total Cost of Field Work:	
Man days -----	863
Salary-----	\$1,361.86
Expense (pro rated)-----	1,387.53
Total-----	\$2,689.39

#### IV. Headquarters, Office Work

(a) Computations:	
Man days -----	28
Salary-----	\$169.91
Total-----	\$169.91
(b) Map making, Drafting and Printing:	
Man days -----	12 ½
Salary-----	\$93.29
Expense -----	9.00
Total-----	\$102.29
(c) Map compilations:	
Man days -----	30
Salary-----	\$162.95
Expense -----	1.00
Total-----	\$163.95
(d) Written reports:	
Man days -----	12
Salary-----	\$123.96
Total-----	\$123.96

(e) Total Cost of Headquarters Office Work:	
Man days -----	82 ½
Salary-----	\$550.11
Expense -----	\$10.00
Total-----	\$560.11

V. Summarized Cost of Project:

1. Field and Headquarters Office:	
Man days -----	945 ½
Salary-----	\$1,911.97
Expense -----	1,337.53
Total-----	\$3,249.50
2. Cost per acre for gross area mapped:-----	\$0.1802
3. Cost per acre of national forest area mapped:	
(a) Field work-----	\$0.1550
(b) Headquarters -----	0.0323
Total-----	\$0.1873
4. Cost per M. feet B.M. cruised by	
Methods-----	\$0.0263

*Fred A. Matz*

Fred A. Matz  
Chief of Timber Surveys.