WORK PLAN

STUDY NO. 76 HEAVY IMPROVEMENT CUTTING

SECTION 30, T49N-R35W

James A. Johnson

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WORK PLAN

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Sec. 30, T49N-R34W

(1972)

I. Introduction and Objective:

The cutting unit is comprised of approximately 70 acres located in the SW 1/4, of Section 30, T49N-R33W. The area is bounded on the north and east by a stream which traverses diagonally NW through Sec. 30 and on the south by the main access road. (See map appendix). The 10 CFI plots within the proposed cutting unit indicate a gross sawlog volume of 10,640.7 b.f. (Int. 1/4 Rule) and 8,917.1 b.f. net per acre in 1971. The stand is stocked with a large volume of cull, overmature and highly defective trees that are badly in need of harvest. Approximately one-third of the gross volume should be immediately removed.

The objective of the study is a continuation of the improvement cuttings begun in 1961 for the purpose of improving the growing stock of the whole research forest by a series of annual improvement cuttings. It appears that markets will be available for all products.

II. Procedures:

Marking of the tract for harvest will begin immediately. All trees will be tallied on Scribner Cumulative tally sheets for an estimation of marked volumes by species. Cull tree volumes will be recorded separately from the merchantable trees. A sample of cull percent and butt-log grade will be determined on every fifth merchantable marked tree. This will allow for the calculation of an estimated

net volume and value of products harvested. Marking will be contained predominately to the cull trees, and merchantable trees in the 35 - 50% cull classes. Defective low quality pole size trees will also be marked.

Standing tree records will be tallied on all sawlog size trees within the study plots. When logging commences, felled tree measurements will be taken on these trees. All logs outside of the study plots will be scaled in the mill yard according to the N.H.P.A. log grading rules. All logs designated for sawing will be numbered for sawmill identification.

POST MARKING INFORMATION

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The marking tally indicated an estimated volume of 3,725 b.f. gross (Scribner) and 1,412 b.f. net volume per acre based on an estimated 70 acre tract. A survey of markets indicates a market for all products. The marking estimates a volume of 98,900 b.f. net (Scribner) sawlogs, 1,030 tons at hardwood pulpwood and cullwood and 213 cords of hemlock pulpwood.

The sale will be advertized on July 17, 1972 with bids received and opened on July 24, 1972. The hardwood pulpwood contract ends on November 1, 1972, therefore, the completion date of the sale should be November 1, 1972.

TABLE 1A. STUDY NO. 76 HEAVY IMPROVEMENT CUTTING (M-4 Volumes before cutting 1971)

C.F.I. Plot Number	Board[1] Feet Gross	Board Feet Net	Cords Gross	Cords Net	Cubic Feet Gross	Cubic Feet Net	Basal Area
1605	2,485.4	1,635.4	3.311	1.280	777.81	586.01	26.09
1609	2,628.8	2,088.1	2.265	2.034	852.28	788.56	28.22
1623	3,517.9	3,050.3	2.941	1.104	1,076.93	881.24	37.38
1627	2,249.0	2,076.0	.882	.854	634.87	606.06	21.89
1527	1,472.8	1,195.0	4.582	2.629	748.11	558.42	25.42
1549	2,853.8	2,403.5	4.334	3.266	1,045.46	908.79	33.74
1641	3,101.5	2,816.3	1.292	0.985	867.83	811.84	30.91
1645	2,132.9	1,851.2	2.487	2.349	693.39	646.34	27.46
1663	3,398.0	2,857.6	2.033	0.985	969.17	820.68	32.33
1667	1,955.6	1,696.4	2.631	2.483	649.37	613.95	23.90
TOTALS (unadjusted)	25,795.7	21,669.8	26.758	17.969	8,315.22	7,216.89	287.34
Per Acre Vols. (Adjusted)[2]	12,897.8	10,834.9	13.379	8.984	4,157.61	3,608.44	143.67
B.F. Vols. Per A.	10,640.7	8,917.1					

(1) Board foot volumes International 1/4 Rule, Variable top, 8" d.i.b. minimum.

(2) Board foot volumes reduced by a correction factor of 17.5 percent.

TABLE 2A. SUMMARY OF MARKING TALLY, STUDY NO. 76 HEAVY IMPROVEMENT CUTTING, Sec. 30, T49N-R33W

Trees Tallied on Scribner Cumulative Tally Sheets

I. Estimated Merchantable Tree Volumes

Species	B.F. Gross[1] Volume Corrected	B.F. Volume[2] Net	B.F. Net Volume Including 15% Overrun
Sugar Maple	86,394	68,251	78,489
Yellow Birch	27,835	21,990	25,288
Hemlock	4,604	3,821	4,394
Red Maple	4,488	3,860	4,439
White Spruce	698	644	741
Black Ash	231	214	246
Black Cherry	132	122	140
	124,377	98,902	113,737

II. Estimated Cull Tree Volume

Sugar Maple	81, 543
Yellow Birch	37, 801
Red Maple	17,011
	136,355 @ 7 ton/M = 954.48 tons

III. Pulpwood Volumes

	B.F. Gross[1] Volume Corrected	Cords
Hemlock (sawlog size)	82,000 @ 25 cds/M =	205
Hemlock (Pole size)		8
Hardwood Pulpwood(pole size)	(2.8 T/cd. = 75 ton)	27

(1) Volume table correction factor 17.5% reduction.

(2) Every fifth merchantable tree sampled for cull percent to obtain net volumes.

TABLE 3A STUDY NO. 76 TREE GRADE SAMPLE

I. Estimated Percent Grades (Butt Log Grade)

Species	Percent Tree Grade (Marking Tally) Grade #1	Grade #2	Grade #3
Sugar Maple	7	59	34
Yellow Birch	53	44	3
Red Maple	22	54	24

II. Board Foot Estimated Volumes by Tree Grades

Species	Board Foot Volume (Scribner) by Tree Grade Grade #1	Grade #2	Grade #3
Sugar Maple	5,495	46,308	26,686
Yellow Birch	13,402	11,127	759
Red Maple	977	2,397	1,065

III. Log Grade Mix using FFC Research Note No. 2

Species	Tree Grade	Log Grade Mix (Percent) Grade #1	Grade #2	Grade #3
Sugar Maple	1	47	34	19
Sugar Maple	2	0	68	32
Sugar Maple	3	0	4	96
Yellow Birch	1	60	25	15
Yellow Birch	2	0	80	20
Yellow Birch	3	0	13	87
Red Maple	1	59	28	13
Red Maple	2	0	68	32
Red Maple	3	0	0	100

IV. Log Grade Mix Board Feet

Species	Tree Grade	Log Grade Mix (Board Foot Scribner) Grade #1	Grade #2	Grade #3
Sugar Maple	1	2,583	1,868	1,044
Sugar Maple	2	0	31,490	14,818
Sugar Maple	3	0	1,068	25,618
Yellow Birch	1	8,042	3,350	2,010
Yellow Birch	2	0	8,902	2,225
Yellow Birch	3	0	99	660
Red Maple	1	576	274	127
Red Maple	2	0	1,630	767
Red Maple	3	0	0	1,065

TABLE 4A. Study No. 76 Heavy Improvement Cutting Estimated Conversion Value

Species	Net B. F.[1] Scribner	Estimated Log Grades	Quality[2] Index	Unit Price[3] Per M.b.f.	Estimated Conv. Value
Sugar Maple	2,583	1	.96	$ 163.20	$421.54
Sugar Maple	34,426	2	.71	120.70	4,155.22
Sugar Maple	41,480	3	.53	90.10	3,737.35
Yellow Birch	8,042	1	1.31	222.70	1,790.95
Yellow Birch	12,351	2	.90	153.00	1,889.70
Yellow Birch	4,895	3	.67	113.90	557.54
Red Maple	576	1	.90	144.00	82.94
Red Maple	1,904	2	.65	104.00	198.02
Red Maple	1,959	3	.55	88.00	172.39
Hemlock	4,394	0	0	80.00	351.52
W. Spruce	741	00	0	80.00	55.44
Black Ash	246	3	.55	82.50	20.29
Black Cherry	140	3	.55	82.50	11.55
	113,737				$13,444.45

(1) Volumes include 15% estimated overrun.

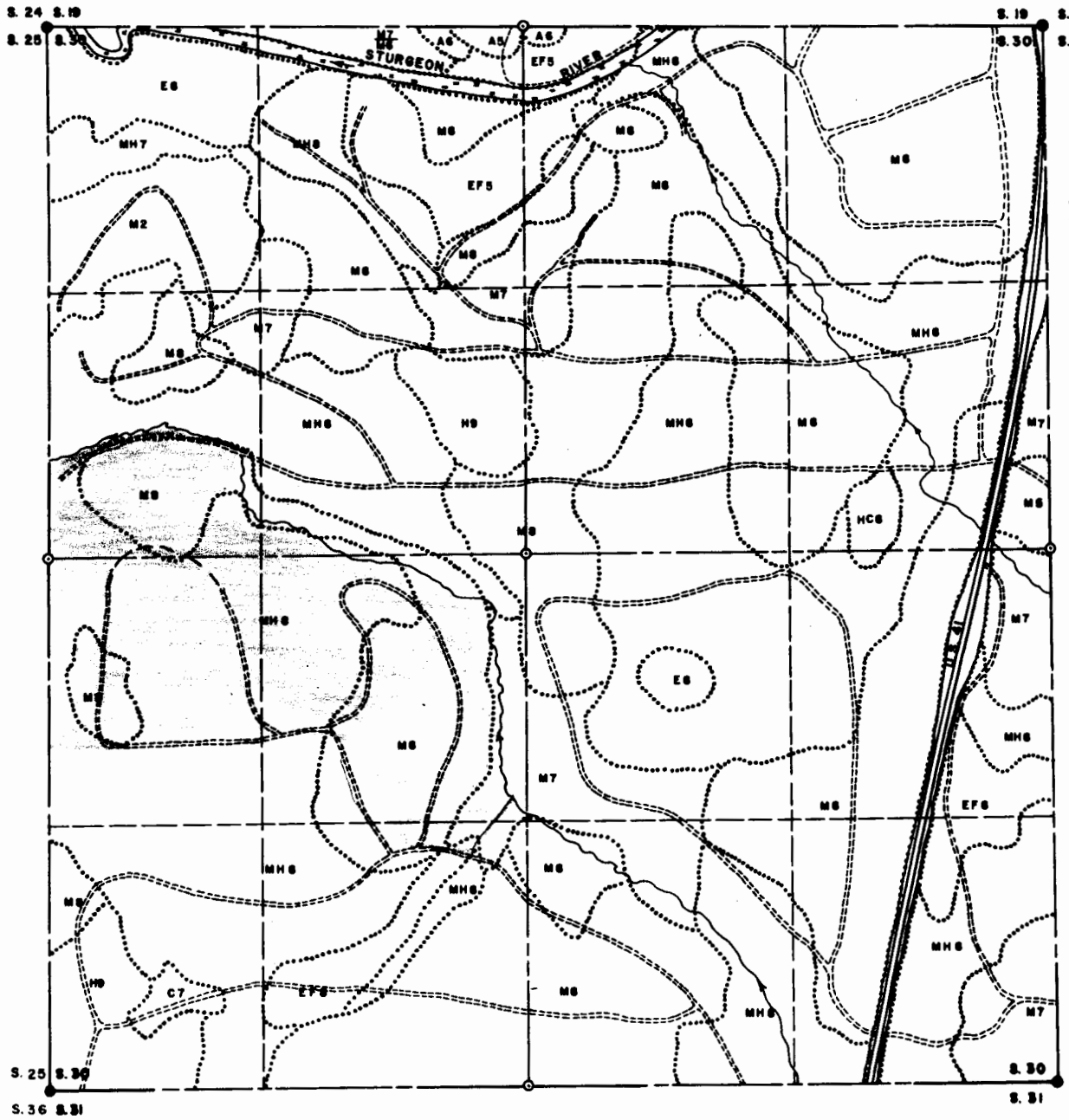
(2) Quality index obtained from FFC mill scale studies.

(3) Quality index multiplied by current price No. 1C lumber gives unit price per M.b.f.

1972 prices for No. 1C lumber: Sugar Maple $170/M Red Maple $160/M

Yellow Birch 170/M Black Ash 150/M

Black Cherry 160/M



FORD FORESTRY CENTER

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Section 30, T49N - R33W

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SCALE

0 5 10 CHAINS

LEGEND

- Paved Highway
- Forest Road
- Foot Trail
- Section Line
- Quarter Section Line
- Forty Line
- Section Corner
- Quarter Section Corner
- Rapids

- A Aspen
- C Cedar
- E Lowland Hardwoods
- F Spruce - Fir
- H Hemlock
- M Northern Hardwoods
- 2 Reprod. - Adequate Stocking
- 5 Poles - Medium Stocking
- 6 Poles - Good Stocking
- 7 Sawtimber - Poor Stocking
- 8 Sawtimber - Medium Stocking
- 9 Sawtimber - Good Stocking

Jan., 1965