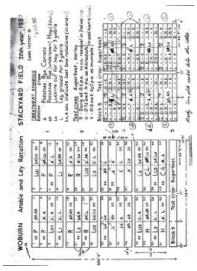
Collection of Plans for the Woburn Ley-arable Experiment



Full Table of Content

Default Title

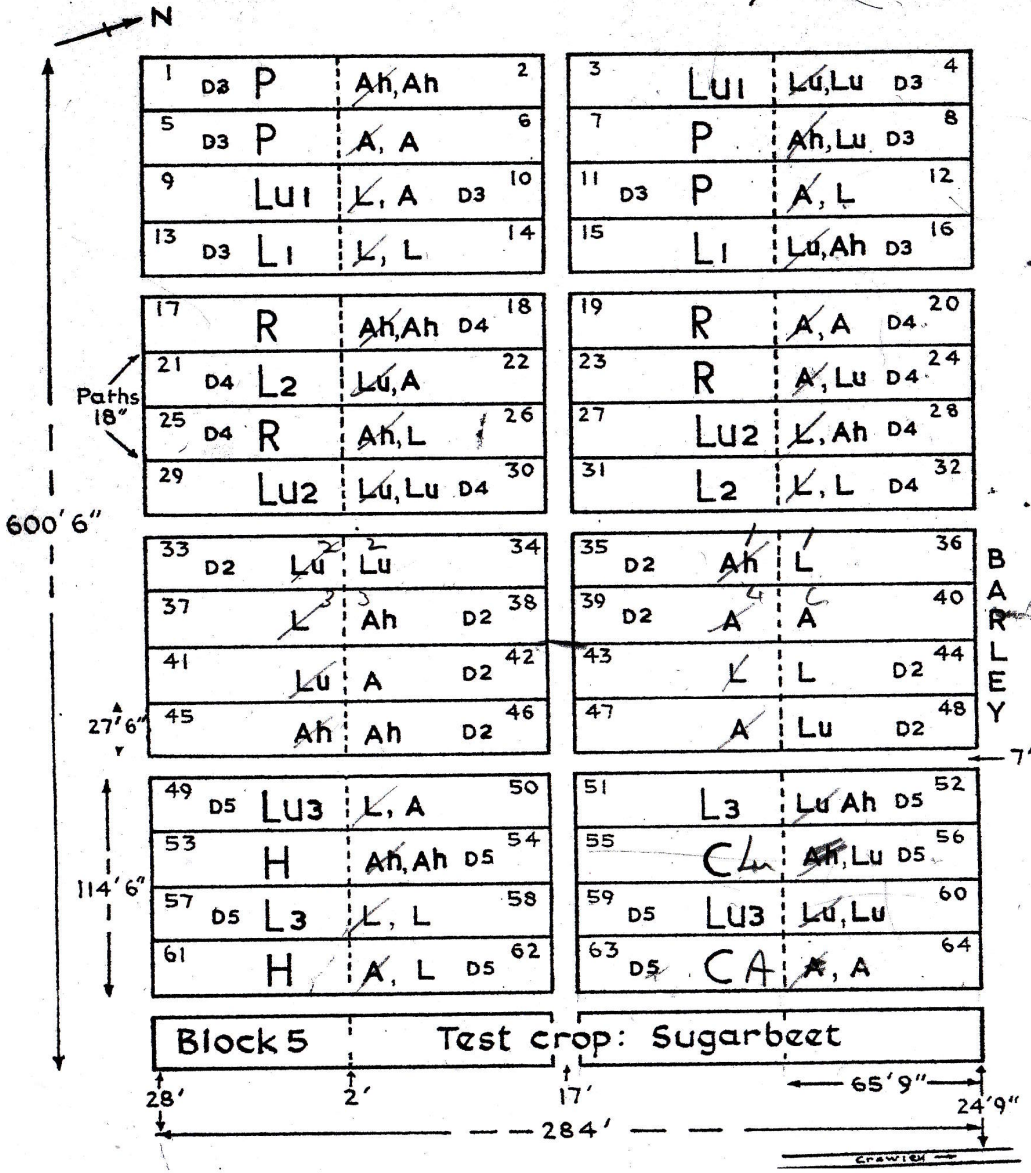
Rothamsted Research

Rothamsted Research (1957-79) *Default Title ;* Collection Of Plans For The Woburn Ley-Arable Experiment, pp 1 - 42

WOBURN Arable and Ley Rotation STACKYARD FIELD 20th year 1957

Code letter G

- 4 MAR 1957



TREATMENT SYMBOLS

Rotation	Crops
A	Potatoes, Rye, Carrots
Ah	Potatoes Rye (undersown) Hay (2 cuts)
Lu	Lucerne cut for hay for 3 years
L	Ley grazed for 3 years

Lu, A etc. indicate last two rotations (in order)

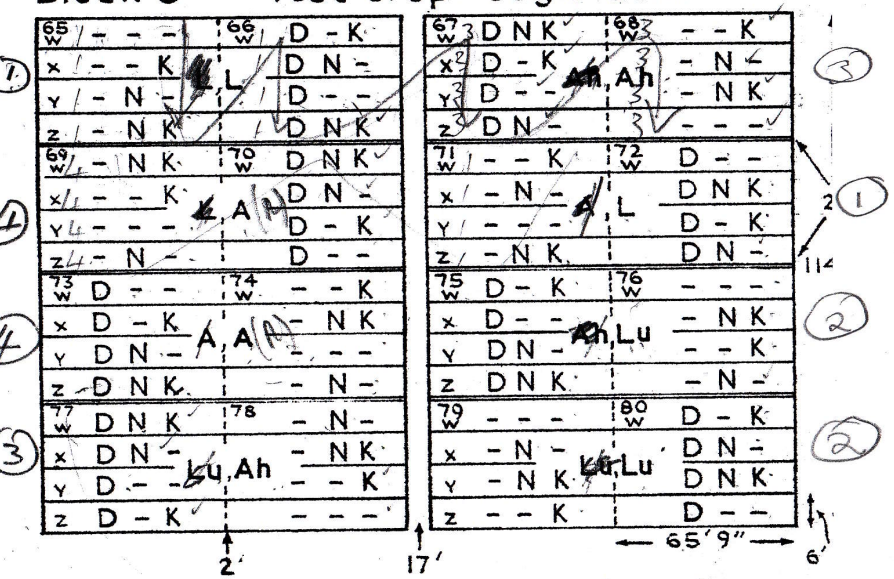
Test crops Sugarbeet, barley

D - Dung at 15 t.p.a. D2 etc. residual in 2nd. etc crop

N - 0·72 cwt. N p.a. as Nitrochalk } in addition to basal

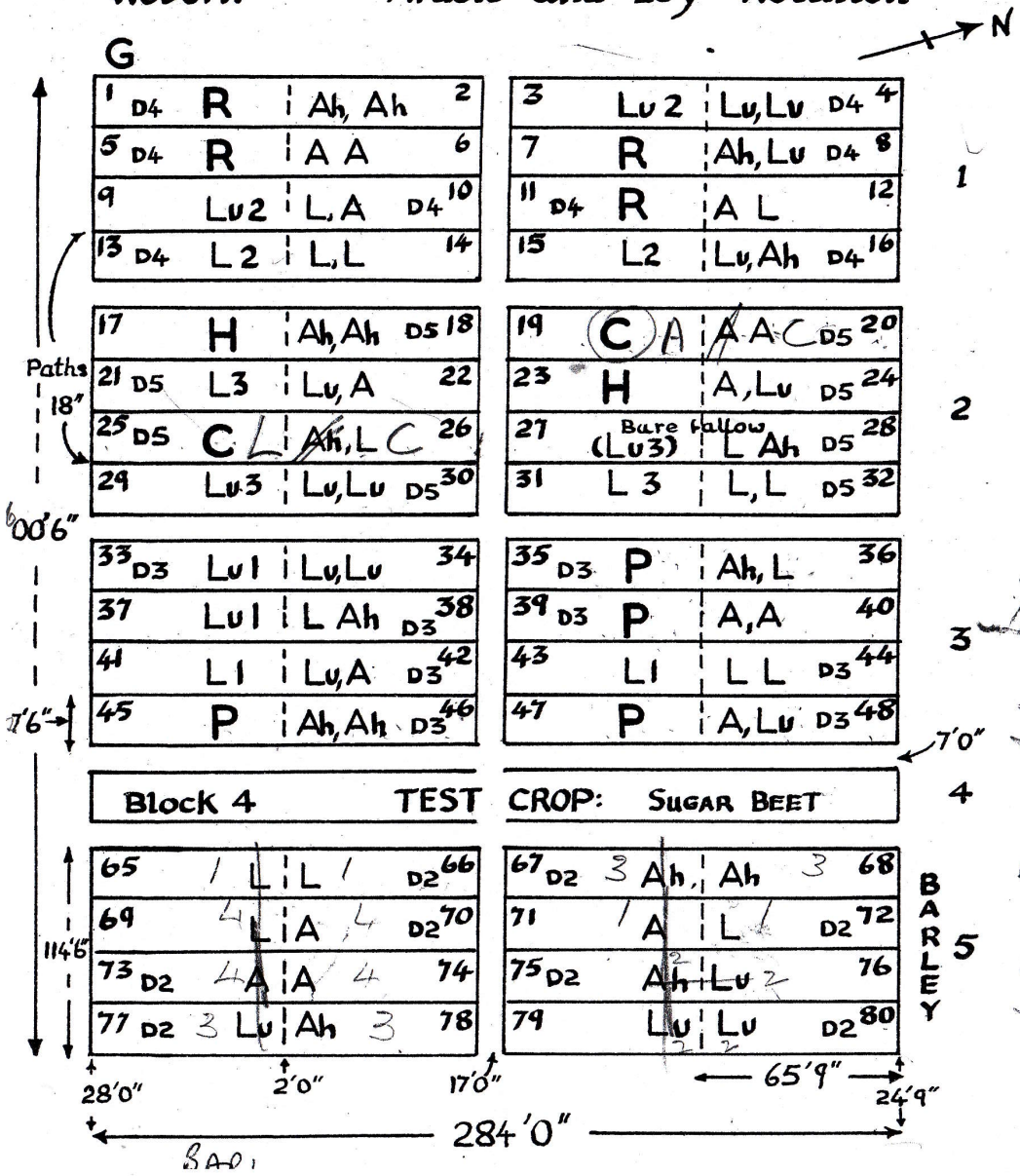
K - 0·9 cwt. K_2O p.a. as muriate }

Block 5 Test crop: Sugarbeet



Barley. Some plots carted later than others.

Woburn Arable and Ley Rotation — STACKYARD — 21st year 1958



TREATMENT SYMBOLS

Rotation	Crops
A	Potatoes, Rye, Carrots
Ah	Potatoes, Rye (undersown) Hay (2 cuts)
Lu	Lucerne cut for hay for 3 years
L	Ley grazed for 3 years

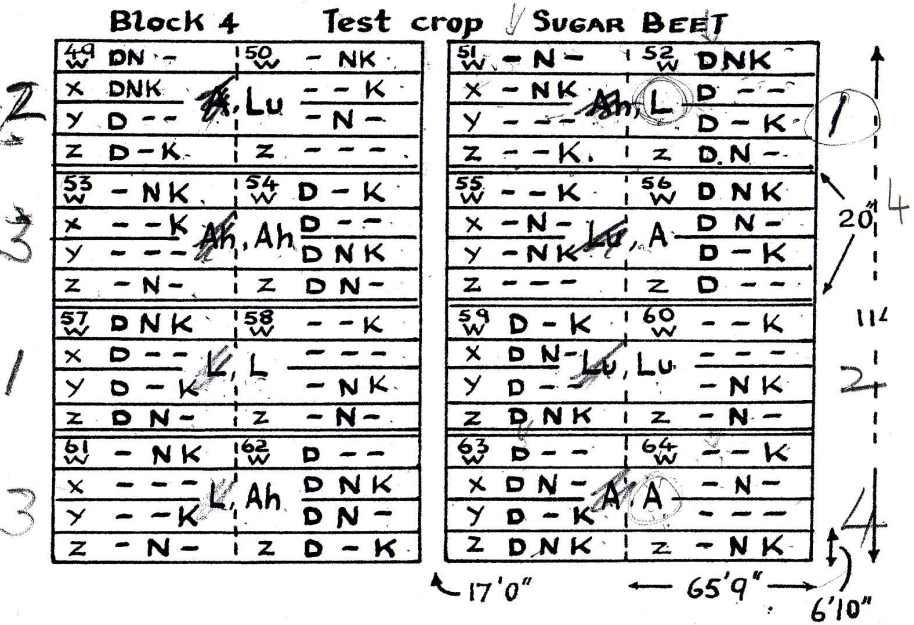
Lu,A etc. indicate last two rotations (in order)

Test Crops Sugar beet, barley

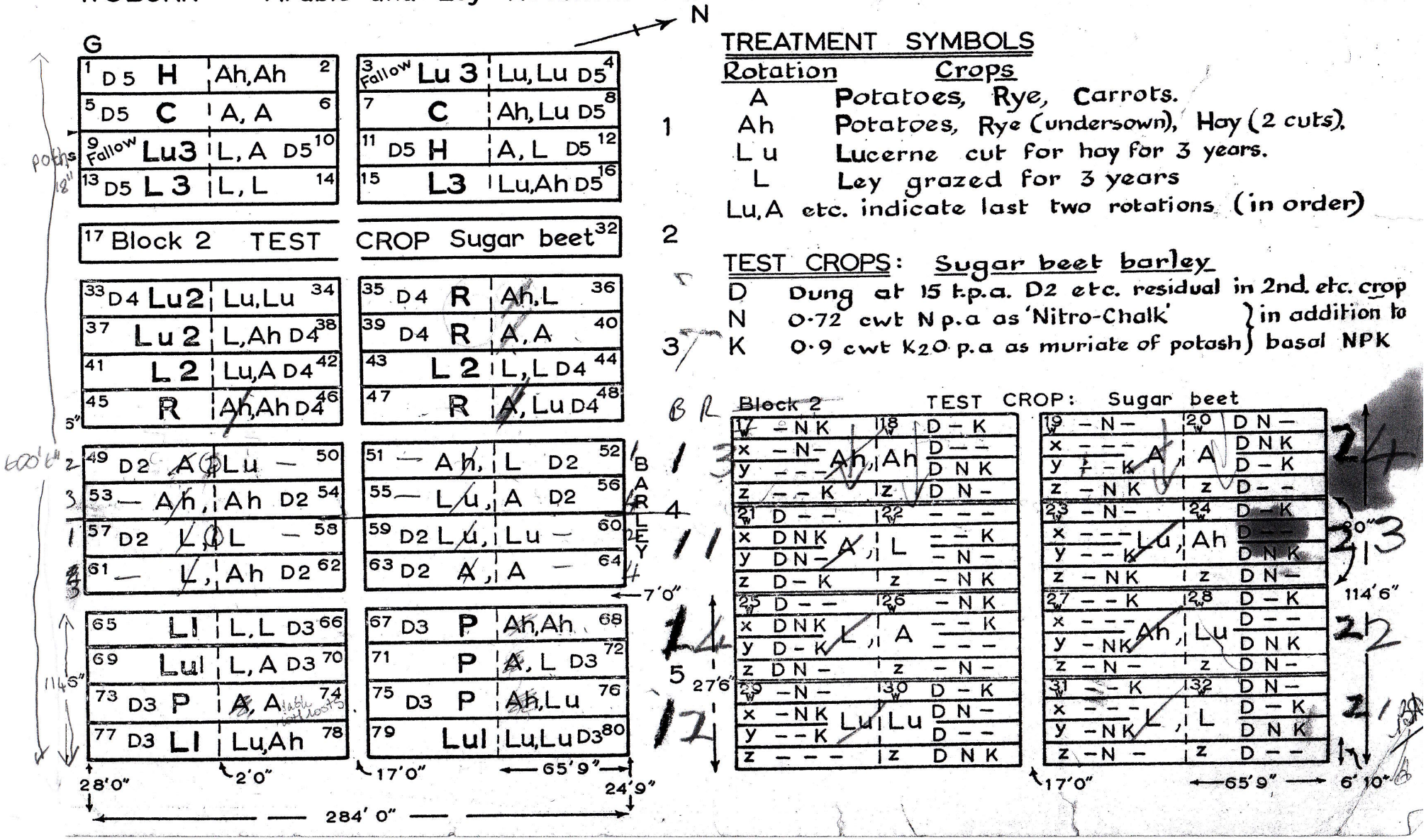
D Dung at 15 t.p.a. D2, etc. residual in 2nd.e

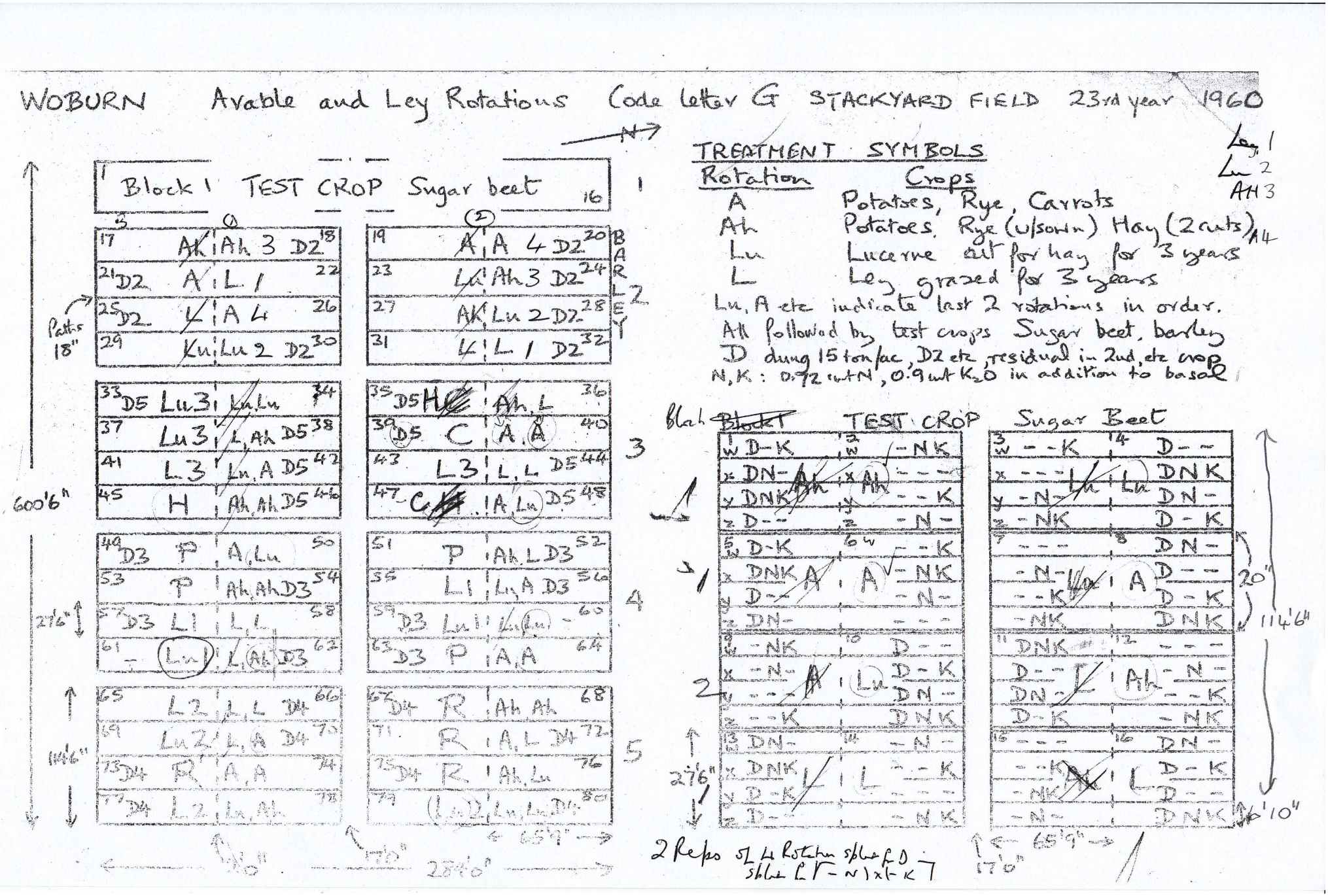
N 0·72 cwt N p.a. as Nitro-Chalk } in additio

K 0·9 cwt K_2O p.a. as muriate } basal man

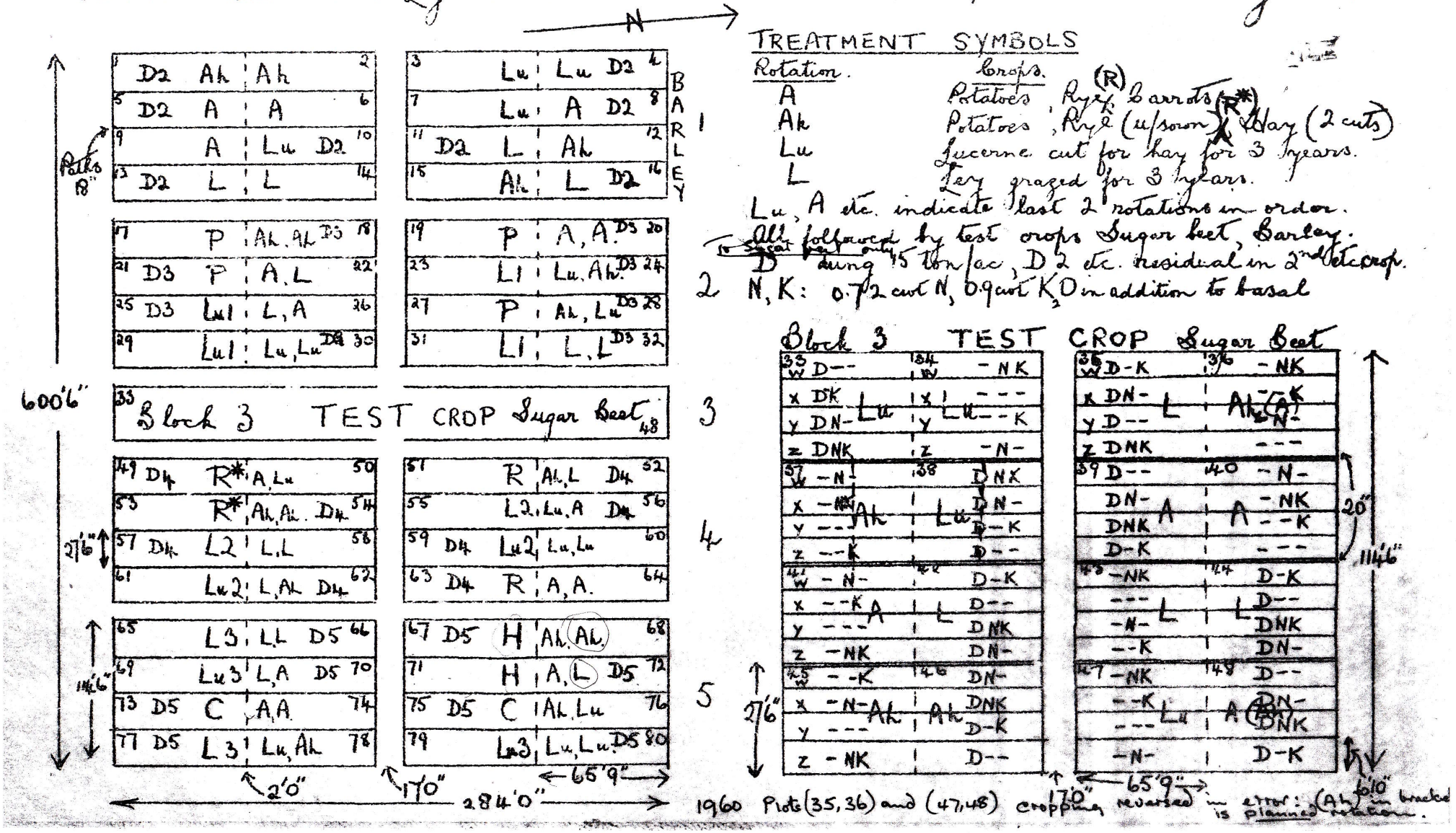


WOBURN Arable and Ley Rotations Code letter G STACKYARD FIELD 22nd year 1959

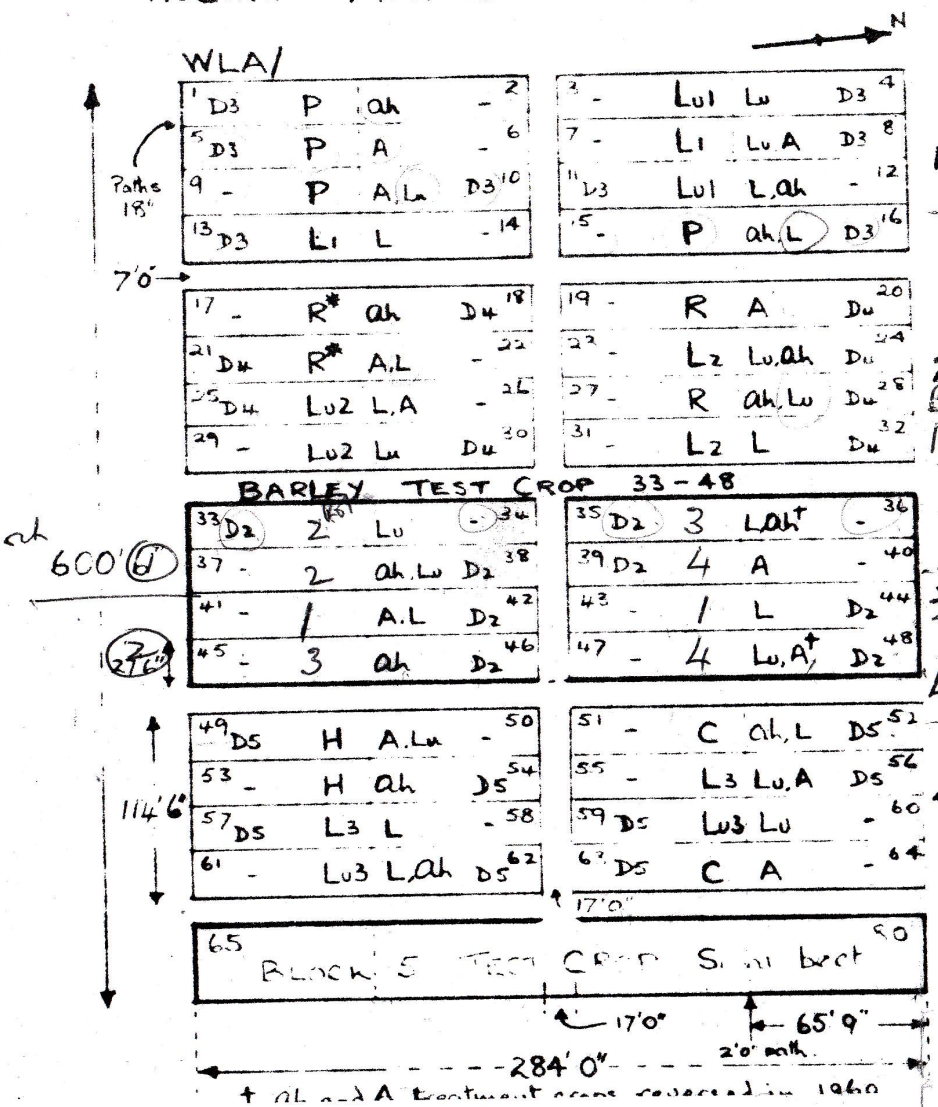




WOBURN Arable and Ley Rotations. Code letter G. STACKYARD FIELD 2nd year 1961



WOBURN Arable and Ley Rotations



COLE LETTER W.L.A STACKYARD 50th year 1962

CROP ROTATIONS (3 years treatment crops, 2 years test crops)

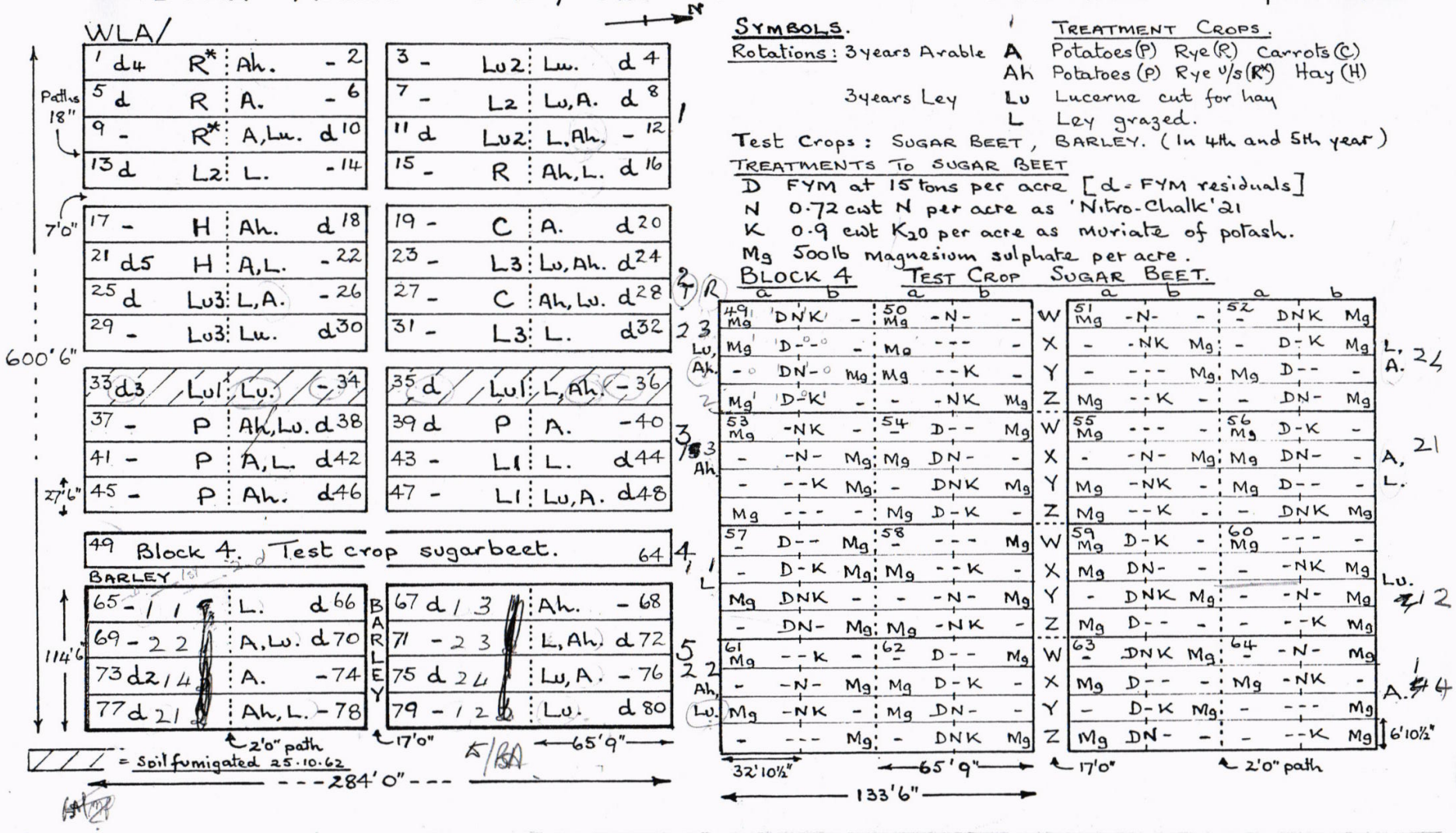
YEAR	3 year Leys L	Lu	Arable Crops A	ah
1	GRASS	LUCERNE	POTATOES	POTATOES
2	LEY	FOR	RYE	RYE U/S (R*)
3	GRAZED	HAY	CARROTS	HAY
4	TEST CROPS	SUGARBEET Testing	Dung N. K. Mg	
5		BARLEY		

NOTE: A single crop rotation (i.e Lu) is followed on 4 plots per block
Arable and Ley rotations alternate on remaining 4 plots (Lu, A)

D Dung at 15 ton per acre to sugar-beet. D2,3,4,5 Dung residues in 2nd, 3rd, 4th, 5th yrs
N 0·72 cwt N as 'Nitrochalk' 21 K 0·9 cwt K_2O as nitrate of potash
Mg 5 cwt magnesium sulphate per acre
All crops receive basal fertilizers

BLOCK 5 Test Crop SUGARBEET

WOBURN Arable and Ley Rotations — STACKYARD 26th year 1963



SYMBOLS.

Rotations: 3 years Arable
3 years Ley

TREATMENT CROPS.

A Potatoes (P) Rye (R) Carrots (C)
Ah Potatoes (P) Rye u/s (R*) Hay (H)
Lu Lucerne cut for hay
L Ley grazed.

Test Crops: SUGAR BEET, BARLEY. (In 4th and 5th year)

TREATMENTS TO SUGAR BEET

D FYM at 15 tons per acre [d = FYM residuals]
N 0·72 cwt N per acre as 'Nitro-Chalk' 21
K 0·9 cwt K_2O per acre as muriate of potash.
Mg 500lb magnesium sulphate per acre.

BLOCK 4 — TEST CROP SUGAR BEET.

WOBURN Arable and Ley Rotations — STACKYARD 27th year. 1964

WLA/

1 d5	H	Ah	2	3	Lu3	Lu	d4
5 d	C	A	6	7	L3	Lu,A	d8
9	H	A,Lu	d10	11 d	Lu3	L,Ah	12
13 d	L3	L	14	15	C	Ah,L	d16

Paths 18"

17 **BLOCK 2** Test crop sugar-beet 32

7'0"

33 d4	Lu2	Lu	34	35 d	Lu2	L,Ah	36
37	R	Ah,Lu	d38	39 d	R	A	40
41	R*	A,L	d42	43	L2	L	d44
45	R*	Ah	d46	47	L2	Lu,A	d48

600'6" Blocks R R

49 d2	3	Lu,Ah	50	51	4	L,A	d52
53	3	Ah	d54	55	1	A,L	d56
57 d	1	L	58	59 d	2	Lu	60
61	2	Ah,Lu	d62	63 d	4	A	64

BARLEY

65	L1	L	d66	67 d	P	Ah,	68
69	P	A,Lu	d70	71	S1	L,Ah	d72
73 d3	P	A	74	75 d	L1	Lu,A	76
77 d	P	Ah,L	78	79	S1	Lu	d80

2'0" 17'0" 65'9"

— 284'0" —

SYMBOLS

Rotations:
3 years ARABLE
3 years LEY

Treatment Crops
A Potatoes (P) Rye (R) Carrots (C)
Ah Potatoes (P) Rye u/s (R*) Hay (H)
Lu Lucerne cut for hay. 'S' Sainfoin
L Ley grazed.

TEST CROPS: Sugar-beet, Barley (In 4th and 5th year)

TREATMENTS TO SUGAR BEET. per acre.
-,D None, 15 tons Farmyard manure. (d = FYM residuals)
-N 0·35, 0·7 cwt N after 'L' and 'Lu' } N as 'Nitro-Chalk' 21
0·7, 1·05 cwt N after 'A' and 'Ah' }
-K None, 0·9 cwt K_2O as muriate of potash.
To sub-plot (aw, bw, etc.) P None, 1·5 cwt P_2O_5 as super.

BLOCK 2 Test Crop Sugar-beet.

	a	b	a	b		a	b	a	b	
W	17.P	- - -	-	18-	D NK	P	19.	- NK	P	20	D - K	P
X	P	- NK	-	P	D - K	-	-	- N -	P	P	D - -	-
Y	P	- N -	-	-	D N -	P	P	- - K	-	-	D N -	P
Z	P	- K	P	-	D - -	P	P	- - -	-	P	D NK	-
W	21.P	D NK	-	22	- NK	P	23	- N -	P	24	D N -	P
X	P	D N -	-	-	- - -	P	P	- - -	-	P	D NK	-
Y	-	D - K	P	-	- - K	P	-	- - K	P	P	D - K	-
Z	P	D - -	-	P	- N -	-	P	- NK	-	-	D - -	P
W	25	D N -	P	26	- N -	P	27	- N -	P	28.P	D NK	-
X	P	D NK	-	P	- NK	-	-	- NK	P	-	D N -	P
Y	-	D - K	P	-	- - -	P	-	- - K	P	P	D - -	-
Z	P	D - -	-	P	- - K	-	P	- - -	-	P	D - K	-
W	29	- - K	P	30.P	D N -	-	31.P	- N -	-	32.P	D - -	-
X	P	- - -	-	-	D - -	P	-	- - K	P	-	D N -	P
Y	P	- NK	-	P	D - K	-	P	- NK	-	-	D NK	P
Z	-	- N -	P	P	D NK	-	-	- - -	P	P	D - K	-

A 1 4 ✓ — Ah 1 3 ✓ — Ah,L 2 2 ✓ — L,Ah 1 2 ✓ — Lu,A 2 2 ✓ — Lu 1 2 ✓ — L 1 ✓

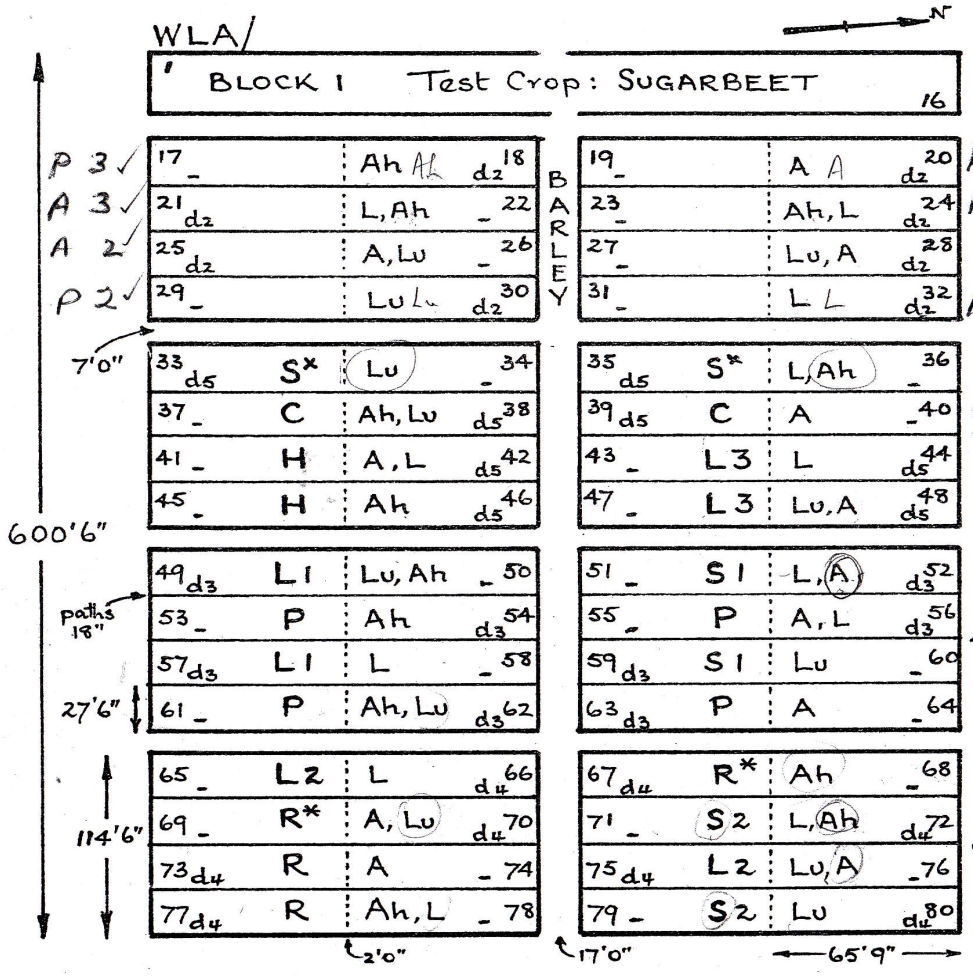
17'0" 65'9" 2'0" 32'10½"
— 133'6" —
— 284'0" —

Note. Change of Ley 1964: Common Sainfoin in place of Lucerne, 1st year

WOBURN Arable & Ley Rotations — STACKYARD 28th year 1965

WLA/

BLOCK 1 Test Crop: SUGARBEET 16



× Sainfoin in place of 3rd year Lucerne.

Plot area: 65'9" x 27'6" = 0.0415 acre

SYMBOLS

Rotations

3 years ARABLE: A Ah

3 years LEY: Lu L

Treatment Crops

Potatoes (P) Rye (R) Carrots (C)
Potatoes (P) Rye u/s (R*) Hay (H)
Lucerne cut for hay. S Sainfoin (as Lu)
Ley grazed.

TEST CROPS: Sugar-beet, Barley (In 4th & 5th years)

TREATMENTS TO SUGAR BEET per acre

-, D None, 15 tons F.Y.M (d = residuals of F.Y.M)

To 1/8th sub-plots (Nitrogen at 4 levels, rates according to rotation)

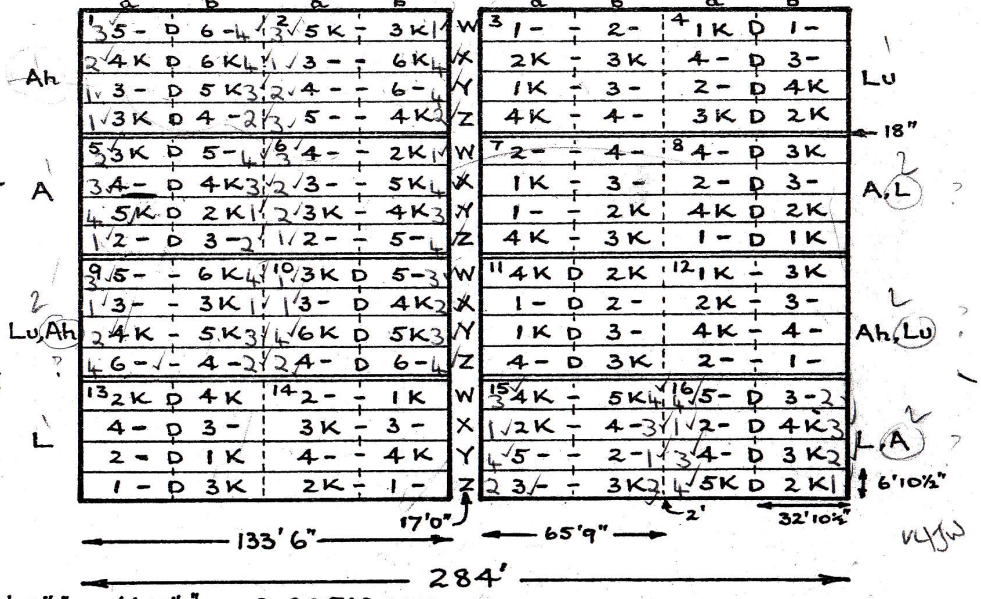
N 1, 2, 3, 4, 5, 6 0·35, 0·7, 1·05, 1·40, 1·75, 2·10 cwt N as "Nitro-Chalk" 21

-, K None, 0·9 cwt K_2O as muriate of potash

Basal manuring: per acre

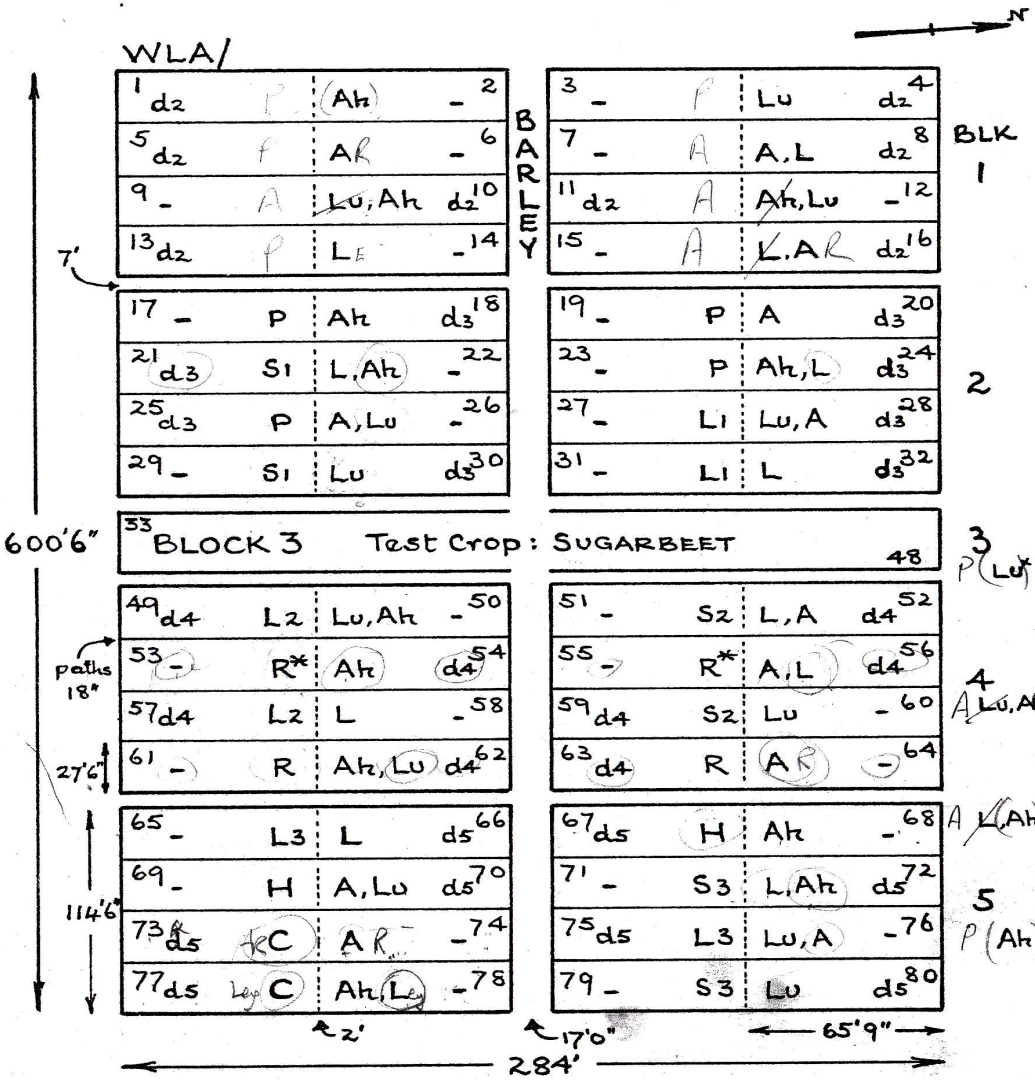
2·0 cwt P_2O_5 as superphosphate, 500lb magnesium sulphate.

BLOCK 1 Test Crop Sugar Beet



Sub-plot: 32'10½" x 6'10½" = 0.00519 acre

WOBURN Arable & Ley Rotations — STACKYARD 29th year 1966



SYMBOLS

Rotations

3 years ARABLE

3 years LEY

Treatment Crops

A: Potatoes P, Rye R, Carrots C.
Ah: Potatoes P, Rye ½s R* Hay H.
Lu: Lucerne cut for hay S: Sainfoin (as Lu)
L: Ley grazed.

TEST CROPS: Sugarbeet, Barley (In 4th & 5th years)

TREATMENTS to SUGARBEET per acre

-, D None, 15 tons F.Y.M. (d = Residuals of FYM)

N to ⅛th sub-plots (N at 4 levels, rates according to rotation

N 1, 2, 3, 4, 5, 6 0·35, 0·7, 1·05, 1·40, 1·75, 2·10 cwt N as 'N/c'21

-, K None, 0·9 cwt K_2O as muriate of potash.

Basal P & Mg.

BLOCK 3 Test Crop SUGARBEET

	a	b	a	b		a	b	a	b
3	332K D 1-		342- - 1K		W	351K D 3-		363K - 4-	
P(Lu*)	1K D 2-		4- - 3-		X	2- D 4K		3 - - 1K	
	4- D 3K		4K - 2K		Y	2K D 4-		2- - 1-	
	4K D 3-		3K - 1-		Z	1- D 3K		2K - 4K	
4	372K - 3K		383- D 2-		W	392- D 4-		404K - 3K	
A Lu,AR	3- - 4K		4K D 5-		X	3- D 5-		4- - 2-	
	5- - 5K		4- D 5K		Y	3K D 4K		2K - 5-	
	2- - 4-		2K D 3K		Z	5K D 2K		3 - - 5K	
	415- - 3K		425- D 6-		W	433K- 4K		441- D 4K	
A L(Ah)	4K - 5K		3- D 4K		X	2- - 2K		1K D 2K	
	3- - 4-		5K D 6K		Y	4 - - 3 -		2- D 3K	
	6K - 6-		4- D 3K		Z	1K - 1-		3- D 4-	
5	453K - 4-		463- D 5-		W	472K - 4-		482K D 3K	
P(Ah)	6- - 3-		6- D 4K		X	1- - 2-		2- D 1-	
	5- - 6K		6K D 5K		Y	1K - 3-		4- D 1K	
	5K - 4K		3K D 4-		Z	4K - 3K		3- D 4K	

A Ah, Lu* (Lu. Lu. S)*

PAR

PLE

A, LE

18"

6'10½"

17'

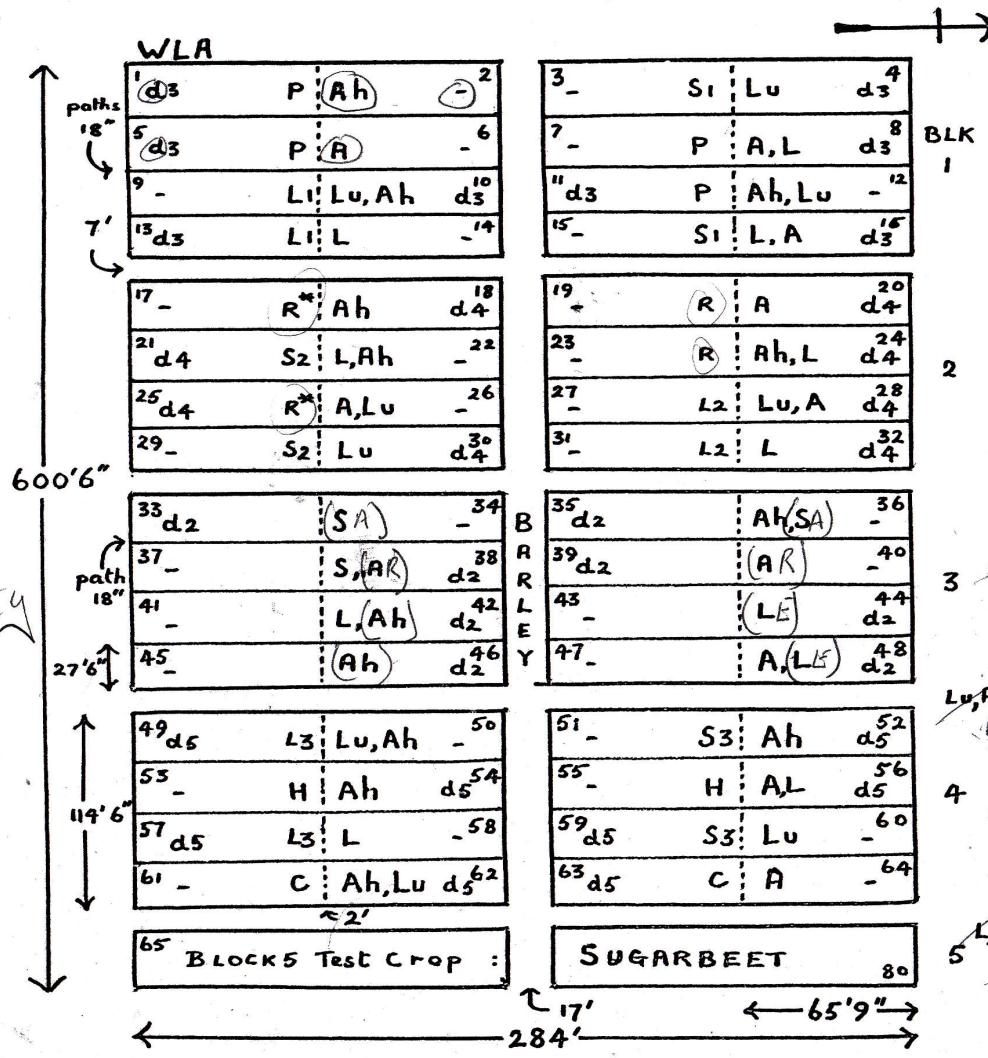
2'

133'6" 65'9" 284'

Rye crop failed – replanted spring wheat.

WOBURN Arable & Ley Rotations

b/4 STACKYARD 30th year 1967



SYMBOLS

Rotations

3 years ARABLE

3 years LEY

Treatment Crops

A = Potatoes P, Rye R, Carrots C.
Ah = Potatoes P, Rye ½ R*, Hay H.
S = Sainfoin cut for hay (Lu: Lucerne)
L = Ley grazed.

TEST CROPS: Sugarbeet, Barley (In 4th & 5th years)

TREATMENTS to SUGARBEET per acre

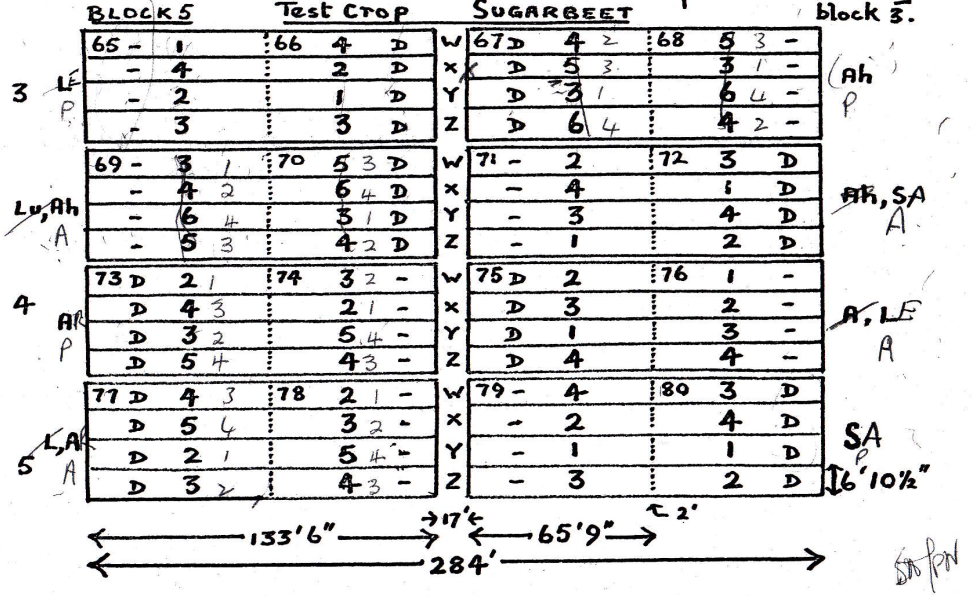
-, D None, 15 tons F.Y.M. (d = Residuals of FYM)

N to ¼ Sub-plots (Nat 4 levels, rates according to rotation)

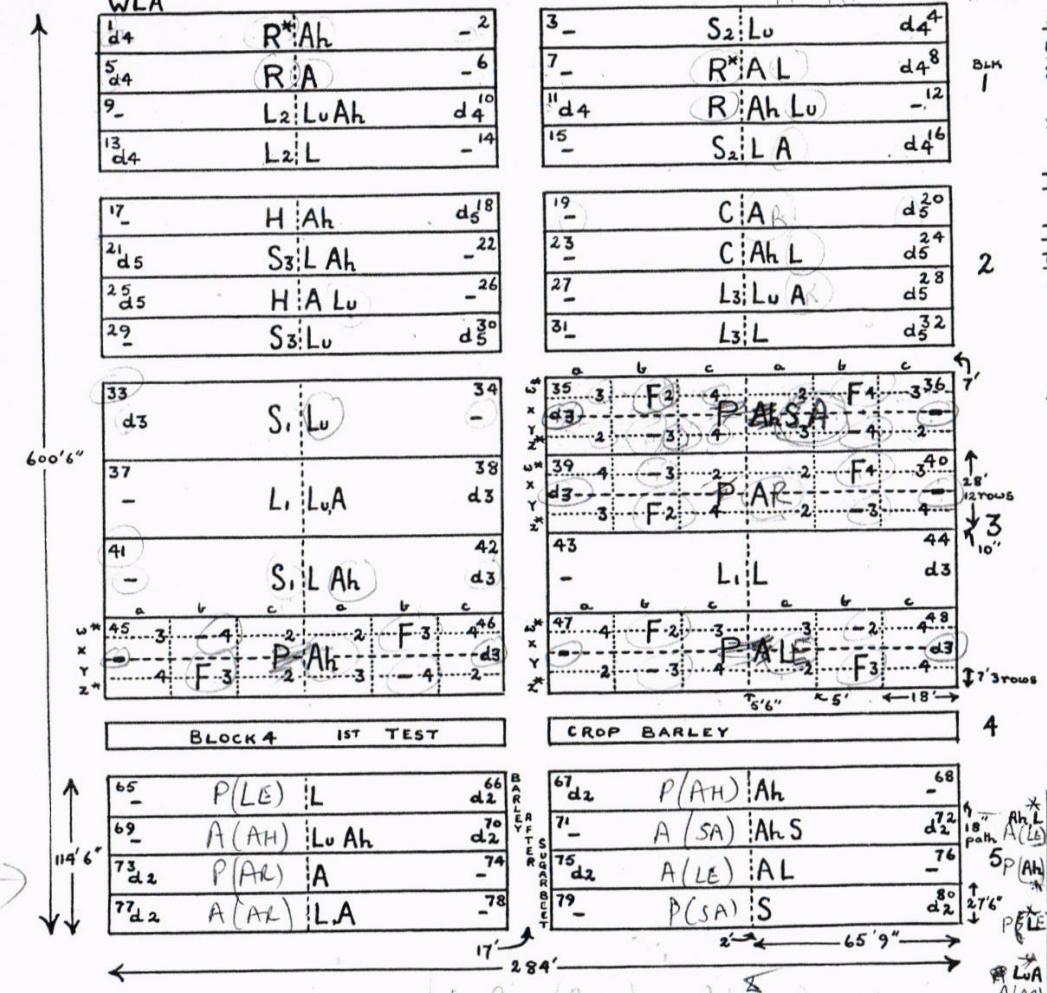
N 1, 2, 3, 4, 5, 6 0·35, 0·7, 1·05, 1·40, 1·75, 2·10 cwt N as "N/C" 21

Basal P, K, and Mg

Note: Spring Wheat, variety, Kloka replaced failed Rye in block 3.



WOBURN WLA — ARABLE & LEY ROTATIONS — STACKYARD 31st year 1968.



SYMBOLS

Rotations

3 years ARABLE

3 years LEY

Test Crops

Treatment Crops

A = Potatoes P, Rye R, Carrots C.
Ah = Potatoes P, Rye ½S R*, Hay H.
S = Sainfoin cut for hay (Lu = Lucerne)
L = Ley grazed
1967,68 Sugar Beat, Barley } In 4th
1968,69 Barley, Potatoes } & 5th years.

TREATMENTS:-

Treatment potatoes 1968:

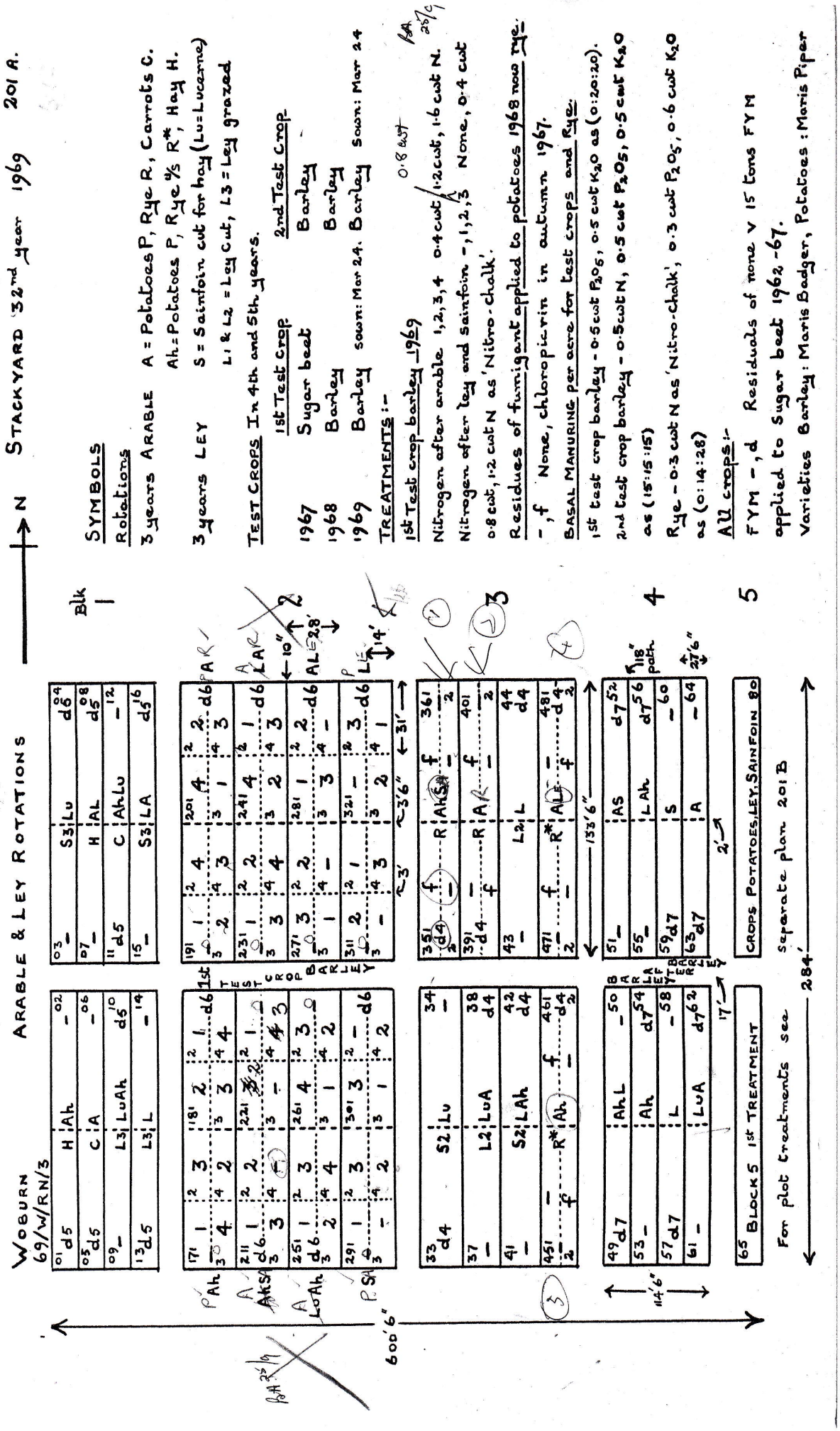
Fumigants -, F None, Chloropicrin in autumn 1967
Nitrogen 2,3,4 1·0 cwt, 1·5 cwt, 2·0 cwt N as 'Nitro-chalk'
Sub-plots w* and z* tubers dusted with thiram before planting.

1st Test crop barley 1968:

Nitrogen after arable 1,2,3,4. 0·4 cwt, 0·8 cwt, 1·2 cwt, 1·6 cwt N.
Nitrogen after Ley and Sainfoin -, 1, 2, 3. None, 0·4 cwt, 0·8 cwt, 1·2 cwt N as 'Nitro-chalk'.

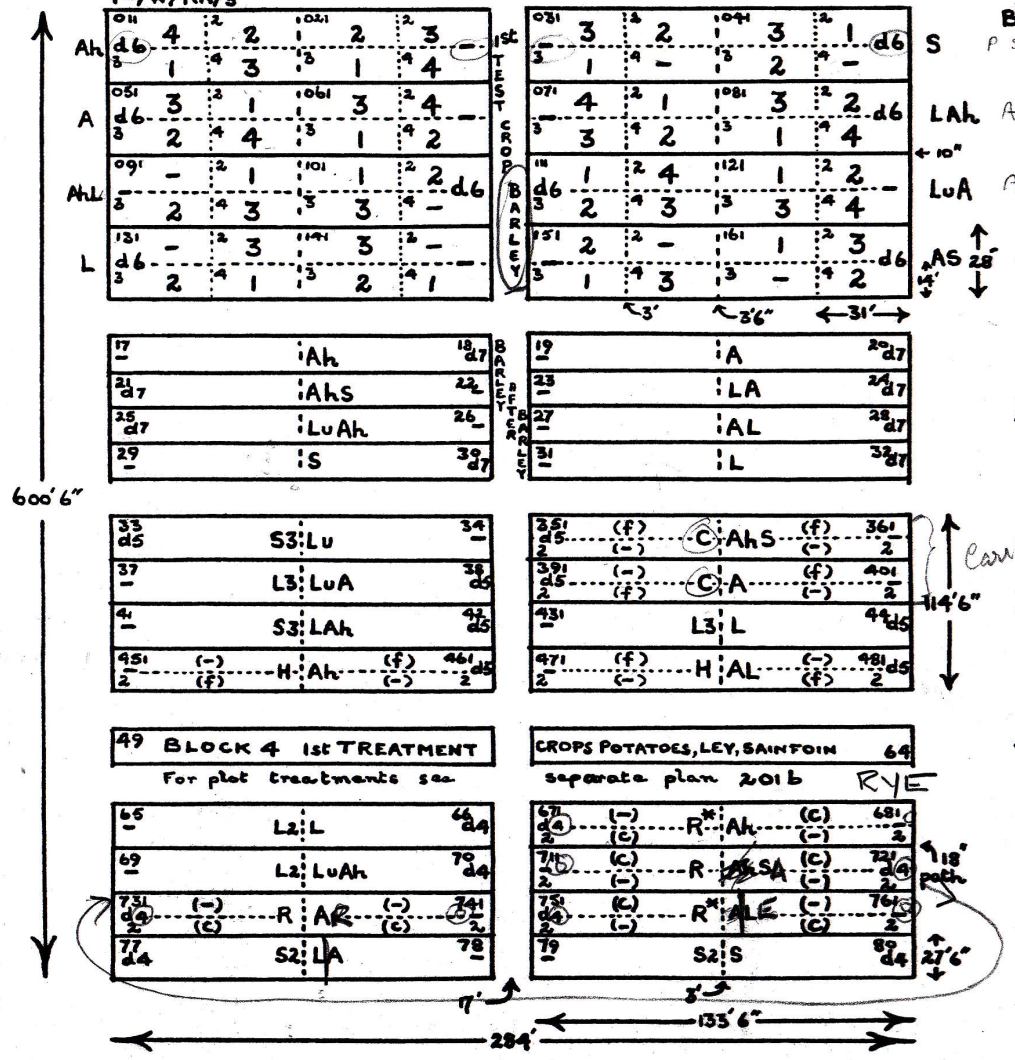
All crops:

FYM -, d Residuals of none v 15 tons FYM applied to sugar beat 1962-7. No fresh applications for 1968 crops, but fresh test resumes for 2nd test crop potatoes in 1969.



WOBURN ARABLE AND LEY ROTATIONS → N STACKYARD 'D' 33rd year 1970

70/W/RN/3



SYMBOLS

Rotations

3 years ARABLE A = Potatoes P, Rye R, Carrots C.
Ah: Potatoes P, Rye ½ R*, Hay H.

3 years LEY S = Sainfoin cut for hay (Lu = Lucerne)
L = Ley cut (No more grazing)

TEST CROPS In 4th and 5th years

	1st Test Crop	2nd Test Crop
1969	Barley	Barley
1970	Barley @ 140lb	Barley @ 135lb Sown: 25 Mar

2 TREATMENTS:-

1st Test crop barley 1970

Nitrogen after arable 1,2,3,4. 0·4, 0·8, 1·2, 1·6 cwt N

Nitrogen after ley and sainfoin -,1,2,3. None, 0·4, 0·8, 1·2 cwt N as 'Nitro-chalk'21.

3 Residues of fumigant applied to potatoes 1968, now carrots or hay (-),(f). None, Chloropicrin in autumn 1967.

Residues of fumigant applied to potatoes 1969, now rye (-),(c) None, Chloropicrin in autumn 1968

4 BASAL MANURING per acre for test crops and Rye

1st test crop barley - 0·5 cwt P_2O_5, 0·5 cwt K_2O as (0:20:20)

2nd test crop barley - 0·5 cwt N, 0·5 cwt P_2O_5, 0·5 cwt K_2O as (15:15:15)

Rye - 0·3 cwt N as 'Nitro-chalk', 0·3 cwt P_2O_5, 0·6 cwt K_2O as (0:14:28)

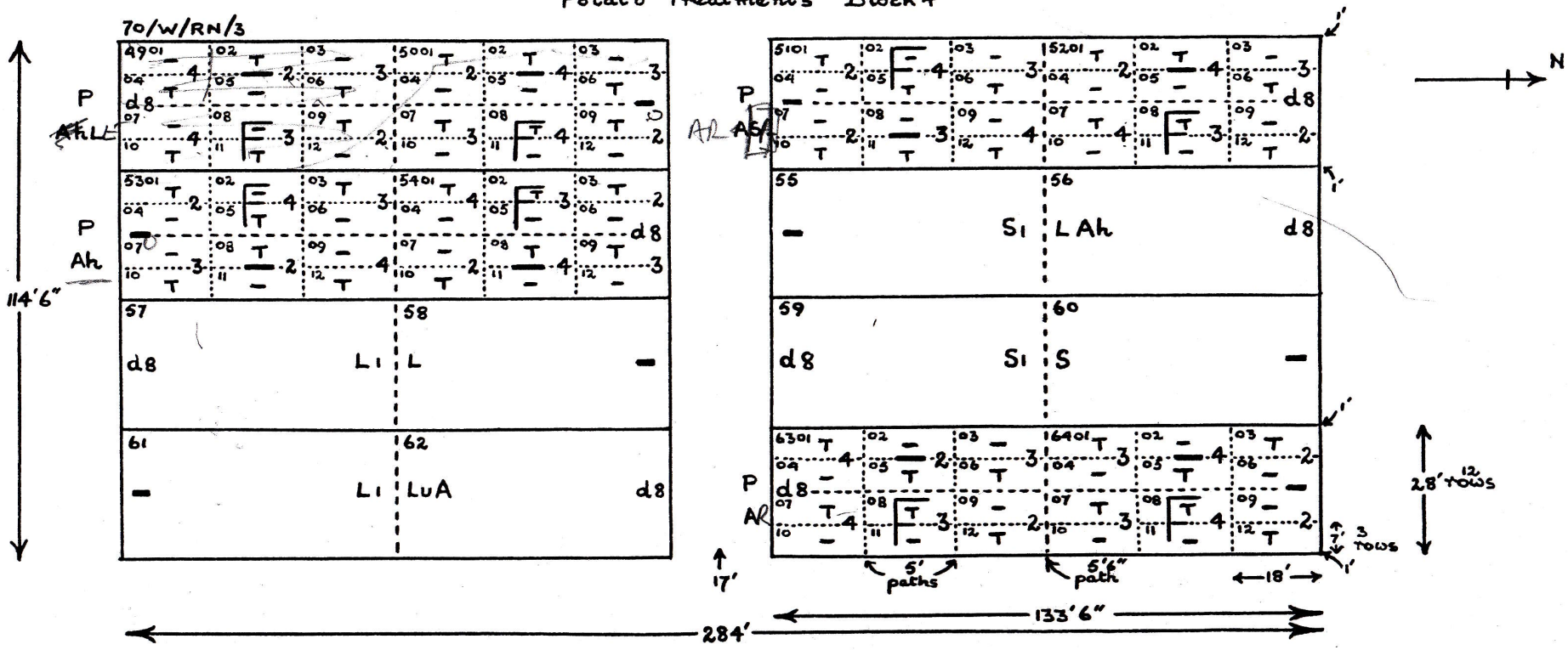
5 All crops:-

FYM -,d Residuals of none v 15 tons FYM applied to sugar beet 1962-67

Varieties: Barley: Maris Badger, Potatoes: Maris Piper, 2nd Test crop Barley: Julia

WOBURN ARABLE & LEY ROTATIONS 33rd year STACKYARD D 1970 201 B

Potato Treatments Block 4



TREATMENTS per acre

Whole plots

-, d8 None, FYM residues - applied 1963

Half plots - Fumigant

-, F None, chloropicrin at 400lb

1/6 plots - Nitrogen rates

2, 3, 4 1·0, 1·5, 2·0 cwt N as 'Nitro-chalk' 21

1/12 plots - Nematicide

-, T None, Temik at 100lb of 10% granules.

BASAL MANURING per acre

0·9 cwt P_2O_5, 1·8 cwt K_2O as compound fertiliser (0:14:28)

336lb Epsom salts

VARIETY: Maris Piper Planted: 22 Apr.

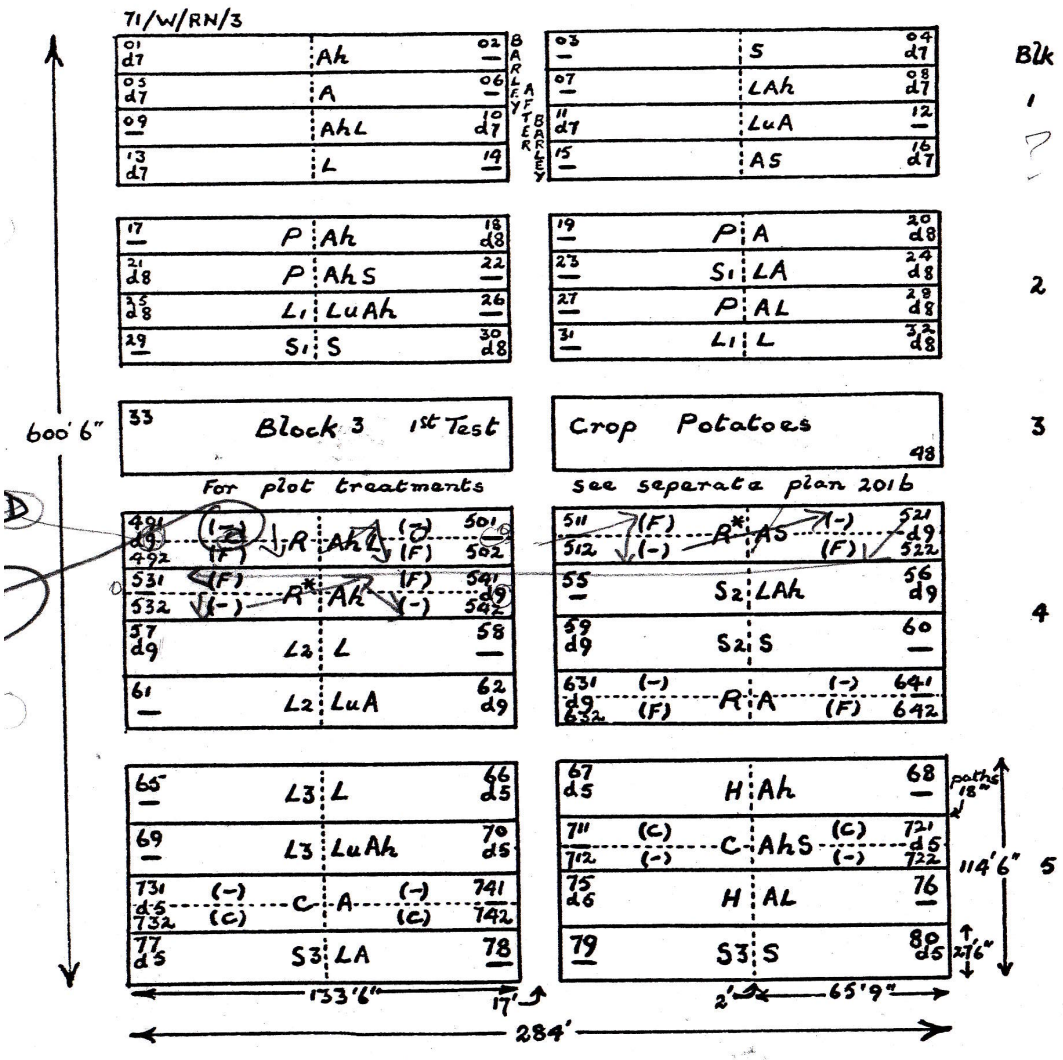
PLOT AREA 18'x7' = 0·0029 acre

harvested one row 2'4" x 18' = 0·0010 acre

WOBURN ARABLE AND LEY ROTATIONS

N

STACKYARD "D" 34th year 1971



Blk

1

2

3

4

5

SYMBOLS

Rotations

3 years ARABLE A = Potatoes P, Rye R, Carrots C.
Ah = Potatoes P, Rye ⅓*, Hay H.

3 years LEY S = Sainfoin cut for hay (Lu = Lucerne)
L = Ley cut (No more grazing)

TEST CROPS In 4th and 5th years

	1st Test Crop	2nd Test Crop
1970	Barley	Barley
1971	Potatoes	Barley @ 150lb (168kg)

TREATMENTS:- Planted: 30 Mar. Sown: 10 Mar.

Residues of Fumigant applied to potatoes 1969 now carrots

(-), (C) None, Chloropicrin in autumn 1968

Residues of Fumigant applied to potatoes 1970 now rye

(-), (F) None, Chloropicrin in autumn 1969

BASAL MANURING per acre (hectare) for 2nd test crop & treatment crops.

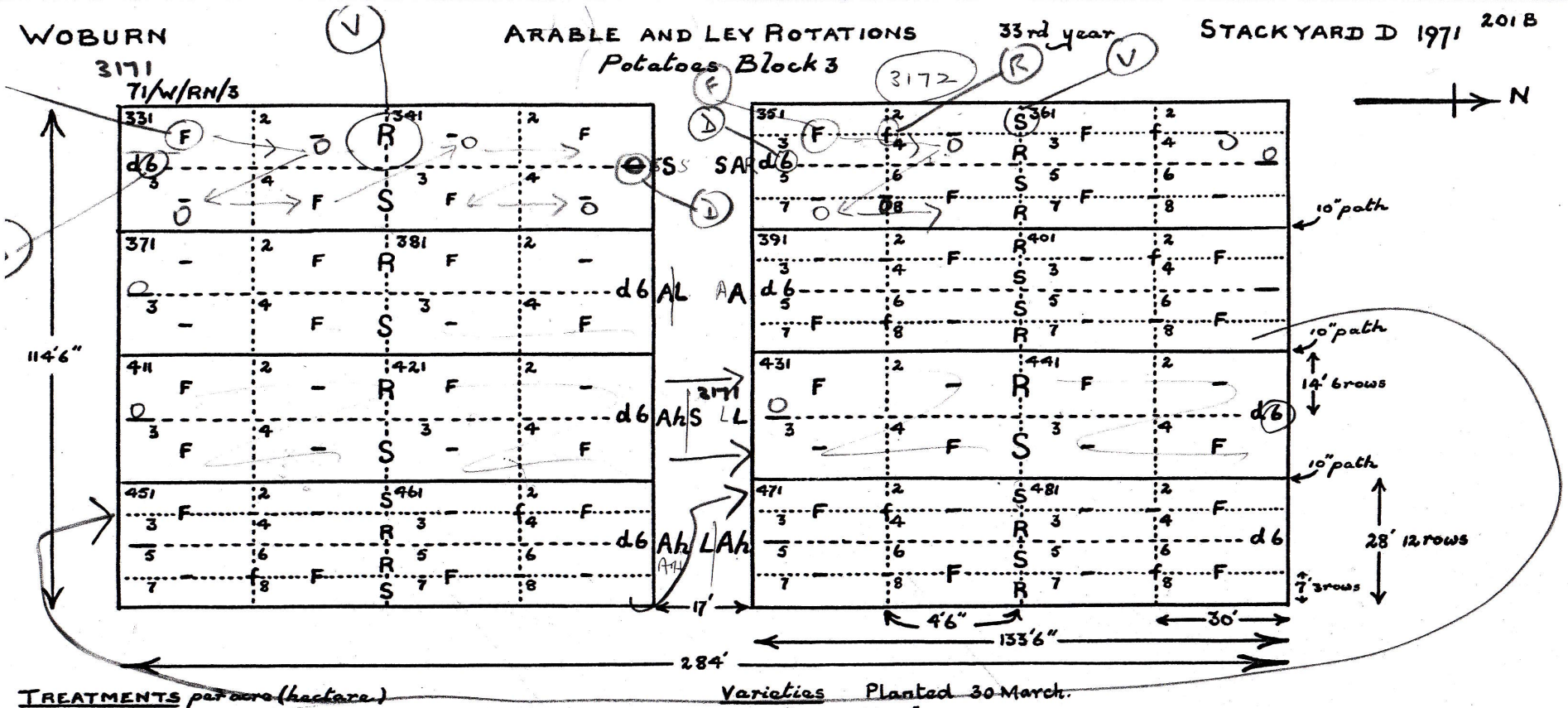
2nd test crop barley - Julia.
0.5 cwt (63kg) N, 0.5 cwt (63kg) P_2O_5, 0.5 cwt (63kg) K_2O as (15:15:15)

1st treatment crop potatoes - Maris Piper
2.0 cwt (252kg) N, 2.0 cwt (252kg) P_2O_5, 3.0 cwt (376kg) K_2O as (13:13:20)

2nd treatment crop rye - King II
0.3 cwt (38kg) N as 'Nitro-chalk'21, 0.3 cwt (38kg) P_2O_5, 0.6 cwt (76kg) K_2O as (0:14:28).

3rd treatment crop carrots - Autumn King
0.6 cwt (76kg) N as 'Nitro-chalk'21, 0.6 cwt (76kg) P_2O_5 as superphosphate
1.8 cwt (226kg) K_2O as muriate of potash

All crops:-
FYM -, d. Residuals of none v 15 tons FYM applied to Sugar beet 1962-67



TREATMENTS *per acre (hectare)*

Dung residues

-, d6 None, FYM residues - last applied 1966.

Chloropicrin residues

-, f None, 400lb (448kg) chloropicrin in 1968.

Fresh chloropicrin and Temik

- None

F 400lb (448kg) chloropicrin in autumn 1970 + 100lb (112kg) of 10% granules of temik in spring 1971.

Varieties Planted 30 March.

R "resistant" to H. rostochiensis Maris Piper

S susceptible to H rostochiensis Pentland Crown

BASAL MANURING *per acre (hectare)*

1752lb (1964kg) compound fertiliser (13:13:20) broadcast 26 Mar.

PLOT AREA

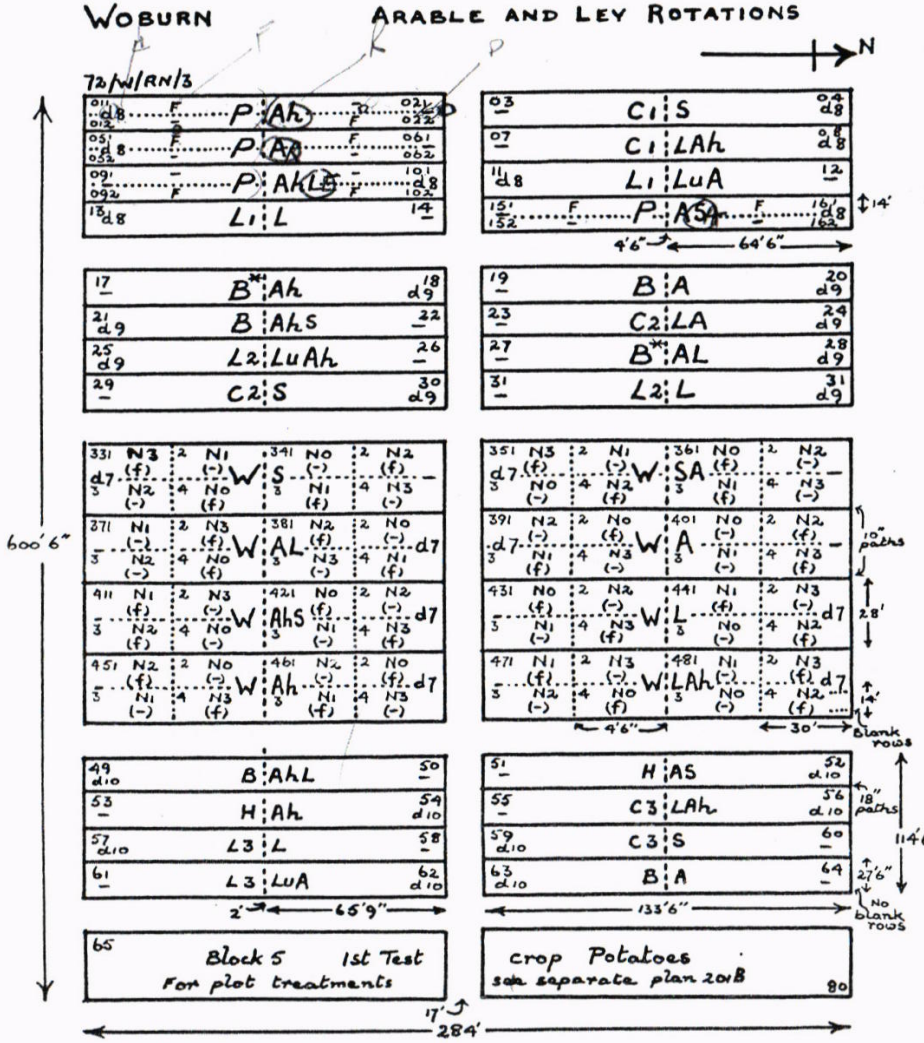
Plots without chloropicrin residues 14'x30' = 0.0096 acre (0.0039 ha)

Plots with chloropicrin residues 7'x30' = 0.0048 acre (0.0048 ha)

201 A

WOBURN ARABLE AND LEY ROTATIONS

STACKYARD "D" 35th year 1972



SYMBOLS

Rotations

3 years ARABLE A = Potatoes P, Barley B, Barley B.
Ah = Potatoes P, Barley B ½*, Hay H.

3 years LEY C = Red clover cut for hay (S = Sainfoin, Lu = Lucerne).
L = Ley Cut

TEST CROPS In 4th and 5th years

1st Test Crop	2nd Test Crop
Potatoes	Barley
Potatoes	Winter Wheat (W)

planted : 29 Mar. Sown : Wheat : 22 Oct. Barley : 15 N

TREATMENTS :-

2nd Test Crop W. Wheat - Cappelle dressed dieldrin & fungicide

Nitrogen Rates and Residues of Fumigants to Potatoes 1971 (1972)

N0, N1, N2, N3 None, 0.5 cwt (63kg), 1.0 cwt (126kg), 1.5 cwt (189kg) N as 'Nitro-chalk' 21

(-), (f) None, 400lb (448kg) chloropicrin + 100lb (112kg) of 10% granules of temik

BASAL MANURING per acre (hectare)

2nd Test crop W. Wheat - 260lb (291kg) of compound fertiliser (0:20:20) C.D.

2nd & 3rd Treatment crop Barley - Julia at 137lb (154kg)

370lb of compound fertiliser (415kg) (15:15:15) c.d.

3rd Treatment crop Hay ½ 1971 in Rye

1.0 cwt (126kg) N as 'Nitro-chalk' 21, 0.6 cwt (75kg) P_2O_5, 1.2 cwt (151kg) K_2O as (0:14:28) in spring. 0.6 cwt (75kg) N, 0.4 cwt (50kg) K_2O as (25:0:16) after 1st cut.

TREATMENT & BASAL MANURING per acre (hectare) 1st Treatment crop potatoes

-, F None, 400lb (448kg) chloropicrin in autumn 1971 + 50lb (56kg) 10% Temik in spring.

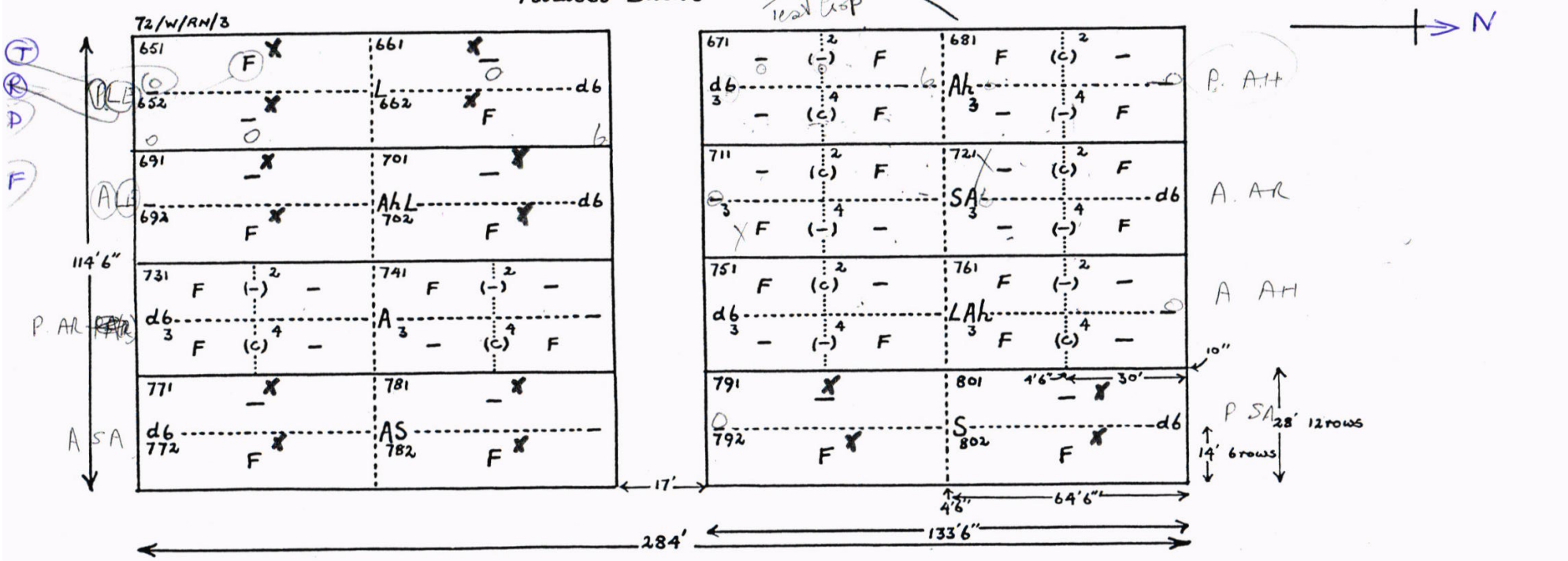
2.0 cwt (252kg) N, 2.0 cwt (252kg) P_2O_5, 3.0 cwt (376kg) K_2O as (13:13:20). (5lb (6kg) ald (carb)

Variety - Maris Piper planted : 29 March

All Crops :- FYM -, d Residuals of None v. 15 tons (38 tonnes) FYM applied to sugar beet 1962-67 (1st test crop).

WOBURN ARABLE AND LEY ROTATION — 35th year — STACKYARD D 1972

Potatoes Block 5



TREATMENTS per acre (hectare)

Dung residues

-, d6 None, FYM residues last applied 1967

Chloropicrin residues

(-), (c) None 400lb (448 kg) chloropicrin in 1969

Fresh chloropicrin and temik

- None

F 400lb (448kg) chloropicrin in autumn 1971 + 50lb (56kg) of 10% granules of temik in Spring 1972

VARIETY 'Resistant' to H. rostochiensis Maris Piper Planted: 29 Mar.

BASAL MANURING per acre (hectare)

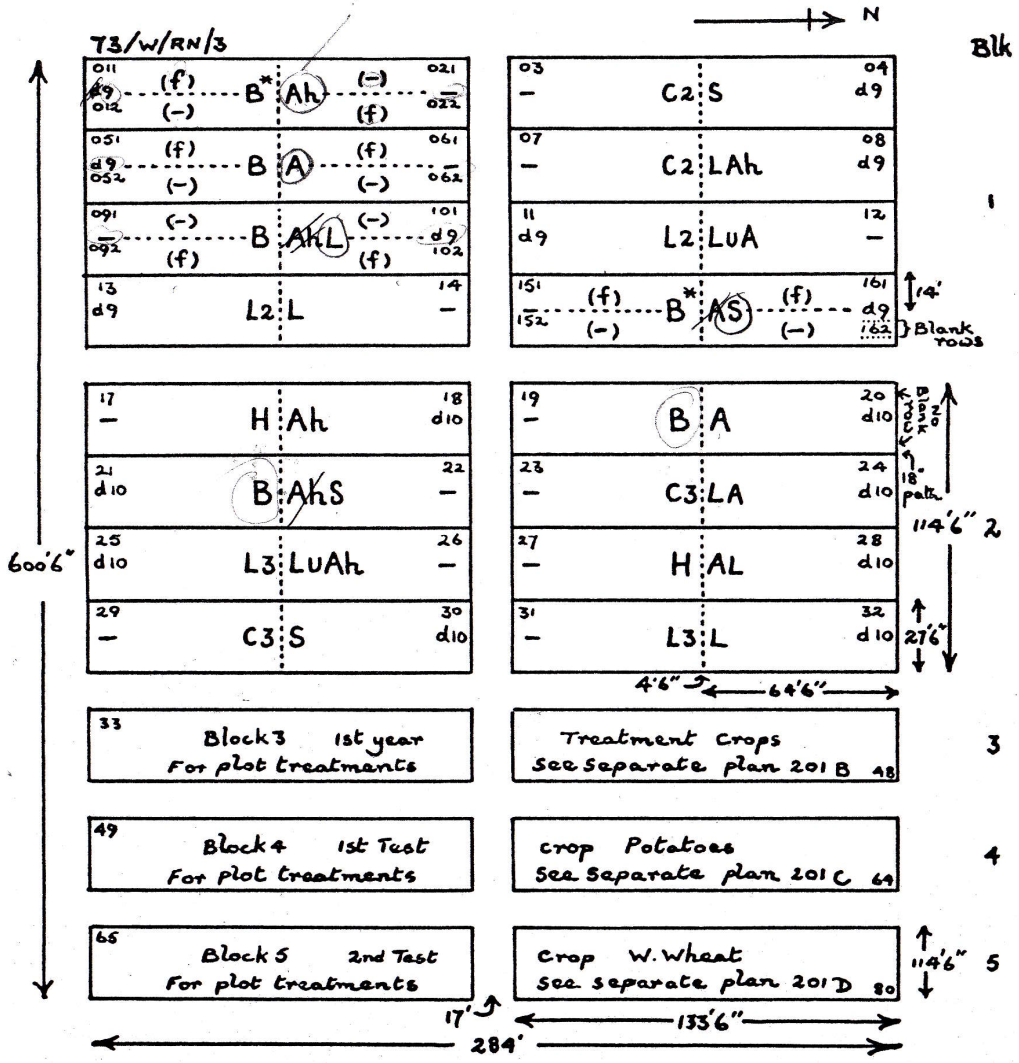
1752 lb (1964 kg) compound fertiliser (13:13:20)

PLOT AREA

Plots with chloropicrin residues 14' x 30' = 0.0096 acre (0.0039 ha)

Plots without chloropicrin residues 14' x 64'6" = 0.0207 acre (0.0084 ha)

WOBURN ARABLE AND LEY ROTATION — 36th year — STACKYARD 'D' 1973 — 201 A



SYMBOLS

Rotations

3 years ARABLE A = Potatoes P, Barley B, Barley B.
Ah = Potatoes P, Barley B ⅘s*, Hay H.

3 years LEY C = Red Clover cut for hay (S = Sainfoin, Lu = Lucerne)
L = Ley, cut.

2nd and 3rd TREATMENT CROPS

2nd treatment Barley

Residues of fumigants applied to potatoes 1972

(–), (f) None, 400lb (448kg) chloropicrin + 5lb (6kg) Aldicarb.

2nd & 3rd treatment Barley (Julia, dressed athirimol) Sown: 12 Mar 365lb of compound fertiliser (409kg) (15:15:15) C.D.

3rd treatment crop Hay ⅘s 1972 in Barley

1·0 cwt (126kg) N as 'Nitro-chalk' 25, 0·6 cwt (75kg) P_2O_5, 1·2 cwt (151kg) K_2O as (0:14:28) in spring. 0·6 cwt (75kg) N, 0·4 cwt (50kg) K_2O as (25:0:16) after 1st cut.

2nd and 3rd year cut Ley

1·2 cwt (151kg) N, 0·9 cwt (113kg) K_2O as (25:0:16) in three equal dressings. Any dressing may be omitted or reduced in a wet season.

2nd and 3rd year clover

0·5 cwt (63kg) N as 'Nitro-chalk' 25, 1·5 cwt (188kg) K_2O as muriate of potash, in spring.

ALL CROPS :-

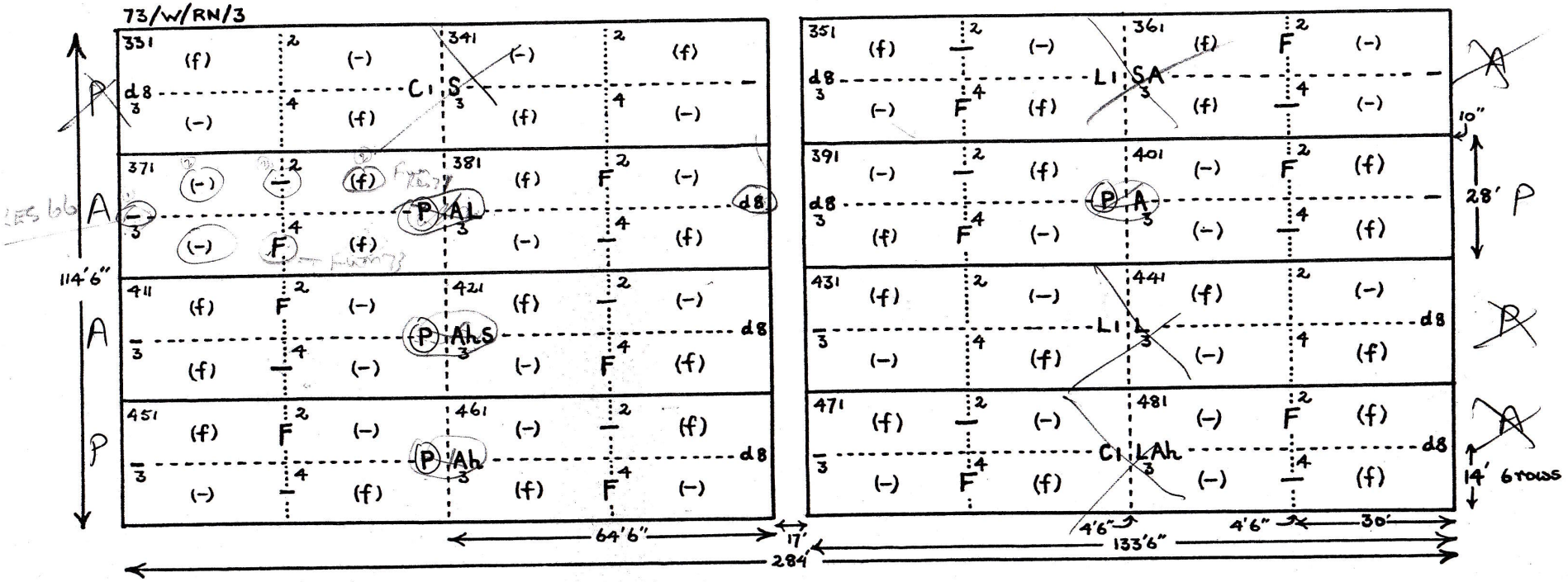
FYM

–, d Residual of none v. 15 tons (38 tonnes). FYM applied to sugar beet 1962-67 (1st test crop).

WOBURN ARABLE AND LEY ROTATION 36th year STACKYARD 'D' 1973 201 B

1st treatment crops Block 3 N

73/W/RN/3



SYMBOLS

Rotations

3 years ARABLE A = Potatoes P, Barley B, Barley B.
Ah = Potatoes P, Barley B ½s*, Hay H

3 years LEY C = Red Clover cut for hay (S = Sainfoin)
L = Ley Cut

TREATMENTS per acre (hectare) Fumigant

−, F None 400lb (448kg) chloropicrin + 60lb (67kg) of aldicarb (applied to plots 35/36 & 47/48 in error)

Residues of Fumigants applied to Potatoes 1971

(−), (f) None, 400lb (448kg) chloropicrin + 10 lb (11.2kg) of aldicarb

VARIETY Potatoes – Maris Piper Planted: 17 Apr

BASAL MANURING per acre (hectare) – Potatoes

1730lb (1939kg) compound fertiliser (13:13:20)

SUB-PLOT AREA 14'x 30' = 0.0096 acre (0.0039 ha)

WOBURN ARABLE AND LEY ROTATION 36th year STACKYARD D 1973 201 C

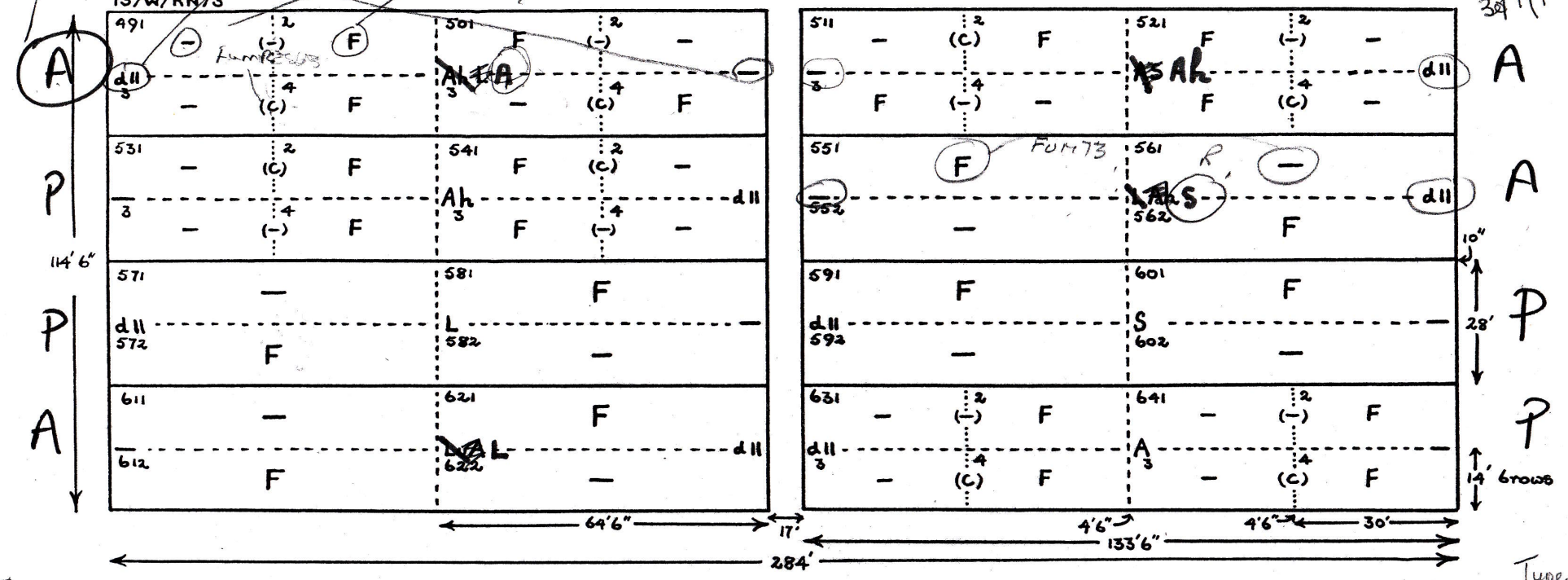
Potatoes Block 4

1st Test Crop

N

Amended Plan 30/7/73

T3/W/RN/3



TREATMENTS per acre (hectare)

F.Y.M. residues

-, d II None, F.Y.M. residues - last applied 1963

Chloropicrin residues

(-), (C) None, 400lb (448kg) chloropicrin for potatoes 1970

Fresh Fumigant

- None

F 400lb (448kg) chloropicrin in early spring 1973 + 6·4lb (6·7kg) of aldicarb

VARIETY Maris Piper Planted: 9 Apr.

BASAL MANURING per acre (hectare)

1730lb (1939kg) compound fertiliser (13:13:20)

PLOT AREA

Plots with chloropicrin residues 14'x30' = 0·0096 acre (0·0039ha)

Plots without chloropicrin residues 14'x64'6" = 0·0207 acre (0·0084ha)

Type

Rotation

FYMRES 6

FUMRES 70

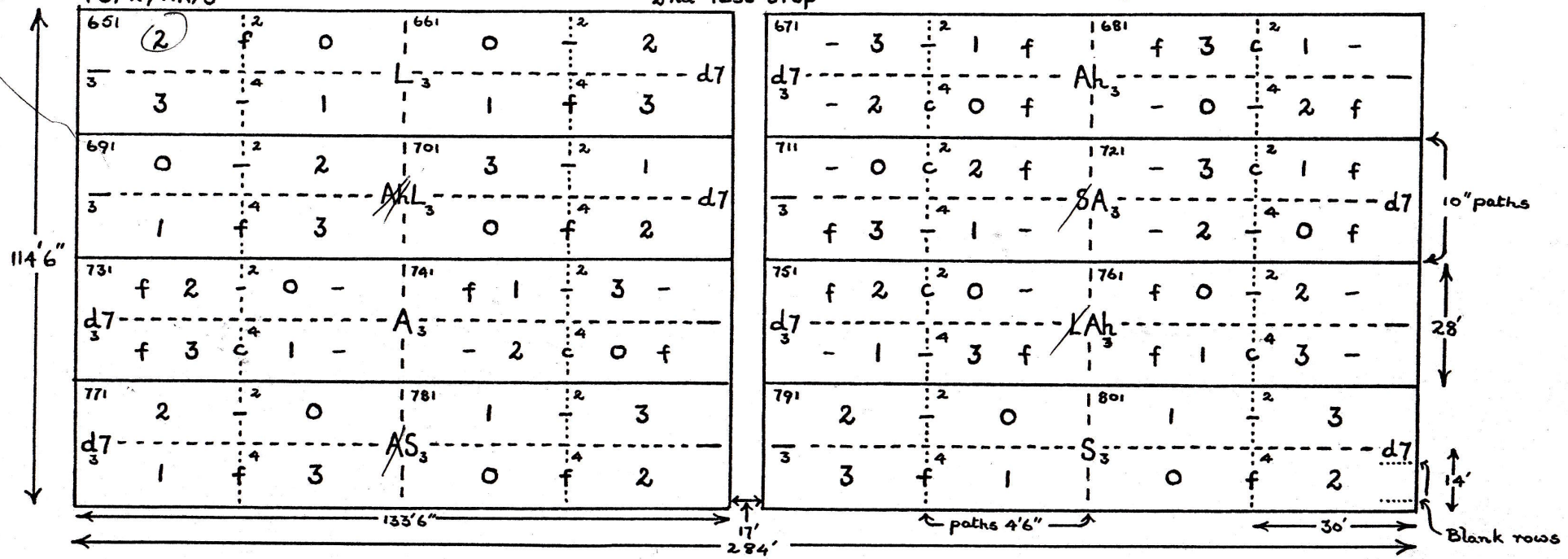
FUM 73

WOBURN ARABLE AND LEY ROTATION 36th year STACKYARD D 1973

W. Wheat Block 5

2nd Test Crop

73/W/RN/3



TREATMENTS per acre (hectare)

F.Y.M. residues

-, d7 None, F.Y.M. residues - last applied 1967.

Chloropicrin + aldicarb residues

-, f None, 400lb (448kg) chloropicrin in autumn 1971 + 10lb (11kg) aldicarb in spring 1972.

chloropicrin residues

-, c None, 400lb (448kg) chloropicrin in 1969

Nitrogen

0, 1, 2, 3 None, 0·5, 1·0, 1·5 cwt N (63, 126, 189 kg) as 'Nitro-chalk' 25

BASAL MANURING per acre (hectare)

265lb (297kg) compound fertiliser (0:20:20).

VARIETY

Cappelle (dressed dieldrin) sown at 175lb (196kg) Date: 24 Nov.

PLOT AREA

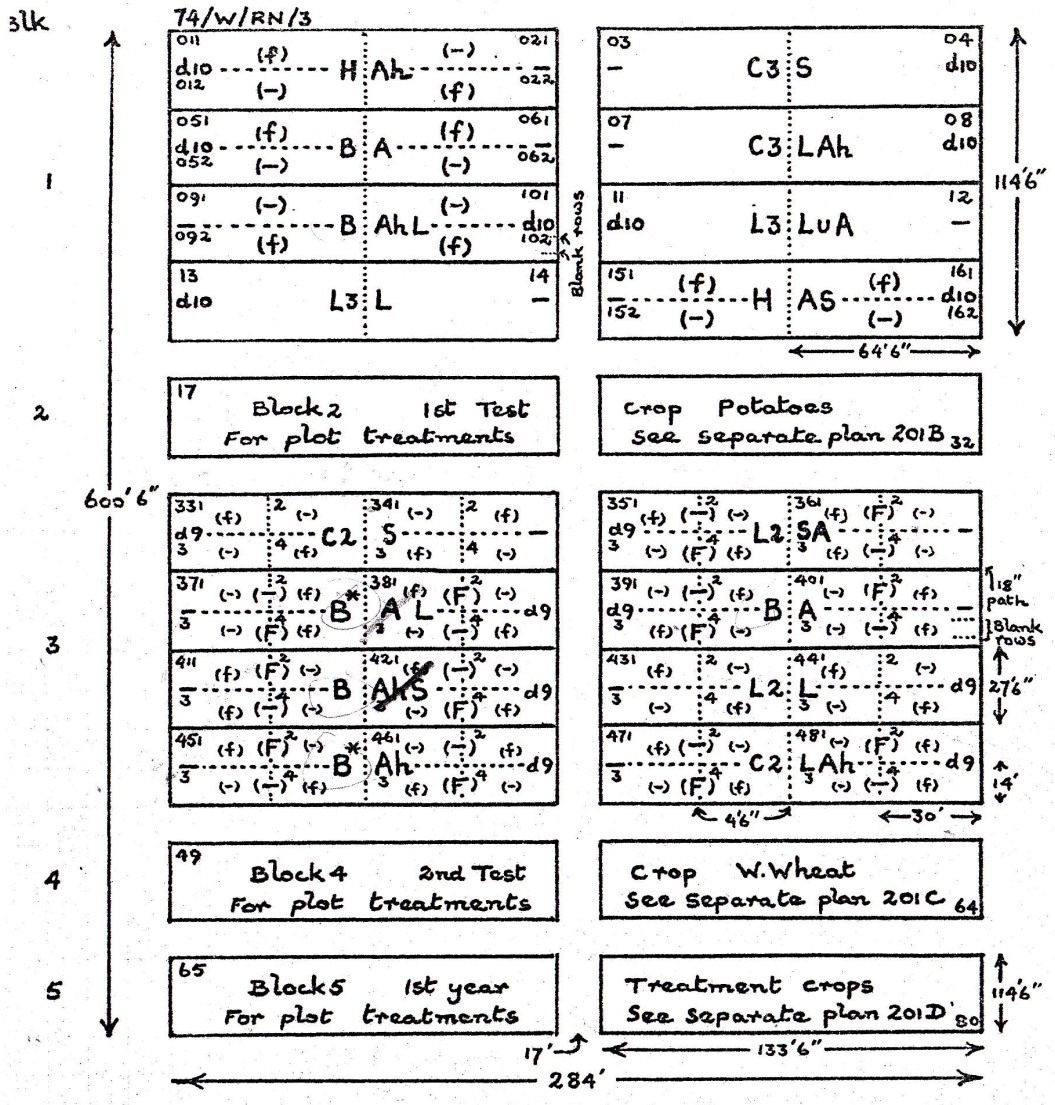
14'x30' = 0·0096 acre (0·0039 ha).

Harvested 9'4"x30' = 0·0064 acre (0·0026 ha).

WOBURN ARABLE AND LEY ROTATION

37th year STACKYARD "D" 1974 201A

74/W/RN/3



N

Sponsors: D.A.Boyd, J.M.Hirst, A.E.Johnston, F.G.W.Jones

SYMBOLS

Rotations

3 years ARABLE A = Potatoes P, Barley B, Barley B.
Ah = Potatoes P, Barley B⅓*, Hay H.

3 years LEY C = Red clover cut for hay (S=Sainfoin, Lu=Lucerne)
L = Ley, cut.

2nd and 3rd TREATMENT CROPS

Residues of fumigants applied to Potatoes 1971 - 2nd treatment crops 1974

(-), (f) None, 400lb (448kg) chloropicrin + 10lb (11.2kg) Aldicarb.

Residues of fumigants applied to 1st Treatment crops 1973 - 2nd treatment crops 197

(-), (F) None, 400lb (448kg) chloropicrin + 6lb (6.7kg) Aldicarb. (Applied to plots 35/36 & 47/48 in error.)

Residues of fumigants applied to Potatoes 1972 - 3rd treatment crops 1974.

(-), (f) None, 400lb (448kg) chloropicrin + 5lb (6kg) Aldicarb.

2nd and 3rd treatment Barley (Julia dressed ethirimol) sown:

337lb (418kg) compound fertiliser (15:15:15) C.D.

3rd treatment crop Hay ⅓s 1973 in Barley

1.0 cwt (126kg) N as 'Nitro-chalk' 25, 0.6 cwt (75kg) P_2O_5, 1.2 cwt (151kg) K_2O as (0:14:28) in Spring. 0.6 cwt (75kg) N, 0.4 cwt (50kg) K_2O as (25:0:16) after 1st cut.

2nd and 3rd year cut Ley

1.2 cwt (151kg) N, 0.9 cwt (113kg) K_2O as (25:0:16) in three equal dressings. Any dressing may be omitted or reduced in a wet season.

2nd and 3rd year clover

0.5 cwt (63kg) N as 'Nitro-chalk' 25, 1.5 (188kg) K_2O as muriate of potash, in Spring.

ALL CROPS :- FYM

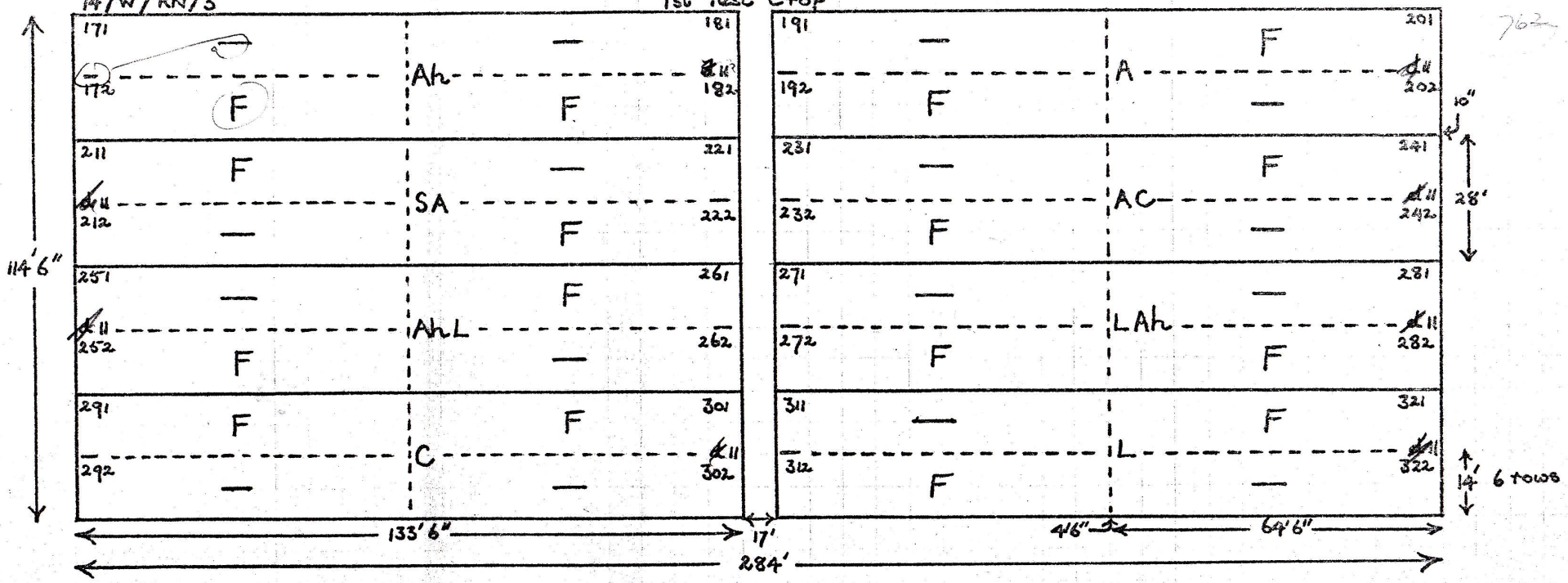
-, d Residual of none v. 15 tons (38 tonnes). FYM applied to Sugar beet 1962-67 (1st test crop).

WOBURN ARABLE AND LEY ROTATION 31st year STACKYARD D 19/4

Potatoes Block 2 N

1st Test Crop

74/W/RN/3



TREATMENTS per acre (hectare)

FYM residues

-, d11 None, FYM residues - last applied 1964

FUMIGANTS

- None

F 200lb(224kg) 'Telone' in autumn + 6lb(6·7kg) aldicarb in spring

VARIETY Maris Piper Planted: 10 Apr

BASAL MANURING per acre (hectare)

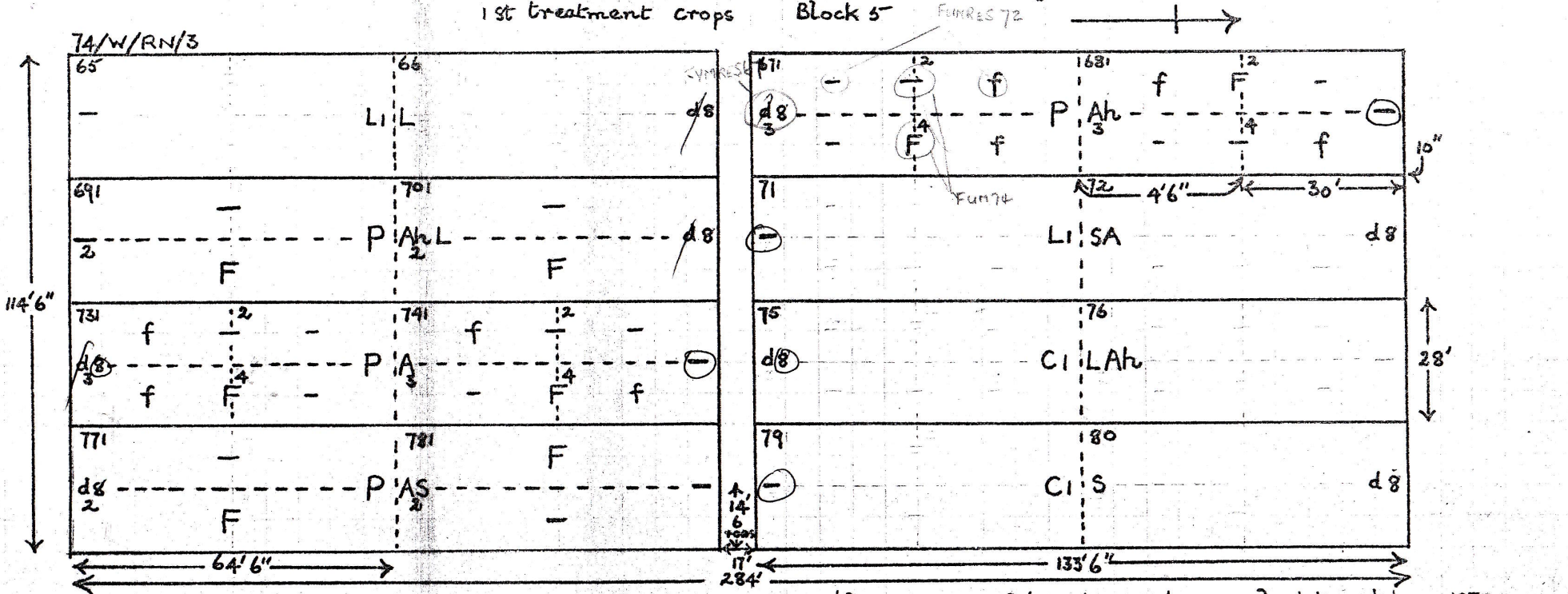
1730lb (1939kg) compound fertiliser (13:13:20).

PLOT AREA

14' x 64'6" = 0·0207 acre (0·0084 ha)

WOBURN ARABLE AND LEY ROTATION 37th year STACKYARD D 1974 201D

1st treatment crops Block 5



SYMBOLS

Rotations

3 years ARABLE A = Potatoes P, Barley B, Barley B.
Ah = Potatoes P, Barley ½S*, Hay H.

3 years LEY C = Red Clover cut for hay (S = Sainfoin) Sown: 5 Apr
L = Ley cut. Sown: 5 Apr

TREATMENTS per acre (hectare) Fumigants cumulative on 1969
-, F. None, 200lb (224kg) 'Telone' applied: 22 Nov, plus 6lb (6·7kg) aldicarb applied: 9 Apr

Chloropicrin + aldicarb residues applied to potatoes 1972
-, f None, Chloropicrin + aldicarb

FYM residues
-, d8 None, FYM residues - last applied 1967

VARIETY Potatoes - Maris Piper Planted: 10 Apr

BASAL MANURING per acre (hectare)
17 3/0lb (1939kg) compound fertiliser (13:13:20)

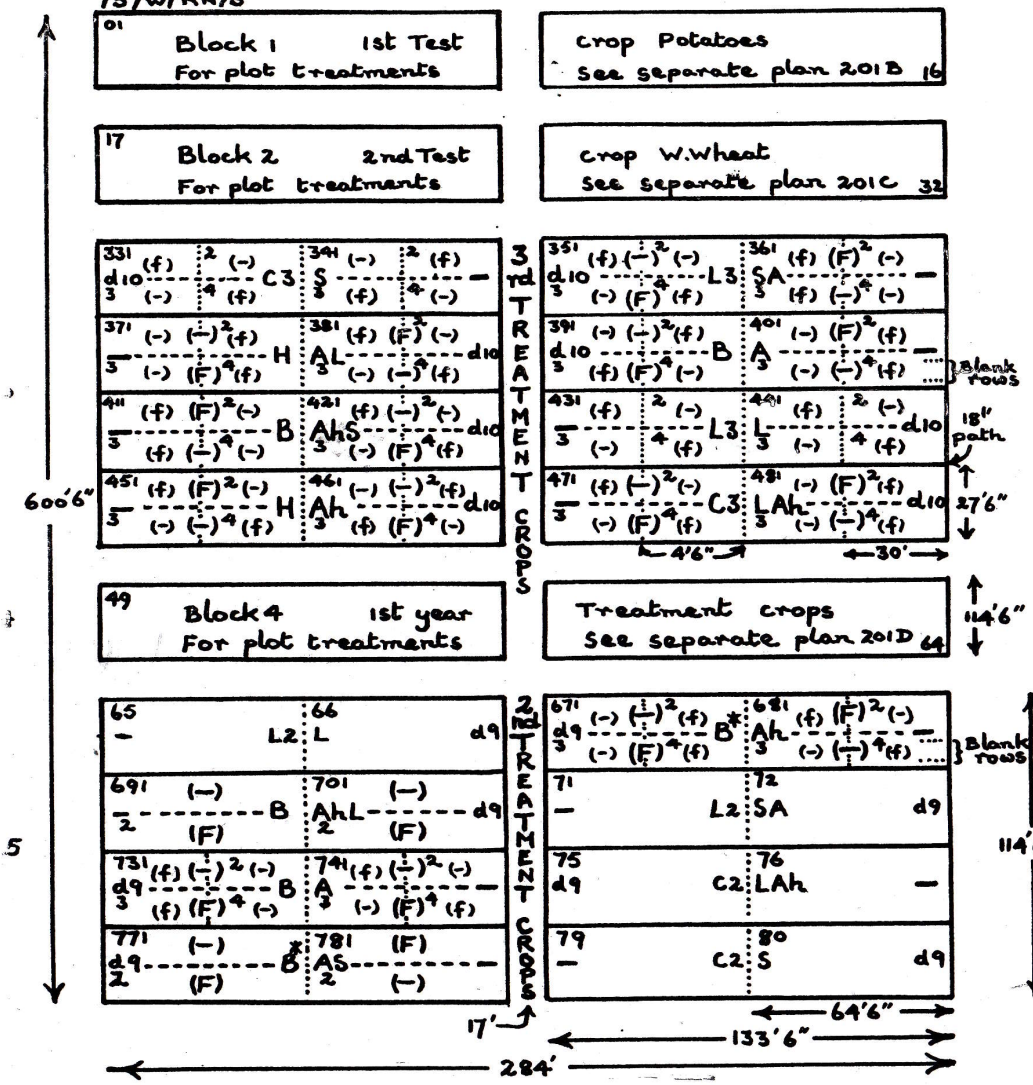
SUB-PLOT AREA
14'x30' = 0·0096 acre (0·0039ha)

WOBURN ARABLE AND LEY ROTATION — 38th year — STACKYARD 'D' 1975 — 201A

N

Sponsors: D.A.Boyd, J.M.Hirst, A.E.Johnston, F.G.W. Jones

75/w/RN/3



SYMBOLS

Rotations

3 years ARABLE A = Potatoes P, Barley B, Barley B.
Ah = Potatoes P, Barley B⅓s*, Hay H.

3 years LEY C = Red clover cut for hay (S = Sainfoin)
L = Ley, cut

2nd and 3rd year TREATMENT CROPS

Residues of fumigants applied to potatoes 1972 – 2nd treatment crop 1975
(-),(f) None, 400lb (448kg) chloropicrin + 10lb (11.2kg) aldicarb.

Residues of fumigants applied to potatoes 1974 – 2nd treatment crop 1975
(-),(F) None, 200lb (224kg) 'Telone' + 6lb (6.7kg) aldicarb.

Residues of fumigants applied to 1st Test Crop Potatoes 1971 – 3rd treatment crop 1975
(-),(f) None, 400lb (448kg) chloropicrin + 10lb (11.2kg) aldicarb.

Residues of fumigants applied to 1st Treatment crop 1973 – 3rd treatment crop 1975
(-),(F) None, 400lb (448kg) chloropicrin + 6lb (6.7kg) aldicarb (applied to plots 35/36 & 47/48 in error).

2nd and 3rd treatment Barley (Julia dressed ethirimol) Resown: 1 May
365lb (409kg) compound fertiliser (15:15:15) C.D.

3rd treatment crop Hay ⅓s 1974 in Barley
1.0 cwt (126kg) N as 'Nitro-chalk' 25, 0.6 cwt (75kg) P_2O_5, 1.2 cwt (151kg) K_2O as (0:14:28) in spring. 0.6 cwt (75kg) N, 0.4 cwt (50kg) K_2O as (25:0:16) after 1st cut.

2nd and 3rd year cut Ley
1.2 cwt (151kg) N, 0.9 cwt (113kg) K_2O as (25:0:16) in three equal dressings.
Any dressing may be omitted or reduced in a wet season.

2nd and 3rd year clover
0.5 cwt (63kg) N, as 'Nitro-chalk' 25, 1.5 (188kg) K_2O as muriate of potash, in spring.

ALL CROPS :- FYM

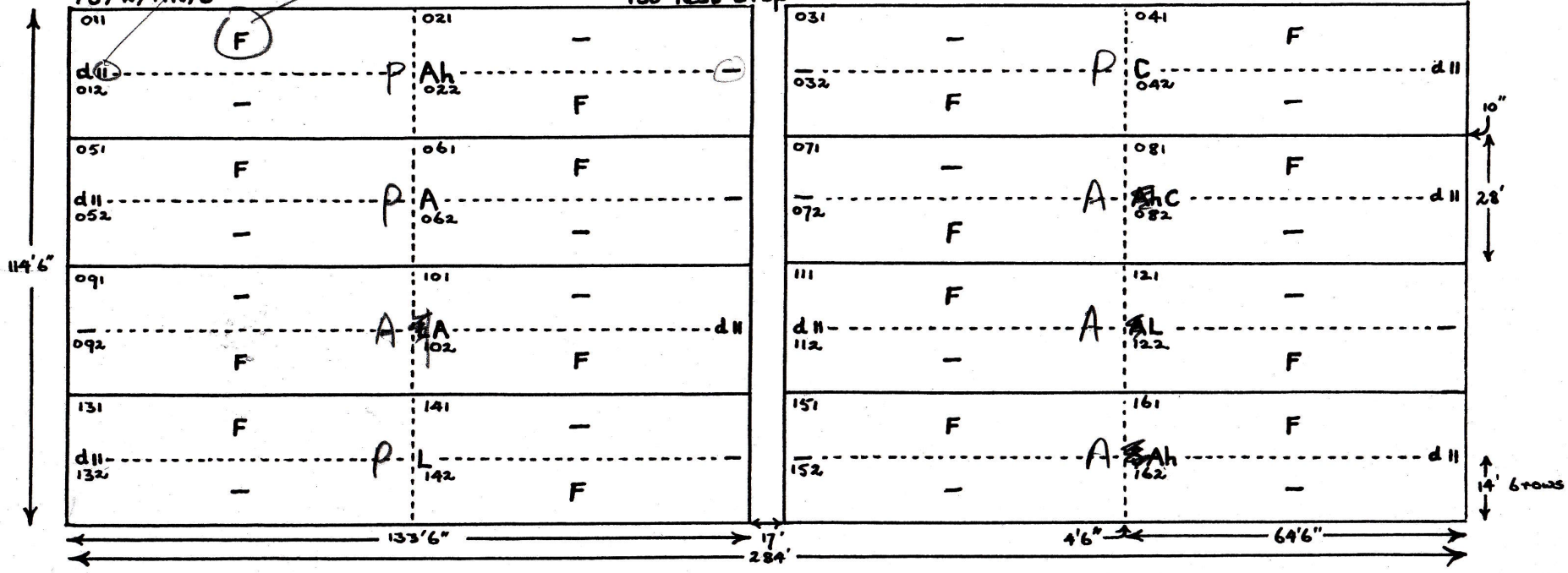
-, d Residual of none v. 15 tons (38 tonnes). FYM applied to Sugar beat 1962-67 (1st test crop).

WOBURN ARABLE AND LEY ROTATION 38th year STACKYARD D 1975

Potatoes Block 1 → N Sponsors: D.A. Boyd, J.M. Hirst, A.E. Johnston, F.G.W. Jones

1st Test Crop

75/W/RN/3



TREATMENTS per acre (hectare)

FYM residues

–, d II None, FYM residues - last applied 1965.

FUMIGANTS

– None

F 200lb (224kg) 'Telone' in autumn + 10lb (11.2kg) aldicarb in spring

VARIETY Maris Piper Planted: 5 May

BASAL MANURING per acre (hectare)

1730lb (1939kg) compound fertiliser (13:13:20)

PLOT AREA

14' x 64'6" = 0.0207 acre (0.0084 ha)

75

201 C

WOBURN ARABLE AND LEY ROTATION 38th year STACKYARD D 1975

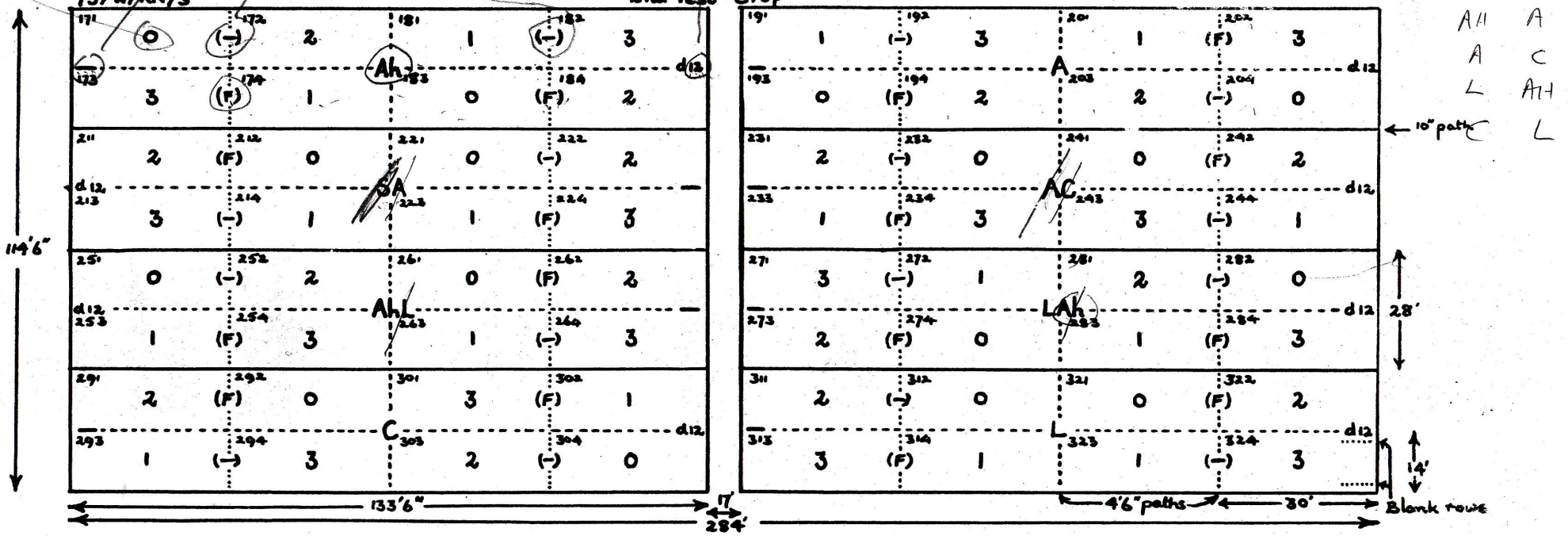
(FYM RES 6 L)

FYM RES 74

Winter Wheat Block 2 2nd Test Crop

N Sponsors: D.A. Boyd, J.M. Kirst, A.E. Johnston, F.G.W. Jones

75/W/RN/3



PERM ALT

TREATMENTS per acre (hectare)

FYM residues

–, d 12 None, FYM residues-last applied 1964

Fumigants - applied for potatoes 1974

(–) None

(F) Residues of 200lb (224kg) 'Telone' + 6lb (6·7kg) aldicarb.

Nitrogen

0, 1, 2, 3 None, 0·5, 1·0, 1·5 cwt N (63, 126, 189kg) as 'Nitro-chalk' 25

BASAL MANURING per acre (hectare)

260lb (290kg) of (0:20:20) C.D.

VARIETY

Cappelle dressed dieldrin Sown @ 175lb (196kg) Date: 8 Nov 1974

PLOT AREA

14'x 30' = 0·0096 acre (0·0039 ha)

Harvested: 9'4"x 30' = 0·0064 acre (0·0026 ha)

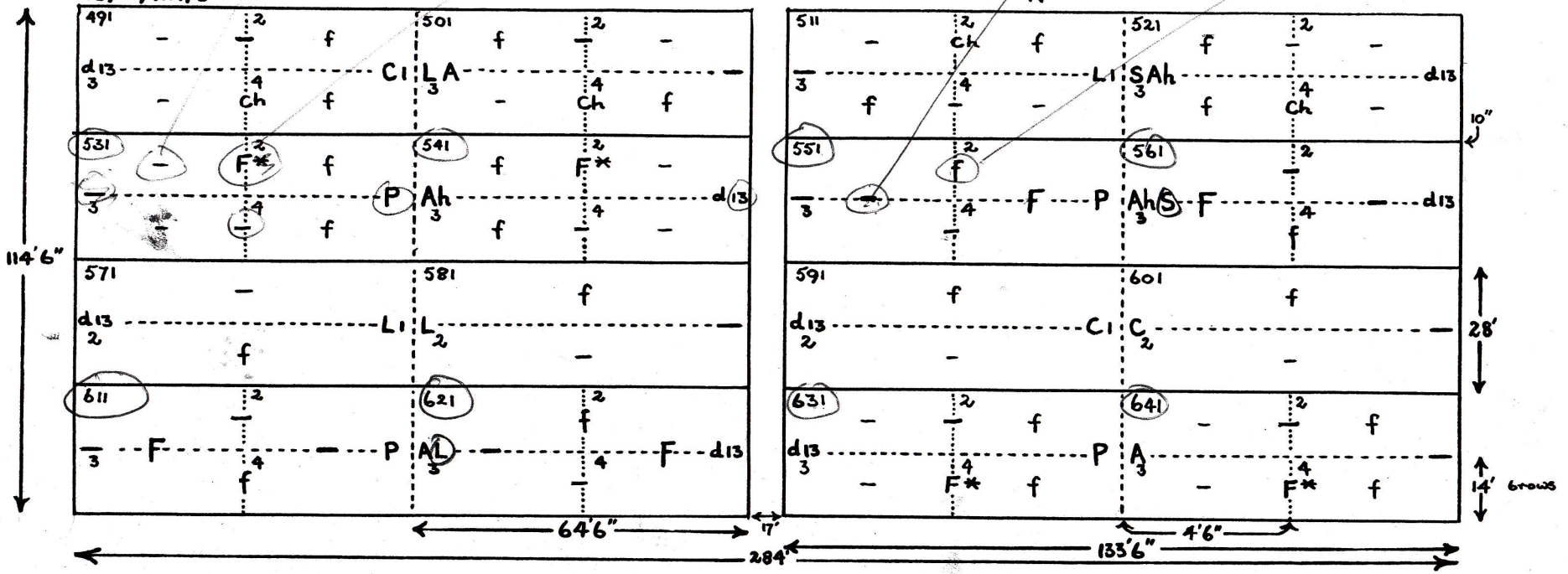
(1) Fumres 73 (2) Fum 75(70) (2) Fum 75 (1) Fumres 77/201 D

WOBURN ARABLE AND LEY ROTATION 38th year STACKYARD D 1975

1st treatment crops Block 4 N

Sponsors: D.A. Boyd, J.M. Hirst, A.E. Johnston, F.G.W. Jones

75/W/RN/3



SYMBOLS

Rotations

3 years ARABLE A = Potatoes P, Barley B, Barley B.
Ah = Potatoes P, Barley ½*, Hay H. Sown: 1 May

3 years LEY C = Red Clover cut for hay. Sown: 2 May
L = Ley Cut. Sown 2 May

TREATMENTS per acre (hectare) Fumigants cumulative on 1970(c)* and 1973(f)

\- None
F 200lb (224kg) 'Telone' in autumn + 10lb (11.2kg) aldicarb in spring

Chloropicrin residues applied for potatoes 1970
-, Ch None, 400lb (448kg) chloropicrin

chloropicrin + aldicarb residues applied for 1st test crop potatoes 1973
- f None, 400lb (448kg) chloropicrin + 6lb (6.7kg) aldicarb.

FYM residues -, d13 None, FYM residues - last applied 1963.

VARIETY Potatoes - Maris Piper Planted: 5 May

BASAL MANURING per acre (hectare)
1730lb (1939kg) compound fertiliser (13:13:20)

SUB-PLOT AREA 14'x30' = 0.0096 acre (0.0039 ha)

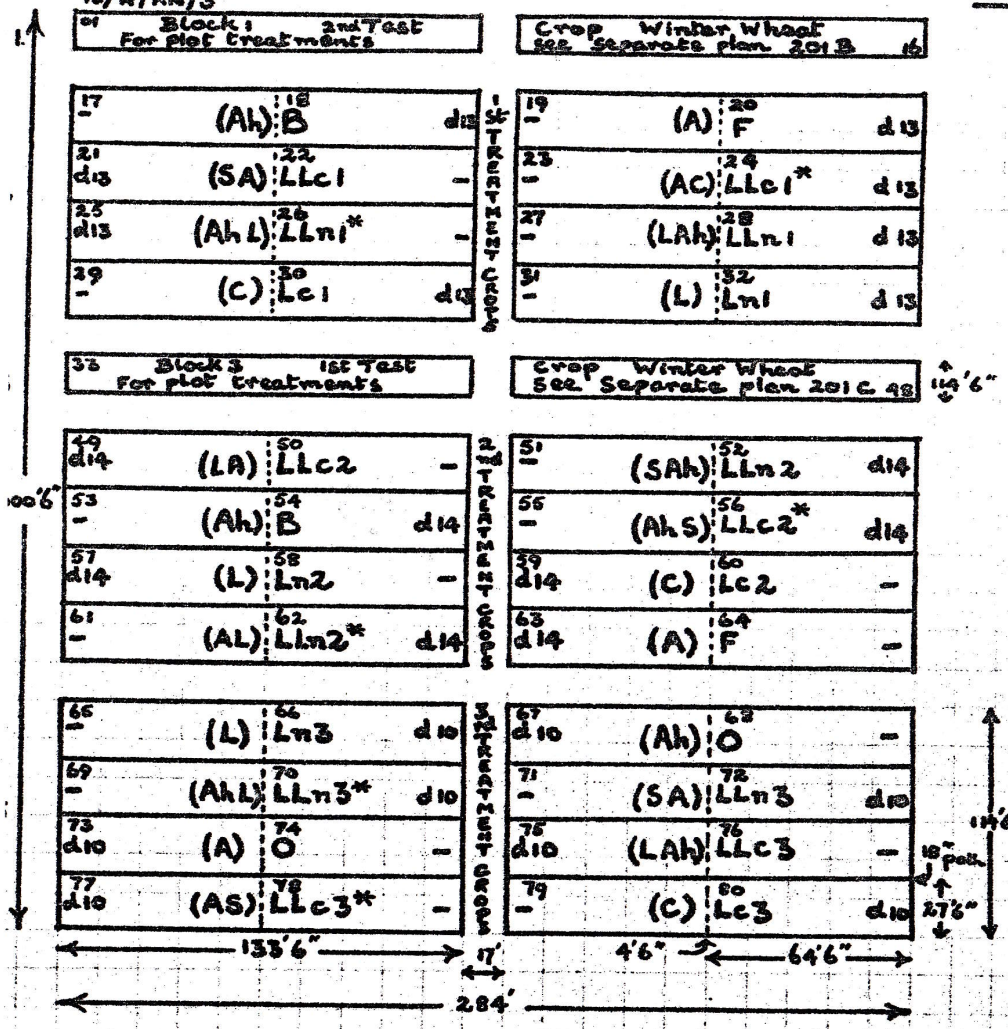
WOBURN ARABLE AND LEY ROTATION

T6/W/RN/3

39th year → N

STACKYARD 'D' 1976 20:1A

Sponsors: D.A.Boyd, K.Evans, A.E.Johnston, F.G.W.Jones, G.A.Salt.



SYMBOLS

From 1976 major revisions have been made:-

Previous Rotations: (R), (Ah), (C), (L), (S) not defined on this plan.

From 1976 AH Barley B, Barley B, Oats O.
A Fallow F, Fallow F, Oats O.
Lc 3 years clover/grass ley (no N)
Ln 3 years all grass ley (with N)
LLc & LLn 8 year leys treated as above. * = ploughed up in less than 8 years initially during phasing in.
Normally followed by Test Crops. Wheat and Barley (Wheat in 1976 to complete previous cycle)

NOTE: Lc & Ln 2 & 3 are all fresh sowings 1976.

To all crops: –, dn Residues of none v 15 tons/acre (38t/ha) FYM last applied n years ago.

BASAL MANURING per acre (hectare)

Barley - Julia (dressed with ethirimol) @ 145 lb (162 kg)
Oats - Maned @ 170 lb (190 kg)
} 360lb (400kg) compound fertiliser (20:14:14) C.D. Sown: 22 Mar

All – grass ley. Sown: 22 Apr

1st year: 75kg (67lb) N as Nitrochalk 26, 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in the seedbed. 75kg (67lb) N, 48kg (43lb) K_2O as (25:0:16) after each cut except the last.

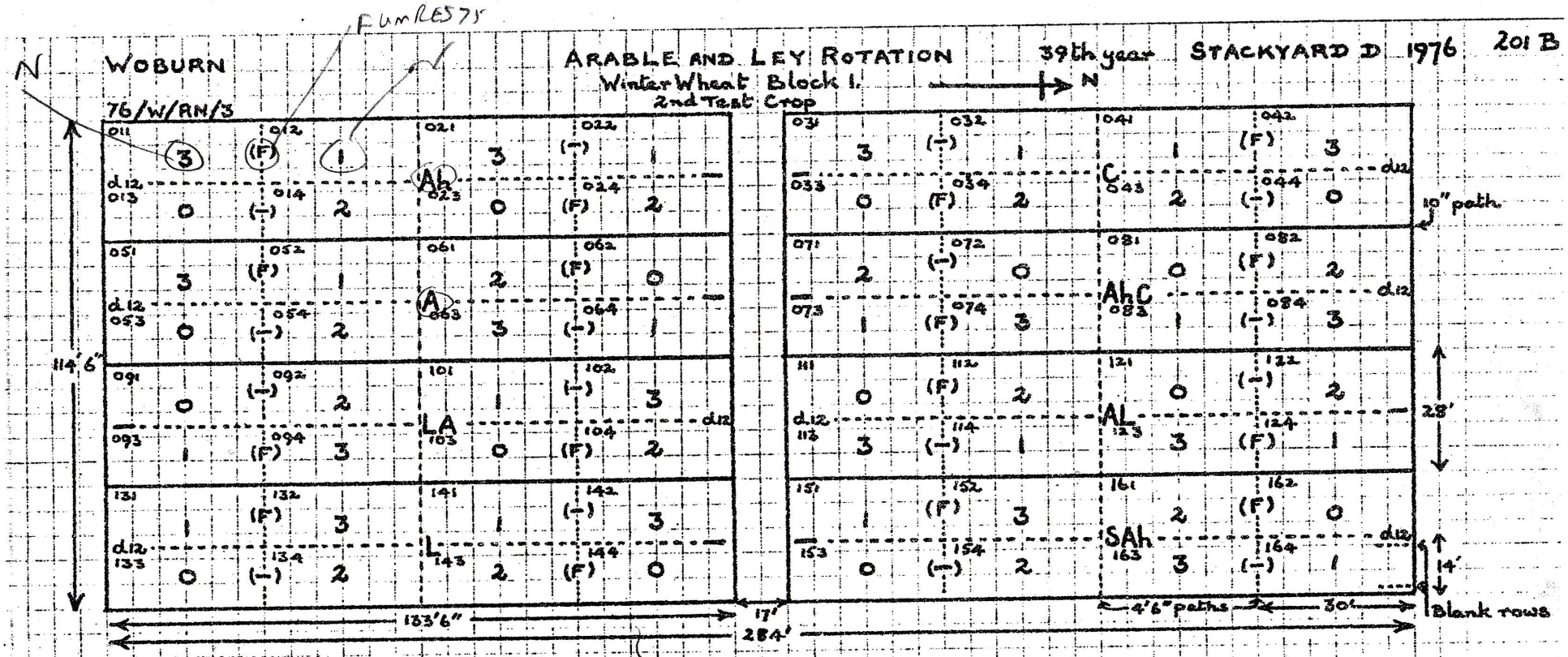
2nd + years: 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in winter. 75kg (67lb) N, 48kg (43lb) K_2O as (25:0:16) in Spring and after each cut except the last.

Clover/grass ley - as Ln but omitting N. K per cut as muriate of potash

1st year: 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in the seedbed. 48kg (43lb) K_2O as Muriate of Potash after each cut except the last.

2nd + years: 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in winter. 48kg (43lb) K_2O as Muriate of Potash in spring, and after each cut except the last.

Leys drilled: 22 Apr.



TREATMENTS per acre (hectare)

FYM residues

-, d 12 None, FYM residues - last applied 1965

FUMIGANTS - applied for potatoes 1975

\- None.

F 200 lb (224 kg) 'Telone' in autumn +
10 lb (11.2 kg) aldicarb in spring

Nitrogen

0, 1, 2, 3 None, 0.5, 1.0, 1.5 cwt N (63, 126, 189 kg) as 'Nitro-chalk' 25

BASAL MANURING per acre (hectare)

2 7 0 lb (303 kg) of compound fertiliser (0:20:20) c.D.

VARIETY

Cappelle

Sown: 15 Oct at : 190 lb (213 kg)

PLOT AREA

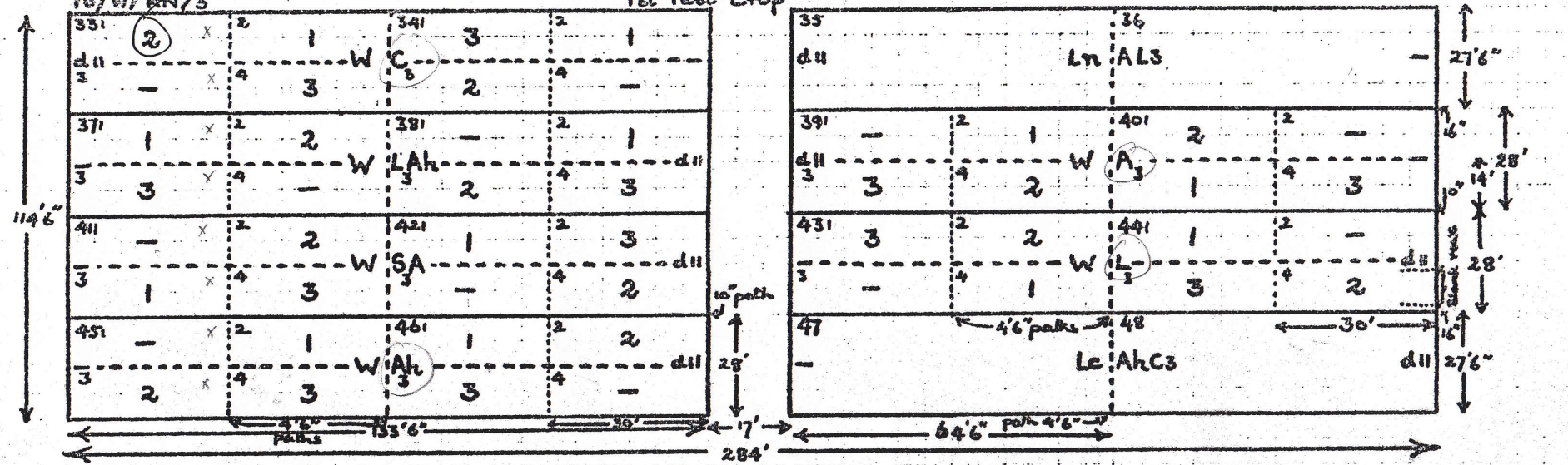
14'x30' = 0.0096 acre (0.0039 ha)

Harvested 9'4"x30' = 0.0064 acre (0.0026 ha)

WOBURN ARABLE AND LEY ROTATION 89th year STACKYARD 'D' 1976 201 C

Winter Wheat Block 3 ——→ N

76/W/RN/3 1st Test Crop



TREATMENTS per acre (hectare)

FYM residues

- d11 None, FYM residues - last applied 1966

Cropping

W Winter Wheat @ 190lb (213 kg) Variety: Cappella (dressed Anti Bulb fly & Fungicide seed dressing) Sown: 10 Nov

Ln Ley with N } Sown in spring 1976 without
Lc Ley with Clover } ploughing previous L3 & C3

Nitrogen to Winter Wheat

-, 1, 2, 3 None, 0·5, 1·0, 1·5 cwt N (63, 126, 189 kg) as 'Nitro-chalk' 25

BASAL APPLICATION to Winter Wheat only

Aldicarb at 10kg/ha (9lb/acre)

BASAL MANURING per acre (hectare)

Winter Wheat: 270 lb (300kg) compound fertiliser (0:20:20) C.D.

Ley with N: 480lb (538kg) of (0:14:28) + 268 lb (300 kg) of Nitro-chalk 25 to lay } 300 lb (336 kg) of (25:0:11) after each cut except the last.

Ley with Clover: with N only in the seedbed, polish after each cut except the last. } 60 lb (67 kg) of muriate of

PLOT AREA

Winter Wheat: 14' x 30' = 0·0096 acre (0·0039 ha)
Harvested: 9'4" x 30' = 0·0064 acre (0·0026 ha)

Ley with N and Ley with Clover: 27'6" x 64'6" = 0·0407 acre (0·0165 ha)

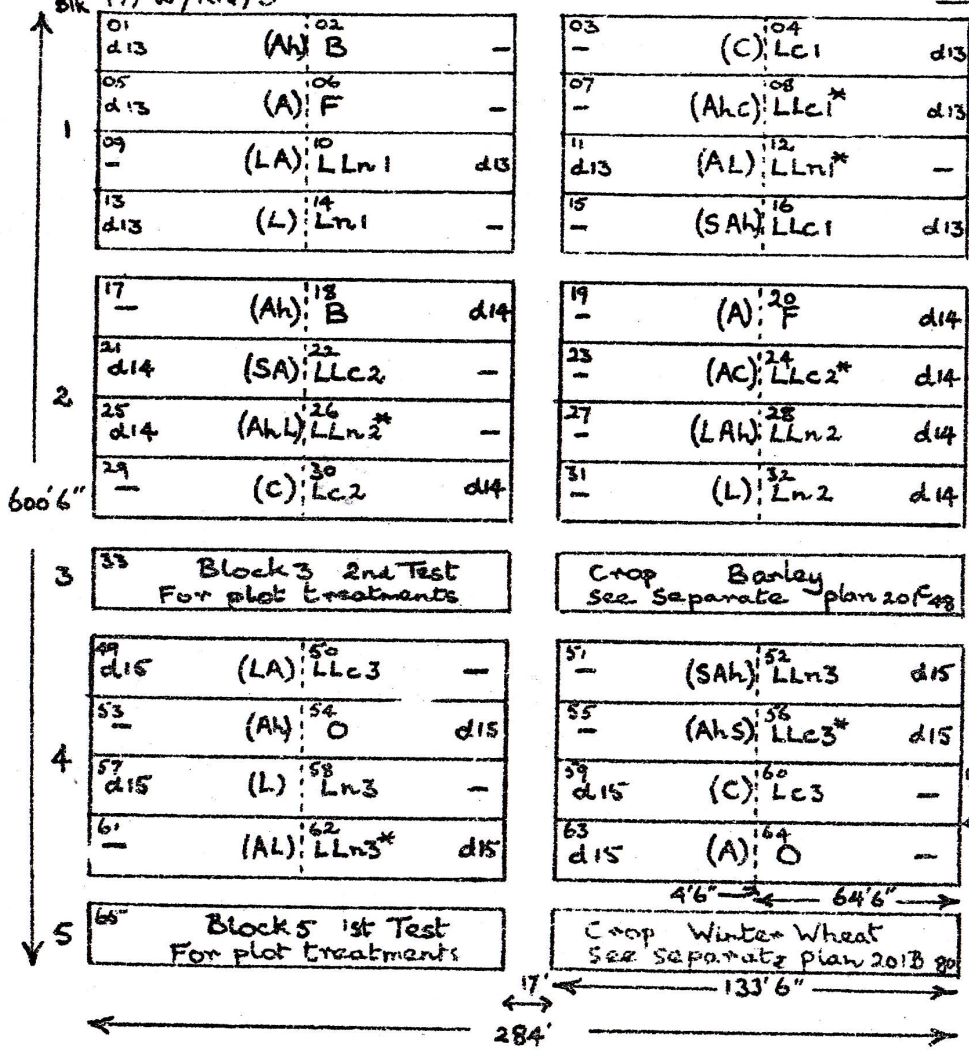
WOBURN ARABLE AND LEY ROTATION

77/W/RN/3

40th year

STACKYARD 'D' 1977 201A

Sponsors: K.Evans, A.E.Johnston, F.E.W.Jones, G.A.Salt



N

SYMBOLS

From 1976 major revisions have been made:-

Previous Rotations: (A), (Ah), (c), (L), (S) not defined on this plan

From 1976 AH: Barley B, Barley B, Oats O.
A: Fallow F, Fallow F, Oats O.
Lc: 3 years clover/grass ley (no N)
Ln: 3 years all grass ley (with N)
LLc & LLn 8 year leys treated as above.

* = ploughed up in less than 8 years initially during phasing in.

Followed by Test Crops Wheat W, Barley B.

NOTE: All Lc, Ln, LLc and LLn 2 & 3 Failed in 1976 and resown in autumn 1976

To all crops:- dn Residues of: none v. 15 tons/acre (38 t/ha) FYM last applied n years ago.

BASAL MANURING per acre (hectare) to treatment crops:

Barley - Julia (dressed with ettirimol) } 360 lb (400kg) compound
Oats - Manod } fertiliser (20:14:14) c.d.

All - Grass Ley

1st year: 75 kg (67lb) N as 'Nitro-chalk' 25, 75kg (67lb) P_2O_5, 150lb (134lb) K_2O as (0:14:28) in the seedbed, 75kg (67lb) N, 48kg (43lb) K_2O as (25:0:16) after each cut except the last

2nd + years: 75 kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in winter. 75kg (67lb) N, 48kg (43lb) K_2O as (25:0:16) in spring and after each cut except the last

Clover/grass Ley - as Ln but omitting N, K per cut as Muriate of potash

1st year: 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in the seedbed. 48kg (43lb) K_2O as Muriate of potash after each cut except the last.

2nd + years: 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in winter. 48kg (43lb) K_2O as Muriate of potash in spring and after each cut except the last.

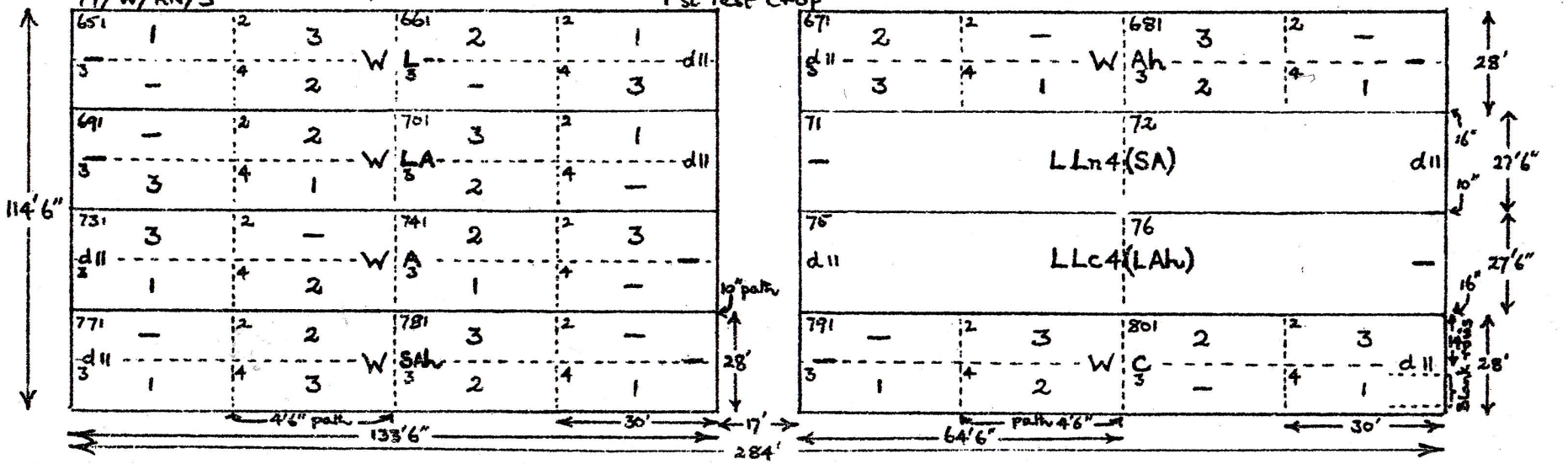
Barley sown at 145 lb (162 kg) } on 8 Apr
Oats sown at 180 lb (202 kg) }

WOBURN ARABLE AND LEY ROTATION 40th year STACKYARD 'D' 1977 201 B

77/W/RN/3 N

Winter Wheat Block 5
1st Test Crop

Sponsors: K.E.Evans, A.E.Johnston, F.G.W.Jones, G.A.Salt



TREATMENTS per acre (hectare)

FYM residues

-, d 11 None, FYM residues - last applied 1967

Cropping

W Winter wheat Variety: Cappelle, (dressed Anti Bulb-fly & Fungicide seed dressing). Sown at 190lb (213kg) Date: 24 Nov

LLn4 Ley with N } resown 30lb (34kg)
LLc4 Ley with Clover } 13 Oct 35lb (39kg)

Nitrogen to Winter Wheat

-, 1, 2, 3 None, 0·5, 1·0, 1·5 cwt N (63, 126, 189kg) N as 'Nitro-chalk' 25

STANDARD APPLICATION to winter wheat only

Aldicarb at 10kg/ha (9lb/acre) applied: 24 Nov

BASAL MANURING per acre (hectare)

Winter Wheat: 300kg (270lb) compound fertiliser (0:20:20) c D.

Ley with N 74kg (66lb) N, 47kg (42lb) K_2O as (25:0:16) applied in the Spring and after each cut except the last.

Ley with clover: 48kg (43lb) K_2O as muriate of potash in the Spring and after each cut except the last.

PLOT AREA

Winter Wheat: 14'x30' = 0.0096 acre (0.0039ha)
Harvested: 9'4"x30' = 0.0064 acre (0.0026ha)

Ley with N and
Ley with clover: 27'6"x64'6" = 0.0407 acre (0.0165ha)

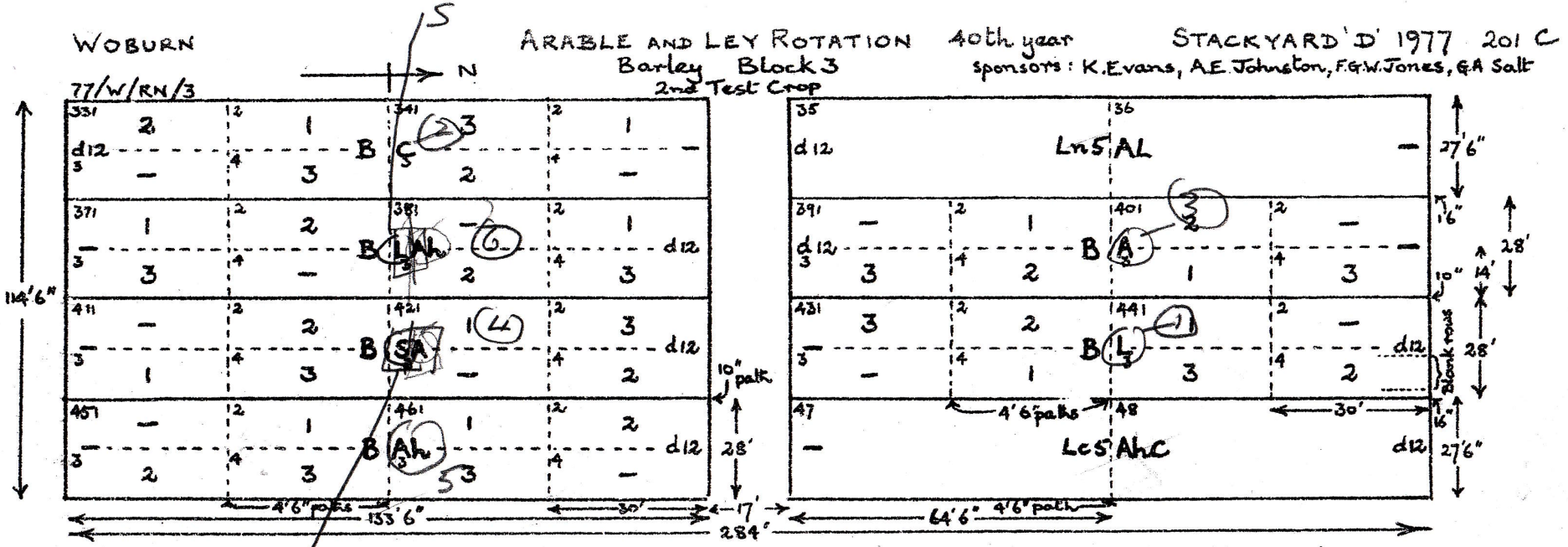
WOBURN

ARABLE AND LEY ROTATION 40th year STACKYARD 'D' 1977 201 C

Barley Block 3
2nd Test Crop

sponsors: K.E.Evans, A.E.Johnston, F.G.W.Jones, G.A Salt

77/W/RN/3



TREATMENTS per acre (hectare)
FYM residues
- d 12 None, FYM residues - last applied 1966

Cropping
B Barley Variety: Julia (dressed with ethirimol) Sown at: 145 lb (162 kg) Date: 8 Apr
Ln Ley with N } resown in autumn 1976
Lc Ley with clover } after failure of spring sowing

Nitrogen to Barley
-, 1, 2, 3 None, 0·4, 0·8, 1·2 cwt N/acre (50, 100, 150 kg/ha) Nas Nitro-chalk 25

BASAL APPLICATION to Barley only
Aldicarb at 10kg/ha (9lb/acre)

BASAL MANURING per acre (hectare)
Barley: 270lb (300kg) compound fertiliser (0:20:20) CD.
Ley with N: 74kg (66lb) N, 47kg (42lb) K_2O as (25:0:16) applied in the spring and after each cut except the last
Ley with clover: 48kg (43lb) K_2O as muriate of potash in the Spring and after each cut except the last.

PLOT AREA
Barley: 14' x 30' = 0·0096 acre (0·0039 ha)
Harvested: 9'4" x 30' = 0·0064 acre (0·0026 ha)
Ley with N and
Ley with clover: 27'6" x 64'6" = 0·0407 acre (0·0165 ha)

WOBURN ARABLE AND LEY ROTATION

41st year STACKYARD D 1978 201 A

N

Sponsors: A.E. Johnston, F.G.W. Jones, G.A. Salt

Blk 78/W/RN/3

1.	01 d14	(Ah)	02 B	–	03 –	(C)	04 Lc2 d14
	05 d14	(A)	06 F	–	07 –	(AhC)	08 LLc2* d14
	09 –	(LA)	10 LLn2	d14	11 d14	(AL)	12 LLn2* –
	13 d14	(L)	14 Ln2	–	15 –	(SAh)	16 LLc2 d14
2.	17 –	(Ah)	18 O	d15	19 –	(A)	20 O d15
	21 d15	(SA)	22 LLc3	–	23 –	(AC)	24 LLc3* d15
	25 d15	(AhL)	26 LLn3*	–	27 –	(LAh)	28 LLn3 d15
	29 –	(C)	30 Lc3	d15	31 –	(L)	32 Ln3 d15
3.	33 d13	(C)	34 Lc1	–	35 d13	(AL)	36 LLn6 –
	37 –	(LAh)	38 LLn1	d13	39 d13	(A)	40 F –
	41 –	(SA)	42 LLc1	d13	43 –	(L)	44 Ln1 d13
	45 –	(Ah)	46 B	d13	47 –	(AhC)	48 LLc6 d13
4.	49 Block 4 1st Test For plot treatments				Crop Winter Wheat See Separate Plan 201B 64		
5.	65 Block 5 2nd Test For plot treatments				Crop Barley See Separate Plan 201C 80		

600'6" 114'6" 18" path 27'6" 114'6" 4'6" 64'6" 17' 133'6" 284'

SYMBOLS

From 1976 major revisions have been made:-

Previous Rotations: (A), (Ah), (C), (L), (S) not defined on this plan

From 1976 AH: Barley B, Barley B, Oats O.
A : Fallow F, Fallow F, Oats O.
Lc : 3 years clover/grass ley (no N)
Ln : 3 years all grass ley (with N)
LLc & LLn 8 year leys treated as above.

* = ploughed up in less than 8 year initially during phasing in Followed by Test Crops Wheat W, Barley B.

NOTE: All Lc, Ln, LLc and LLn 2&3 failed in 1976 and resown in autumn 1976.

To all crops:- dn Residues of none v. 15tons/acre (38t/ha) FYM last applied n years ago.

BASAL MANURING per acre (hectare) to treatment crops:

Barley - Porthos (dressed with ethirimol) } 360lb (400kg) compound
Oats - Manod } fertiliser (20:14:14) CD

All - Grass Ley

1st year: 75kg (67lb) N as Nitro-chalk 25, 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in the seedbed, 75kg (67lb) N, 48kg (43lb) K_2O as (25:0:16) after each cut except the last.

2nd+ years: 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in winter 75kg (67lb) N, 48kg (43lb) K_2O a (25:0:16) in spring and after each cut except the last.

Clover/grass ley as Ln but omitting N, K per cut as Muriate of potash

1st year: 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in the seedbed. 48kg (43lb) K_2O as Muriate of potash after each cut except the last.

2nd+ years: 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in winter. 48kg (43lb) K_2O as Muriate of potash in spring, and after each cut except the last.

Barley sown at 145lb (162kg) Date: Redrilled 7 Apr
Oats sown at 180lb (202kg) Date: 13 Mar

WOBURN

ARABLE AND LEY ROTATION 41st year

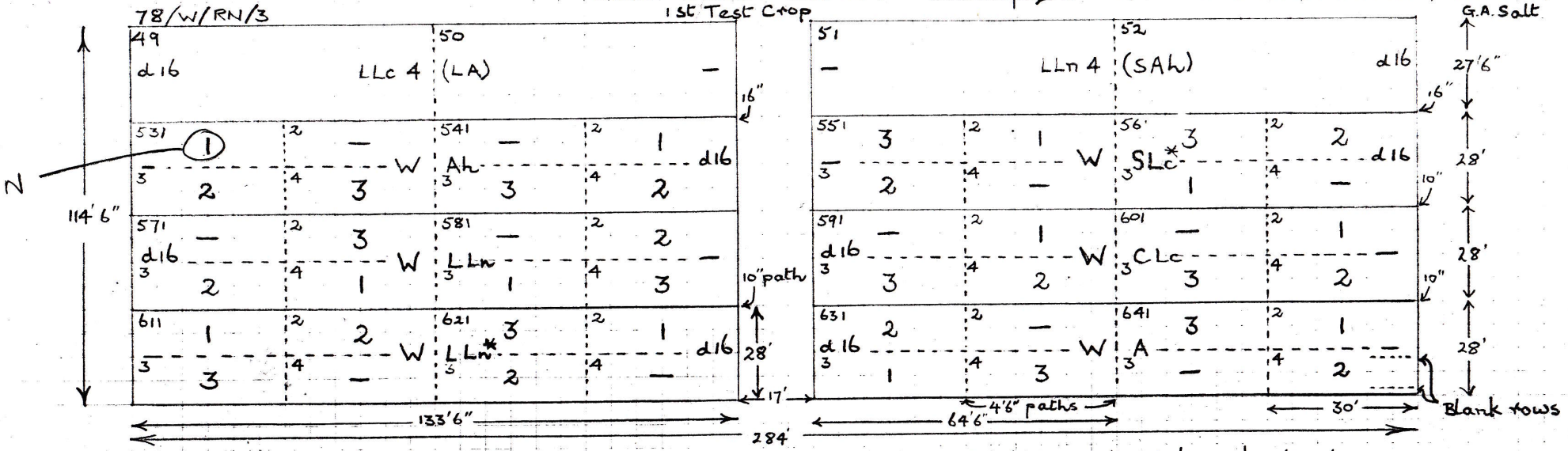
Winter Wheat Block 4

1st Test Crop

STACKYARD 'D' 1978 20 1 B

Sponsors: K.Evans, A.E.Johnston, F.G.W.Jones, G.A.Salt

78/W/RN/3



TREATMENTS per acre (hectare)

–, d16 None, FYM residues - last applied 1962

Cropping

W Winter wheat Variety: Cappelle

Sown at: 190lb (213kg) Date: 25 Oct

Other crop symbols - see main plan

Nitrogen to Winter Wheat

–, 1, 2, 3 None, 0·5, 1·0, 1·5 cwt N

(63, 126, 189 kg) N as 'Nitro-chalk' 25

STANDARD APPLICATION to winter wheat only

Aldicarb at 10kg/ha (9lb/acre) applied by farm

BASAL MANURING per acre (hectare)

Winter Wheat: 314 kg (280lb) compound fertiliser (0:20:20) cD

Ley with N 75 kg (67lb) P_2O_5, 150 kg (134lb) K_2O as (0:14:28) in winter.
75 kg (67lb) N, 48 kg (43lb) K_2O as (25:0:16) applied in spring and after each cut except the last.

Ley with clover: 75 kg (67lb) P_2O_5, 150 kg (134lb) K_2O as (0:14:28) in winter.
48 kg (43lb) K_2O as muriate of potash in the spring and after each cut except the last.

PLOT AREA

Winter Wheat: 14' x 30' = 0·0096 acre (0·0039 ha)

Harvested: 9'4" x 30' = 0·0064 acre (0·0026 ha)

Ley with N and Ley with clover: 27'6" x 64'6" = 0·0407 acre (0·0165 ha)

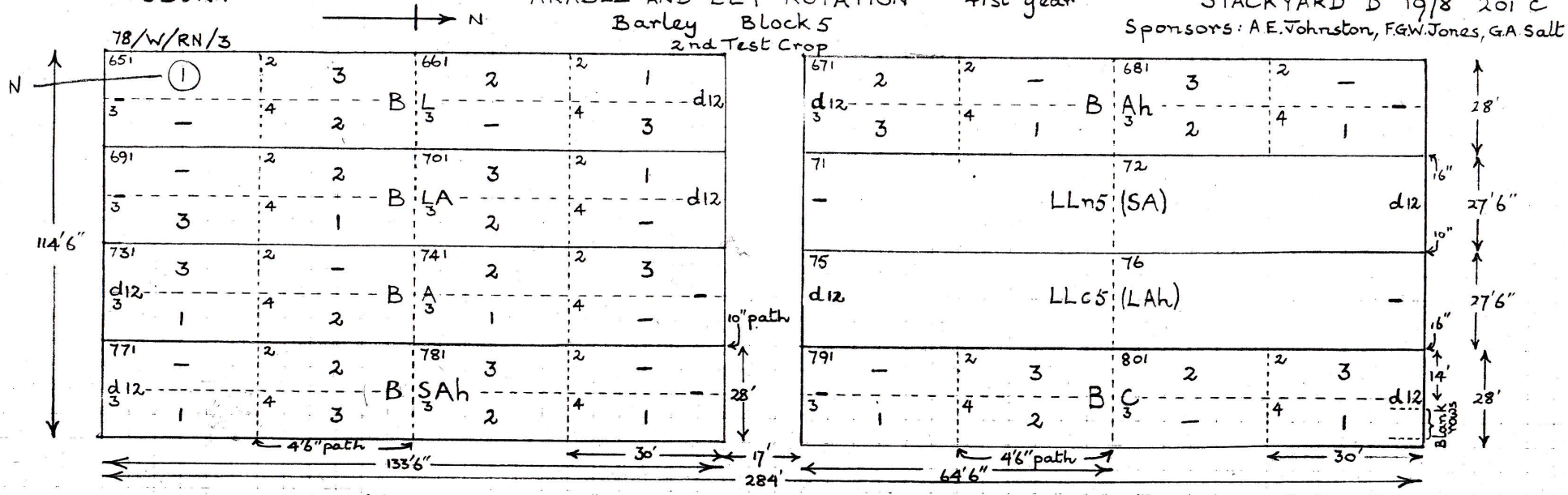
WOBURN — ARABLE AND LEY ROTATION — 41st year — STACKYARD 'D' 1978 201 C

78/W/RN/3

Barley Block 5

2nd Test Crop

Sponsors: A.E. Johnston, F.G.W. Jones, G.A. Salt



TREATMENTS per acre (hectare)

FYM residues

–, d12 None, FYM residues - last applied 1967

Cropping

B Barley variety: Porthos (dressed with ethirimol) Sown at: 145 lb (162 kg) Date: 3 Apr

LLn5 Ley with N } Resown

LLc5 Ley with clover } 13 Oct 1976

Nitrogen to Barley

–, 1, 2, 3 None, 0·4, 0·8, 1·2 cwt N/acre (50, 100, 150 kg/ha) N as 'Nitro-chalk' 25

STANDARD APPLICATION to Barley only

Aldicarb at 10 kg/ha (9 lb/acre)

BASAL MANURING per acre (hectare)

Barley: 270 lb (300 kg) compound fertiliser (0:20:20) C.D.

Ley with N: 75 kg (67 lb) N, 48 kg (43 lb) K_2O as (25:0:16) applied in the spring and after each cut except the last.

Ley with clover: 48 kg (43 lb) K_2O as muriate of potash in the spring and after each cut except the last.

PLOT AREA

Barley: 14' × 30' = 0·0096 acre (0·0039 ha)

Harvested: 9'4" × 30' = 0·0064 acre (0·0026 ha)

Ley with N and

Ley with clover 27'6" × 64'6" = 0·0407 acre (0·0165 ha)

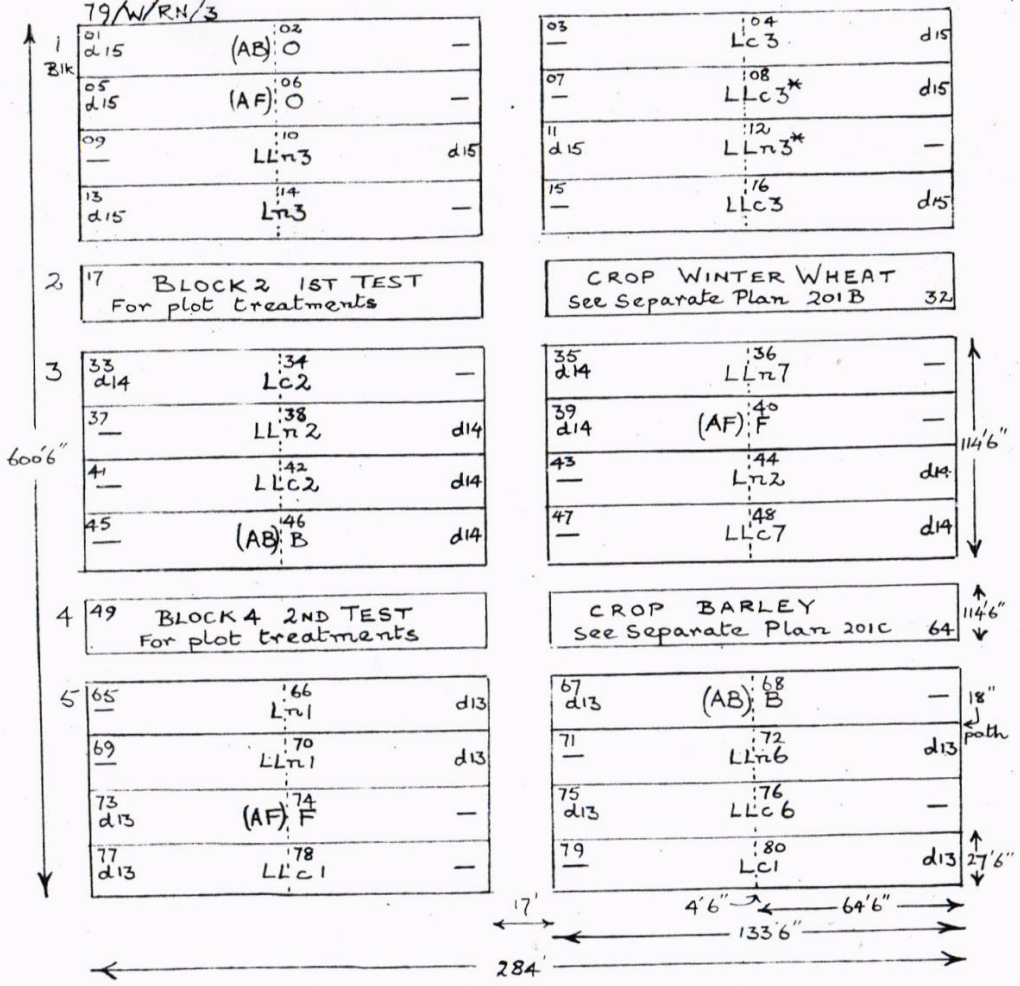
WOBURN ARABLE AND LEY ROTATION

42nd year → N

STACKYARD D 1979 201A

Sponsors: A.E. Johnston, F.G.W. Jones, G.A. Salt.

79/W/RN/3



SYMBOLS

3 year treatment crops before W. Wheat (1st), Barley (2nd) test crops

AB: Barley B, Barley B, Oats O.
AF: Fallow F, Fallow F, Oats O.
Lc: 3 years clover/grass ley (No N)
Ln: 3 years all grass ley (with N)

8 year Leys

LLc Clover/grass ley (No N)
LLn All grass ley (with N)
* = ploughed up in less than 8 years initially, during phasing in.

To all crops: – dn Residues of none v. 15 tons/acre (38 t/ha)
FYM last applied n years ago.

VARIETIES

Barley (dressed with ethirimol). – Porthos sown at 140lb (157kg) Date: 3 May
Oats – Manod sown at Date:

BASAL MANURING per acre (hectare) to treatment crops

Barley and Oats 360lb (400kg) compound fertiliser (20:14:14) C.D.

All-Grass ley

1st year: 75kg (67lb) N as 'Nitro-chalk' 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in the seedbed, 75kg (67lb) N, 48kg (43lb) K_2O as (25:0:16) after each cut except the last.

2nd + years: 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in winter 75kg (67lb) N, 48kg (43lb) K_2O as (25:0:16) in spring, and after each cut except the last.

Clover/grass ley

1st year: 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in the seedbed. 48kg (43lb) K_2O as muriate of potash after each cut except the last.

2nd + years: 75kg (67lb) P_2O_5, 150kg (134lb) K_2O as (0:14:28) in winter. 48kg (43lb) K_2O as muriate of potash in spring, and after each cut except the last.

WOBURN

ARABLE AND LEY ROTATION. 42nd year

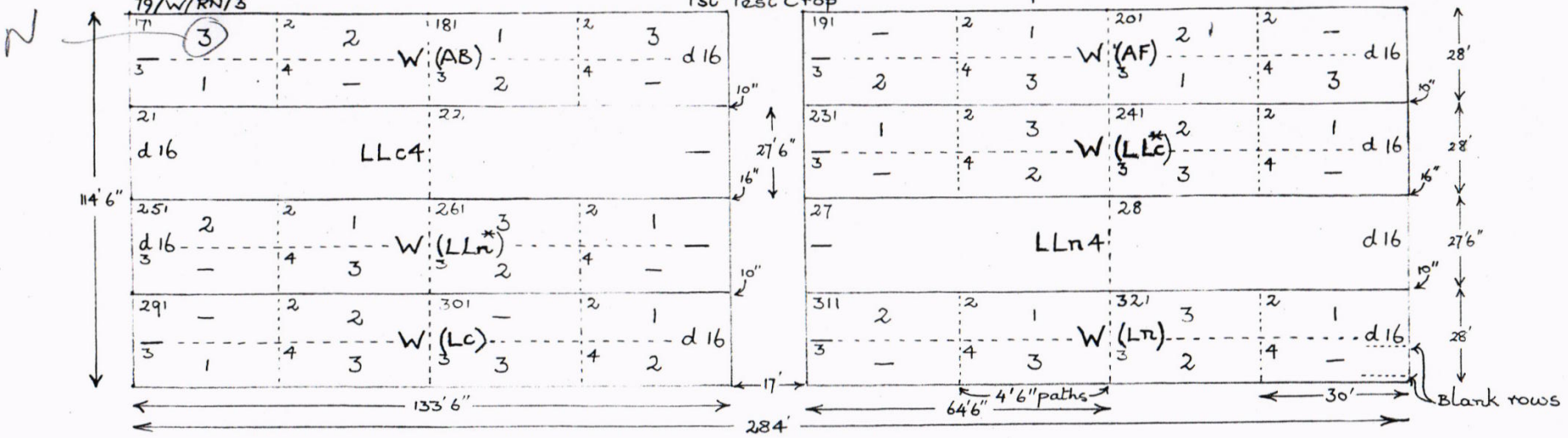
STACKYARD 'D' 1979 201B

Winter Wheat Block 2

1st Test Crop

Sponsors: A.E. Johnston, F.G.W. Jones, G.A. Salt.

79/W/RN/3



TREATMENTS per acre (hectare)

-, d16 None, FYM residues - last applied 1963

Cropping

W Winter wheat Variety: Flanders
Sown at: 160lb (180kg) Date: 9 Nov.

Other crop symbols - see main plan

Nitrogen to Winter Wheat

-, 1, 2, 3 None, 0·5, 1·0, 1·5 cwt N
(63, 126, 189 kg) N

* Previously in the alternating rotation

STANDARD APPLICATION to winter wheat only

Aldicarb at 10 kg/ha (9lb/acre) applied by farm

BASAL MANURING per acre (hectare)

Winter Wheat: 314 kg (280lb) compound fertiliser (0:20:20) CD

Ley with N: 75 kg (67lb) P_2O_5, 150 kg (134lb) K_2O as (0:14:28) in winter.
75 kg (67lb) N, 48 kg (43lb) K_2O as (25:0:16) applied in spring and after each cut except the last.

Ley with clover: 75 kg (67lb) P_2O_5, 150 kg (134lb) K_2O as (0:14:28) in winter.
48 kg (43lb) K_2O as muriate of potash in the spring and after each cut except the last.

PLOT AREA

Winter Wheat: 14' x 30' = 0·0096 acre (0·0039 ha)

Harvested: 9'4" x 30' = 0·0064 acre (0·0026 ha)

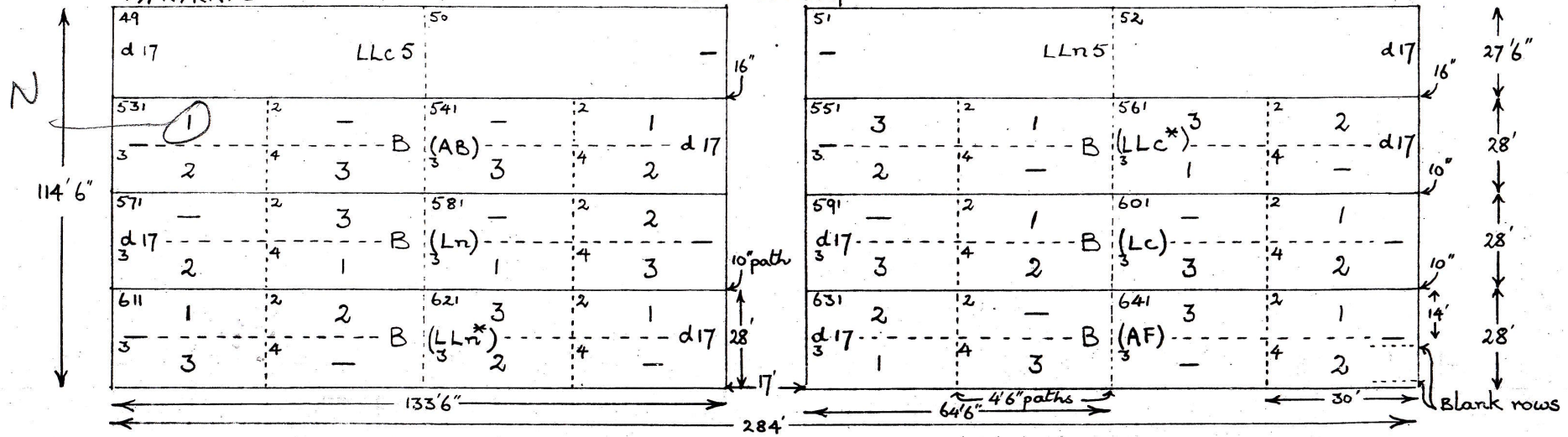
Ley with N and Ley with clover: 27'6" x 64'6" = 0·0407 acre (0·0165 ha)

WOBURN — ARABLE AND LEY ROTATION — 42nd year — STACKYARD 'D' 1979 201C

Barley — Block 4 — 2nd Test Crop

Sponsors: A.E. Johnston, F.G.W. Jones, G.A. Salt

T9/W/RN/3



TREATMENTS per acre (hectare)

–, d 17 — None, FYM residues - last applied 1962

Cropping

B — Barley variety: Porthos (dressed with ethirimol). Sown at: 140lb (157kg). Date: 3 May. Resown 13 Oct 1976

LLn 5 — 8year Grass Ley with N

LLc 5 — 8year Grass/clover Ley, No N

(AB) — 3year treatment cropping: Barley, Barley, Oats

(AF) — 3 year treatment cropping: Fallow, Fallow, Oats

(LLn*) — Ley with N

(LLc*) — Ley with clover

Previous alternating rotations ultimately 8yr leys - treated as 3yr leys (LLn) during phasing in.

(Ln) — 3year grass ley with N.

(Lc) — 3year grass/clover Ley, No N.

Nitrogen to Barley

–, 1, 2, 3 — None, 0·4, 0·8, 1·2 cwt N/acre (None 50, 100, 150 kg/ha) N as 'Nitro-chalk' 26

STANDARD APPLICATION to Barley only

Aldicarb at 10kg/ha (9lb/acre)

BASAL MANURING per acre (hectare)

Barley: 270lb (300kg) compound fertiliser (0:20:20) C.D.

Ley with N: 75kg (67lb) N, 48kg (43lb) K_2O as (25:0:16) applied in the spring and after each cut except the last

Ley with clover: 48kg (43lb) K_2O as muriate of potash in the spring and after each cut except the last.

PLOT AREA

Barley = 14' x 30' = 0·0096 acre (0·0039 ha)

Harvested = 9'4" x 30' = 0·0064 acre (0·0026 ha)

Ley with N and Ley with Clover 27'6" x 64'6" = 0·0407 acre (0·0165 ha)