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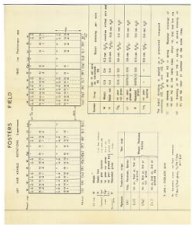
Collection of Plans for the Fosters Ley-arable Experiment



Full Table of Content

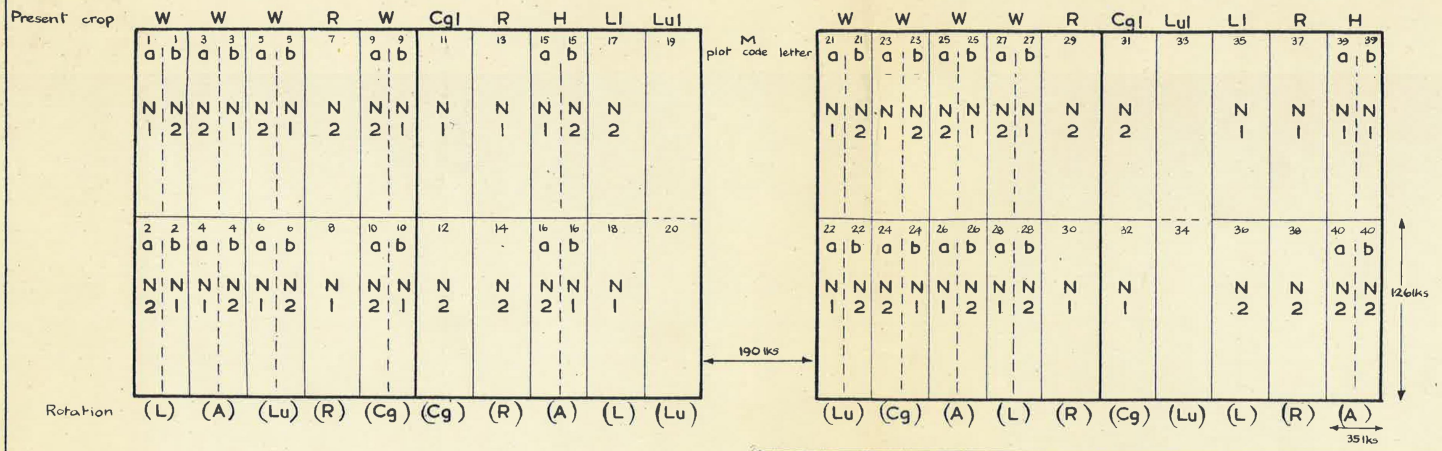
All the Plans

Rothamsted Research

Rothamsted Research (1949-1990) *All the Plans ;* Collection Of Plans For The Fosters Ley-Arable Experiment, pp 1 - 20

FOSTERS FIELD

LEY AND ARABLE ROTATIONS Experiment 1949 1st Preliminary year



Test crop	W	Wheat	
Treatment crops	H	Seeds hay	1 cut then fallowed
	Lul	1st year lucerne	1 or more cuts
	Cgl	1st year cut grass	3 or 4 cuts
	Ll	1st year grazed ley	grazed with sheep
Permanent grass	R	Reseeded grass	

Rotation	Treatment crops	Test crop
(A)	Hay, Potatoes, Barley	Wheat, Potatoes, Barley
(Lu)	1st yr, 2nd yr, 3rd yr lucerne	
(Cg)	1st yr, 2nd yr, 3rd yr cut grass	
(L)	1st yr, 2nd yr, 3rd yr grazed ley	

¼ plot = 0.02205 acre

For harvested areas see Field notebooks
17 rows by 7inch spacing by 124 links
82.17 feet

Symbol	Crop	cwt. N per acre as nitrochalk N1	N2	Basal dressing per acre
W	Wheat	0.3	0.6	0.2 cwt. P_2O_5 combine drilled with seed
H	Seeds hay	0.3	0.6	0.15 cwt. P_2O_5, 0.15 cwt. K_2O
Cg_1	1st year cut grass	0.15 (i)	0.3	0.6 cwt. P_2O_5, 0.6 cwt. K_2O
Ll	1st year grazed ley	0.075 (ii)	0.15	0.6 cwt. P_2O_5, 0.6 cwt. K_2O
R	Reseeded grass	0.075 (ii)	0.15	0.3 cwt. P_2O_5, 0.3 cwt. K_2O
Lu_1	1st year lucerne	—	—	0.6 cwt. P_2O_5, 0.6 cwt. K_2O

The basal dressing is applied as a granulated compound containing 13% P_2O_5 and 13% K_2O.

(i) 1st dressing of N1 and N2 in spring. Repeated dressings of N1 and N2 at the same rates. After 1st, 2nd and 3rd cut.

(ii) 1st dressing of N1 and N2 in spring. A second dressing of N1 and N2 later in summer at the same rates.

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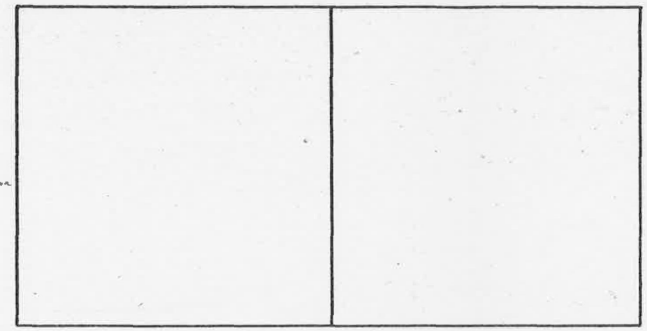
FOSTERS

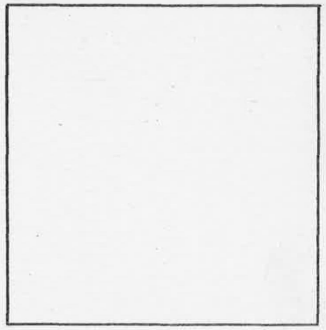
LEY AND ARABLE ROTATIONS EXPERIMENT

1950 2nd year



Block 10

Block 11



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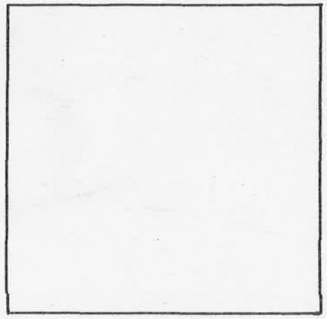

Block 6

P	P	P	R	P	Cg2	R	P	L2	Lu2	
1 a b N N 1 2 D	3 a b N N 2 1 D	5 a b N N 2 1 D	7 N 2	9 a b N N 2 1 D	11 a b N N 1 2	13 N 1	15 a b N N 1 2 D	17 N 2	19	
2 a b N N 2 1 D	4 a b N N 1 2 D	6 a b N N 1 2	8 N 1	10 a b N N 2 1 D	12 a b N N 1 2	14 N 2	16 a b N N 2 1 D	18 N 1	20	
(L)	(A)	(Lu)	(R)	(Cg)	(Cg)	(R)	(A)	(L)	(Lu)	

126 lks

35 lks

Block 1 Block 2

LI	Cgl	Lul	R	H	W	W	W	R	W	Present crop
61 N 2	63 a b N N 2 1	65	67 N 1	69 a b N N 2 2	71 a b N N 2 2	73 a b N N 1 2	75 a b N N 1 2	77 N 2	79 a b N N 1 1	
62 N 1	64 a b N N 1 2	66	68 N 2	70 a b N N 1 1	72 a b N N 1 1	74 a b N N 1 2	76 a b N N 2 1	78 N 1	80 a b N N 2 2	
(L)	(Cg)	(Lu)	(R)	(A)	(Cg)	(L)	(A)	(R)	(Lu)	Rotation

Block 7 Block 8

R	W	W	W	W	Present crop
81 N 2	83 a b N N 1 2	85 a b N N 2 1	87 a b N N 2 2	89 a b N N 1 2	
82 N 1	84 a b N N 1 2	86 a b N N 1 2	88 a b N N 1 1	90 a b N N 2 1	
(R)	(Cg)	(L)	(A)	(Lu)	Rotation

Block 9

P	P	P	P	R	Cg2	Lu2	L2	R	P	Present crop
21 a b N N 1 2 D	23 a b N N 1 2 D	25 a b N N 2 1 D	27 a b N N 2 1 D	29 N 2	31 a b N N 1 2	33	35 N 1	37 N 1	39 a b N N 1 1 D	
22 a b N N 2 1 D	24	26 a b N N 1 2 D	28 a b N N 1 2 D	30 N 1	32 a b N N 2 1	34	36 N 2	38 N 2	40 a b N N 2 2 D	
(Lu)	(Cg)	(A)	(L)	(R)	(Cg)	(Lu)	(L)	(R)	(A)	Rotation

Block 3 Block 4

Lul	LI	Cgl	R	H	Present crop
41	43 N 2	45 a b N N 1 2	47 N 2	49 a b N N 2 1	
42	44 N 1	46 a b N N 2 1	48 N 1	50 a b N N 1 2	
(Lu)	(L)	(Cg)	(R)	(A)	Rotation

Block 5

Farm Road

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FOSTERS

LEY AND ARABLE ROTATIONS EXPERIMENT

1951 3rd year

N

Code letter M

n,d on treatment crops
N,D on test crops (W,P,B)
(d) (D) residuals of 1950 dung treatments

Block 10

W	W	W	W	IR	IL	H	ICg	ILu	IR
91 a b N N 2 2	93 a b N N 2 1	95 a b N N 1 2	97 a b N N 2 2	99 N 1	101 n 2	103 a b n n 1 2	105 a b n n 2 1	107	109 N 2
92 a b N N 1 1	94 a b N N 2 1	96 a b N N 2 1	98 a b N N 1 1	100 N 2	102 n 1	104 a b n n 1 2	106 a b n n 2 1	108	110 N 1
(Cg)	(Lu)	(L)	(A)	(R)	(L)	(A)	(Cg)	(Lu)	(R)

Block 11

W	W	IR	W	W	Present crop
111 a b N N 2 1	113 a b N N 1 1	115 N 1	117 a b N N 1 2	119 a b N N 2 1	
112 a b N N 1 2	114 a b N N 2 2	116 N 2	118 a b N N 1 2	120 a b N N 2 1	
(L)	(Lu)	(R)	(A)	(Cg)	Rotation

Block 12

ILu	IR	IL	ICg	H	2L	2Cg	2Lu	2R	P	P	P	P	2R	P	2R	P	P	P	P	Present crop
51	53 N 1	55 n 1	57 a b n n 2 1	59 a b n n 1 1	61 n 2	63 a b n n 2 1	65	67 N 1	69 a b n n 2 2 d	71 a b N N 2 2 D	73 a b N N 1 2 D	75 a b N N 1 2	77 N 2	79 a b N N 1 1 D	81 N 2	83 a b N N 1 2 D	85 a b N N 2 1 D	87 a b N N 2 2 D	89 a b N N 1 2 D	
52	54 N 2	56 n 2	58 a b n n 1 2	60 a b n n 2 2	62 n 1	64 a b n n 1 2	66	68 N 2	70 a b n n 1 1 d	72 a b N N 1 1 D	74 a b N N 1 2 D	76 a b N N 2 1 D	78 N 1	80 a b N N 2 2 D	82 N 1	84 a b N N 1 2 D	86 a b N N 2 1 D	88 a b N N 1 1 D	90 a b N N 2 1 D	
(Lu)	(R)	(L)	(Cg)	(A)	(L)	(Cg)	(Lu)	(R)	(A)	(Cg)	(L)	(A)	(R)	(Lu)	(R)	(Cg)	(L)	(A)	(Lu)	Rotation

Block 6

Block 7

Block 8

Block 9

B	B	B	3R	B	3Cg	3R	B	3L	3Lu	Present crop
1 a b N N 1 2 (D)	3 a b N N 2 1 (D)	5 a b N N 2 1 (D) (D)	7 N 2	9 a b N N 2 1 (D)	11 a b n n 1 2	13 N 1	15 a b n n 1 2 (d)	17 n 2	19	
2 a b N N 2 1 (D)	4 a b N N 1 2 (D)	6 a b N N 1 2	8 N 1	10 a b N N 2 1 (D)	12 a b n n 1 2	14 N 2	16 a b n n 2 1 (d)	18 n 1	20	
(L)	(A)	(Lu)	(R)	(Cg)	(Cg)	(R)	(A)	(L)	(Lu)	Rotation

Block 1

Block 2

B	B	B	B	3R	3Cg	3Lu	3L	3R	B	2Lu	2L	2Cg	2R	P	Present crop
21 a b N N 1 2 (D)	23 a b N N 1 2 (D)	25 a b N N 2 1 (D)	27 a b N N 2 1 (D)	29 N 2	31 a b n n 1 2	33	35 n 1	37 N 1	39 a b n n 1 1 (d)	41	43 n 2	45 a b n n 1 2	47 N 2	49 a b n n 2 1 d	
22 a b N N 2 1 (D)	24 a b N N 1 2 (D)	26 a b N N 1 2	28 a b N N 1 2 (D)	30 N 1	32 a b n n 2 1	34	36 n 2	38 N 2	40 a b n n 2 2 (d)	42	44 n 1	46 a b n n 2 1	48 N 1	50 a b n n 1 2 d	
(Lu)	(Cg)	(A)	(L)	(R)	(Cg)	(Lu)	(L)	(R)	(A)	(Lu)	(L)	(Cg)	(R)	(A)	Rotation

Block 3

Block 4

Block 5

3 lks cross path

35 lks

arm Road

16 MAR 1951

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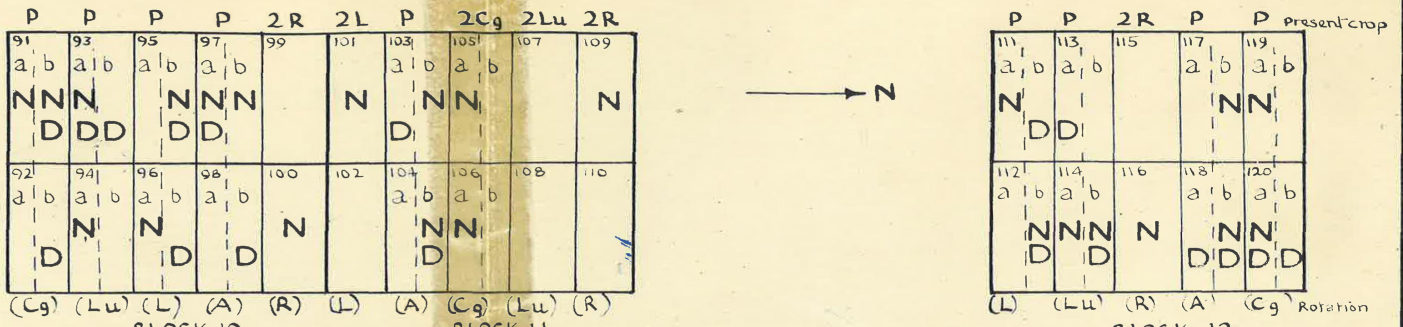
FOSTERS
LEY AND ARABLE ROTATIONS EXPERIMENT

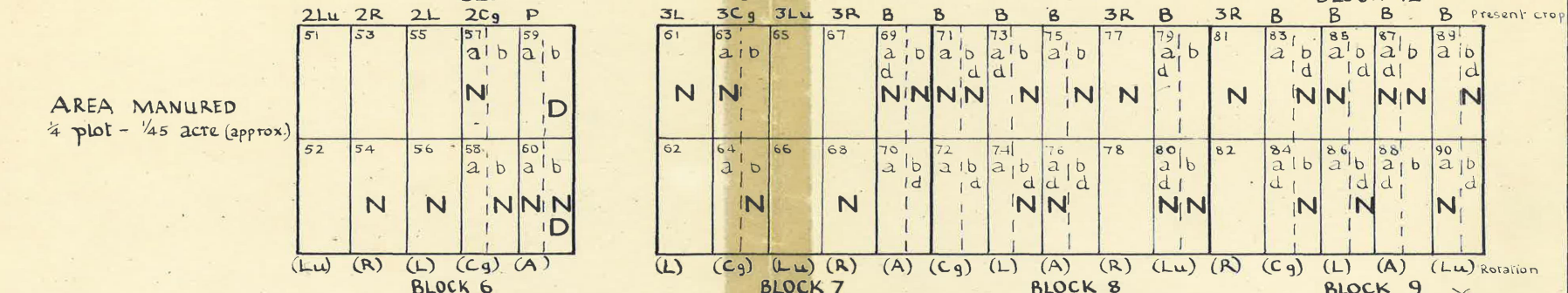
1952 4th year

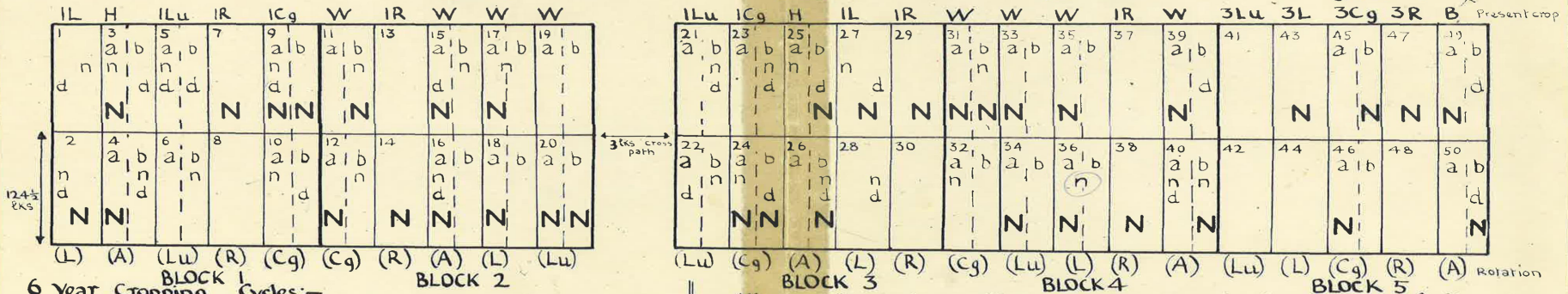
5 FEB 1952

code letter M.



AREA MANURED
¼ plot – 1/45 acre (approx.)





6 Year Cropping Cycles:–

Treatment crops

Lu = 3 years Lucerne
L = 3 years Grazed Ley
Cg = 3 years Cut Grass
A = Hay, Potatoes, Barley
R = Reseeded Permanent Grass 2 years grazed 3rd year Hay.

} Test crops: Wheat, Potatoes, Barley.

All crops (except Lucerne) have nitrogen at single (no symbol) & at double (N) rates

N { Cg:– 2 cwt N/c in spring, 2 cwt N/c after each cut.
L:– 1 cwt N/c in .. 1 cwt N/c later in season
Wheat (W) 4 cwt N/c, Barley (B) 2·7 cwt N/c, Hay (H) 4 cwt N/c.
Potatoes (P) 5 cwt. sulphate of ammonia

D = Dung at 12 tons per acre to potato crops only
n = N given in previous 3 year crop sequence
d = D to previous potato crop

Basal P K. All rotations and permanent grass :– 13 cwt/a superphosphate 4 cwt/a muriate of potash spread over 6 years (Equivalent to 2·4 cwt P_2O_5 & 2·4 cwt K_2O)
Calcium carbonate applied once in 6 years before test crop barley.

dp 5

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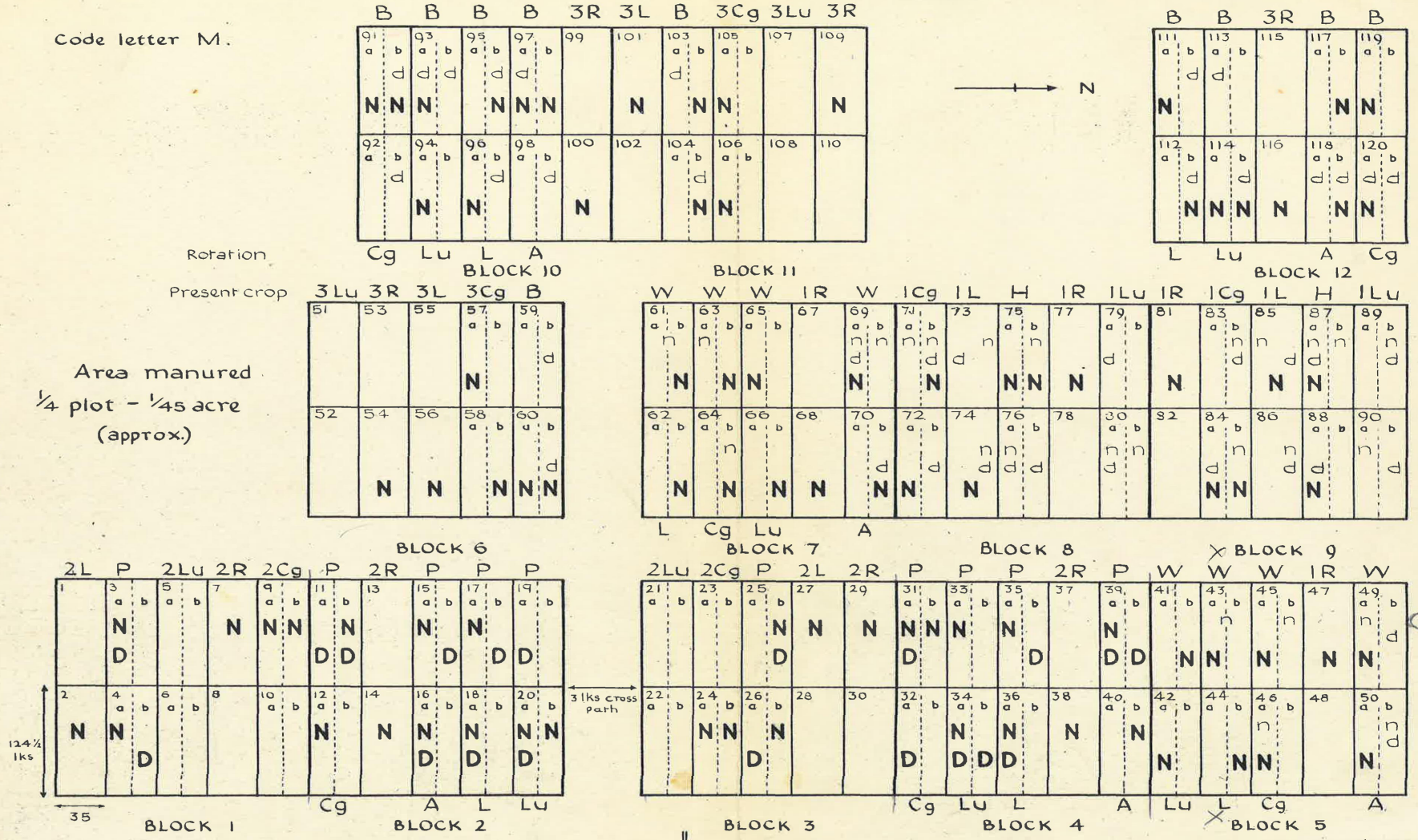
20 NOV 1952

LEY AND ARABLE ROTATIONS EXPERIMENT — FOSTERS — 1953 5th year



6 Year cropping cycles :-

Treatment crops

Lu = 3 years Lucerne
L = 3 years Grazed Ley
Cg = 3 years Cut Grass
A = Hay, Potatoes, Barley
R = Reseeded Permanent Grass 2 years grazed 3rd year hay.

Test crops: Wheat, Potatoes, Barley.

All crops (except Lucerne) have nitrogen at Single (no symbol) & at double (N) rates

N { Cg :- 2 cwt. N/c in spring. 2 cwt. N/c after each cut.
L :- 1 cwt. N/c in spring, 1 cwt. N/c later in season.
Wheat (W) 4 cwt. N/c, Barley (B) 2·7 cwt. N/c, Hay (H) 4 cwt N/c.
Potatoes (P) 5 cwt. sulphate of ammonia.

D = Dung at 12 tons per acre to potato crops only.
n = High nitrogen given in previous 3 year crop sequence.
d = Dung to previous potato crop.

Basal PK. All rotations and permanent grass :- 13 c.p.a. Super. 4 c.p.a Mur/potash spread over 6 years.

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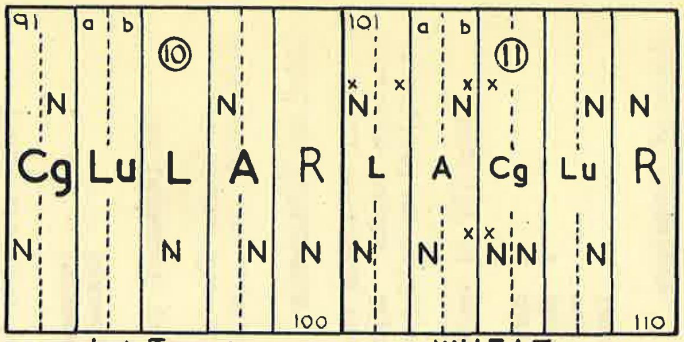
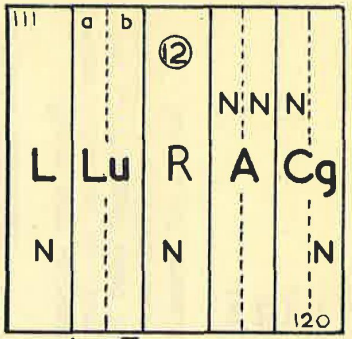
Rothamsted LEY-ARABLE Rotations FOSTERS 6th. year 1954

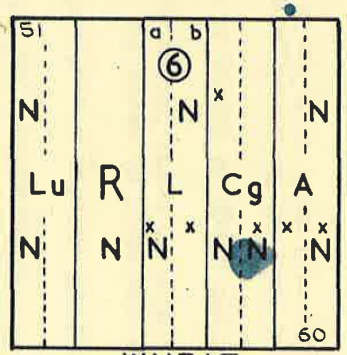
N

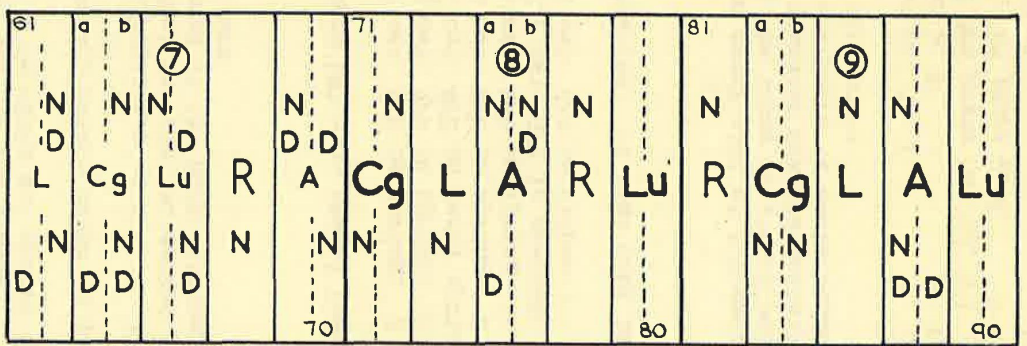
Code letter M

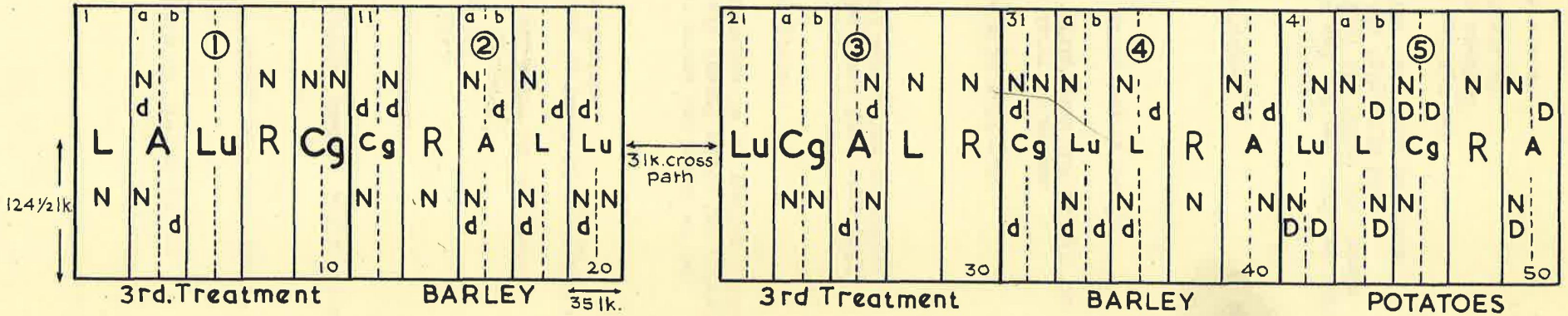




Area manured
¼ plot - 1/45 acre
(approx.)







Treatments overleaf

21 AUG 1955

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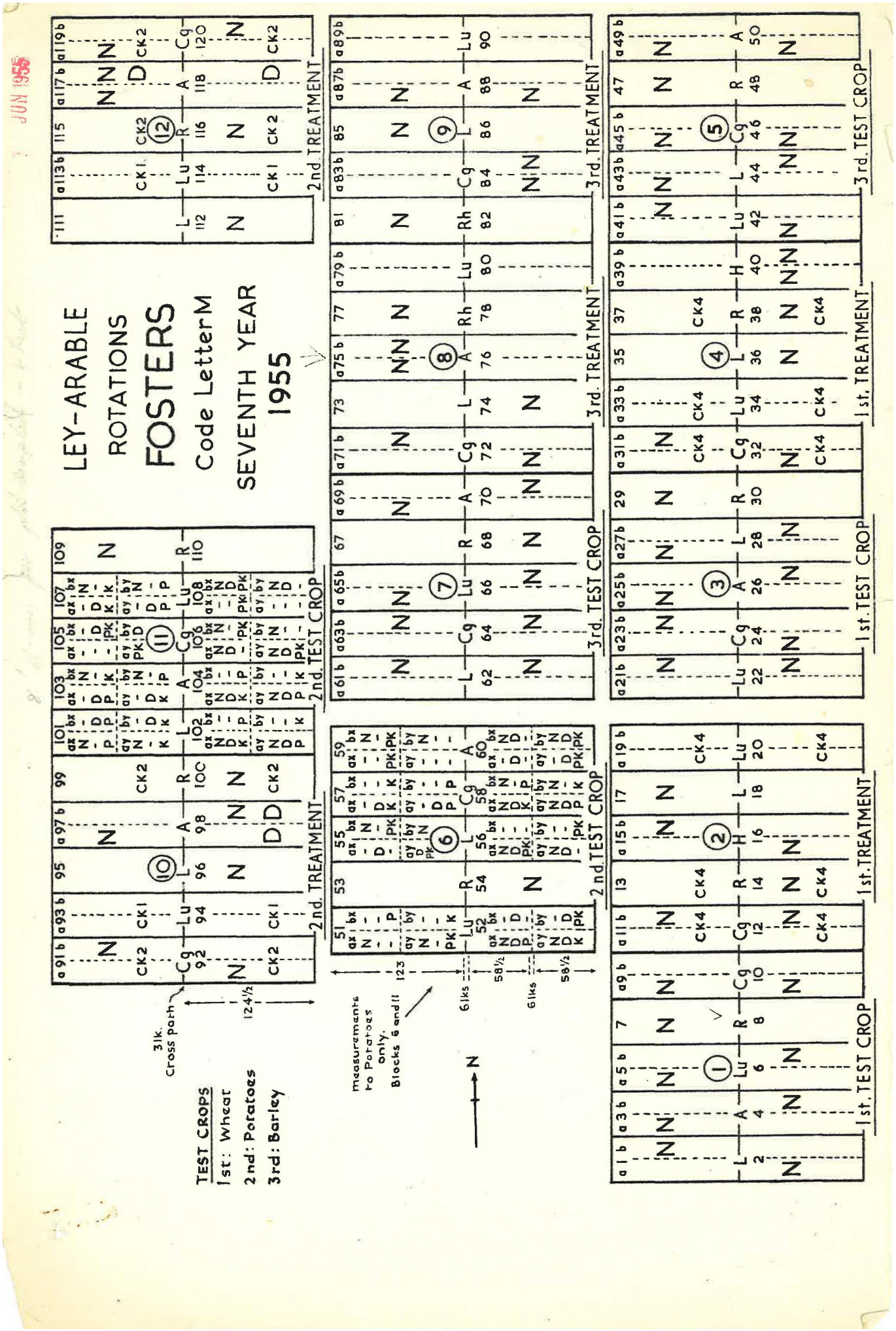

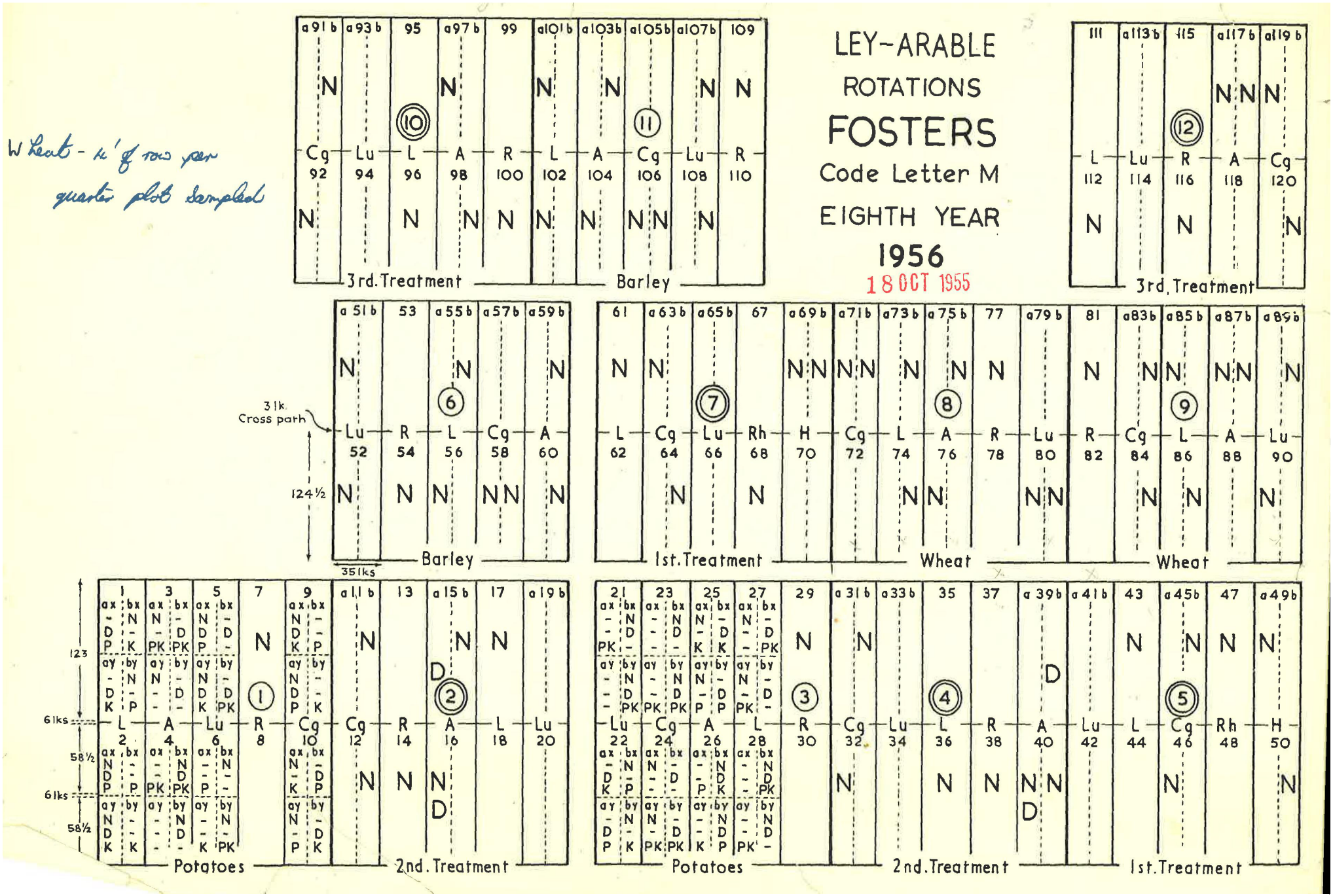

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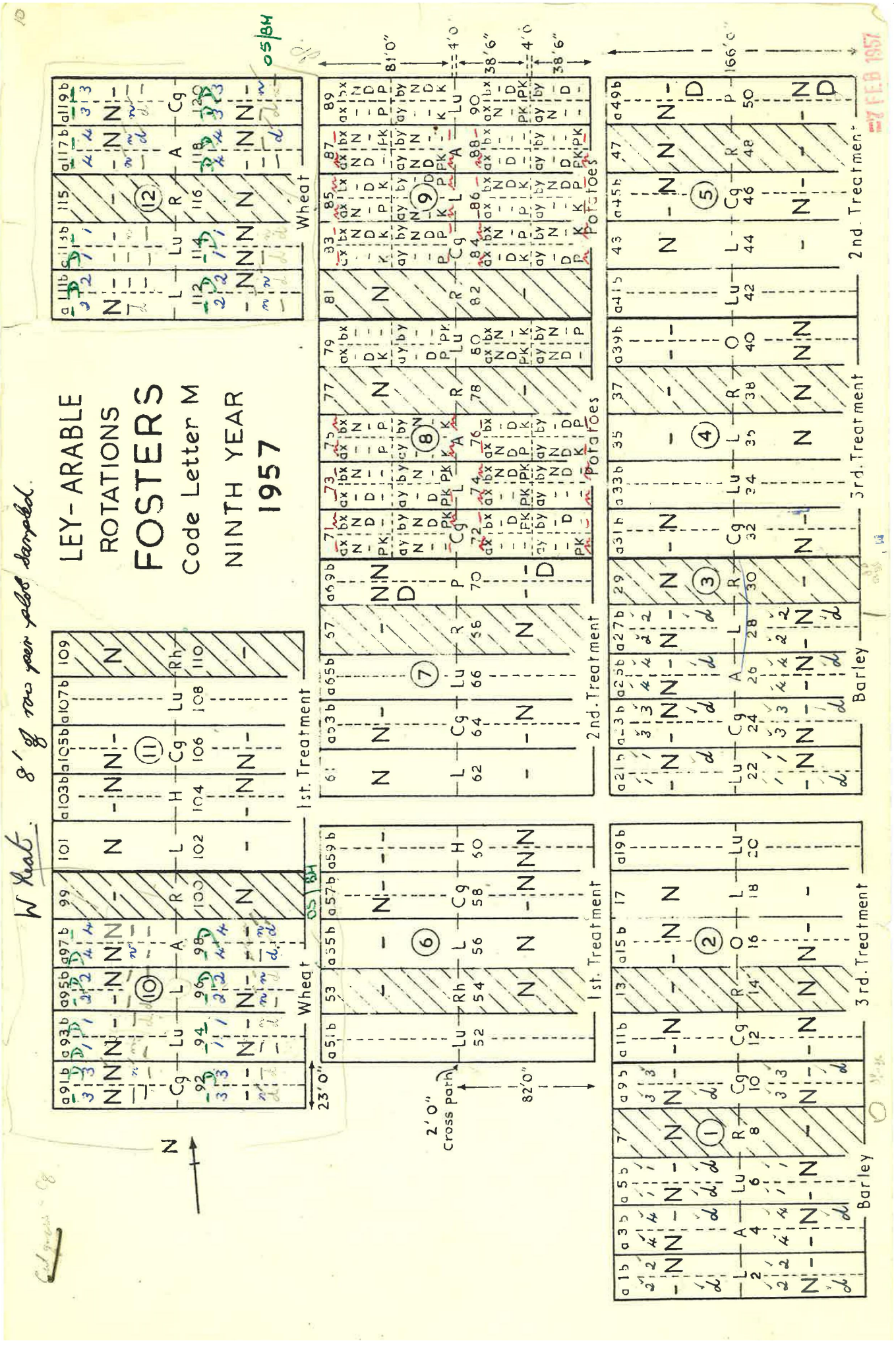

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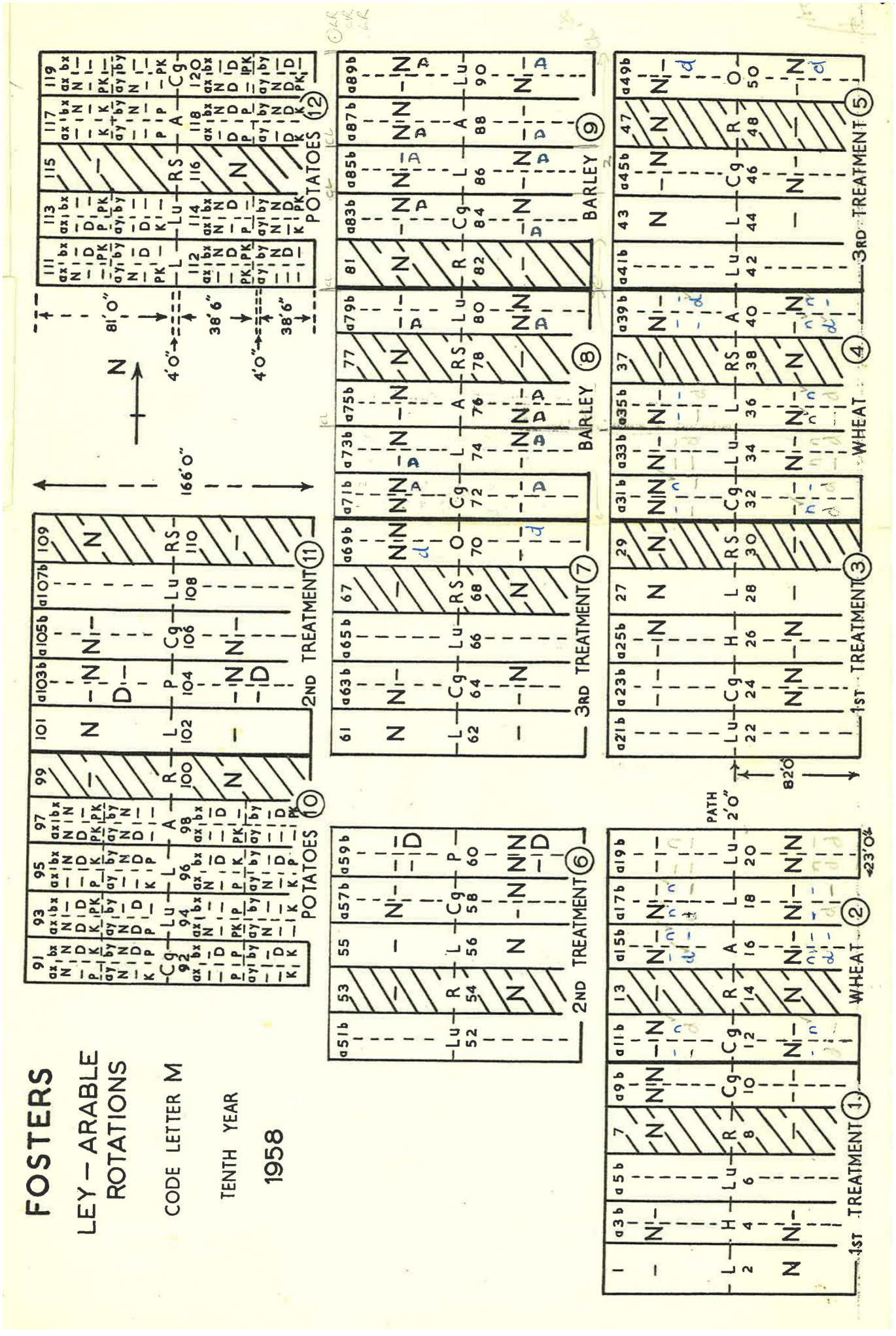

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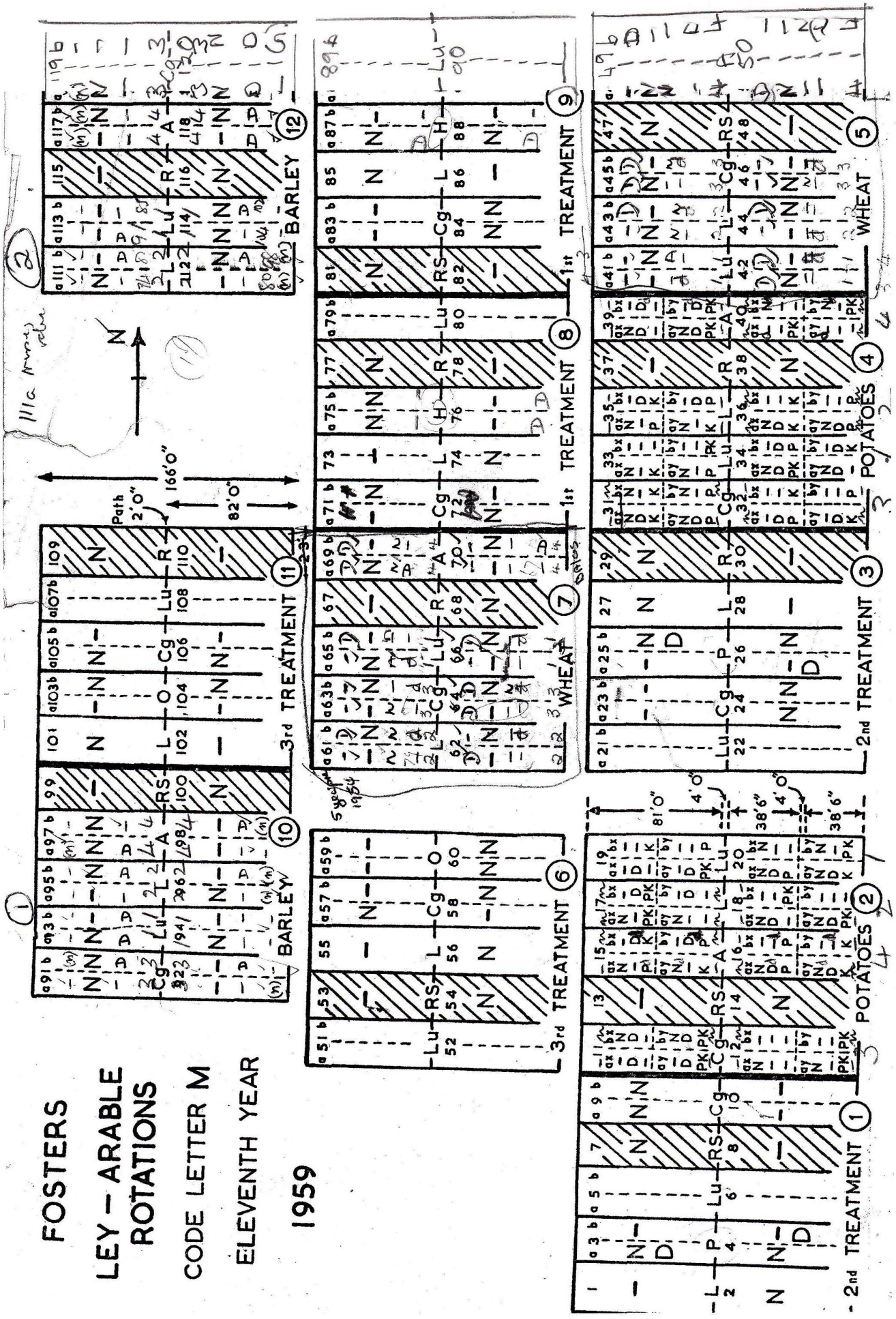

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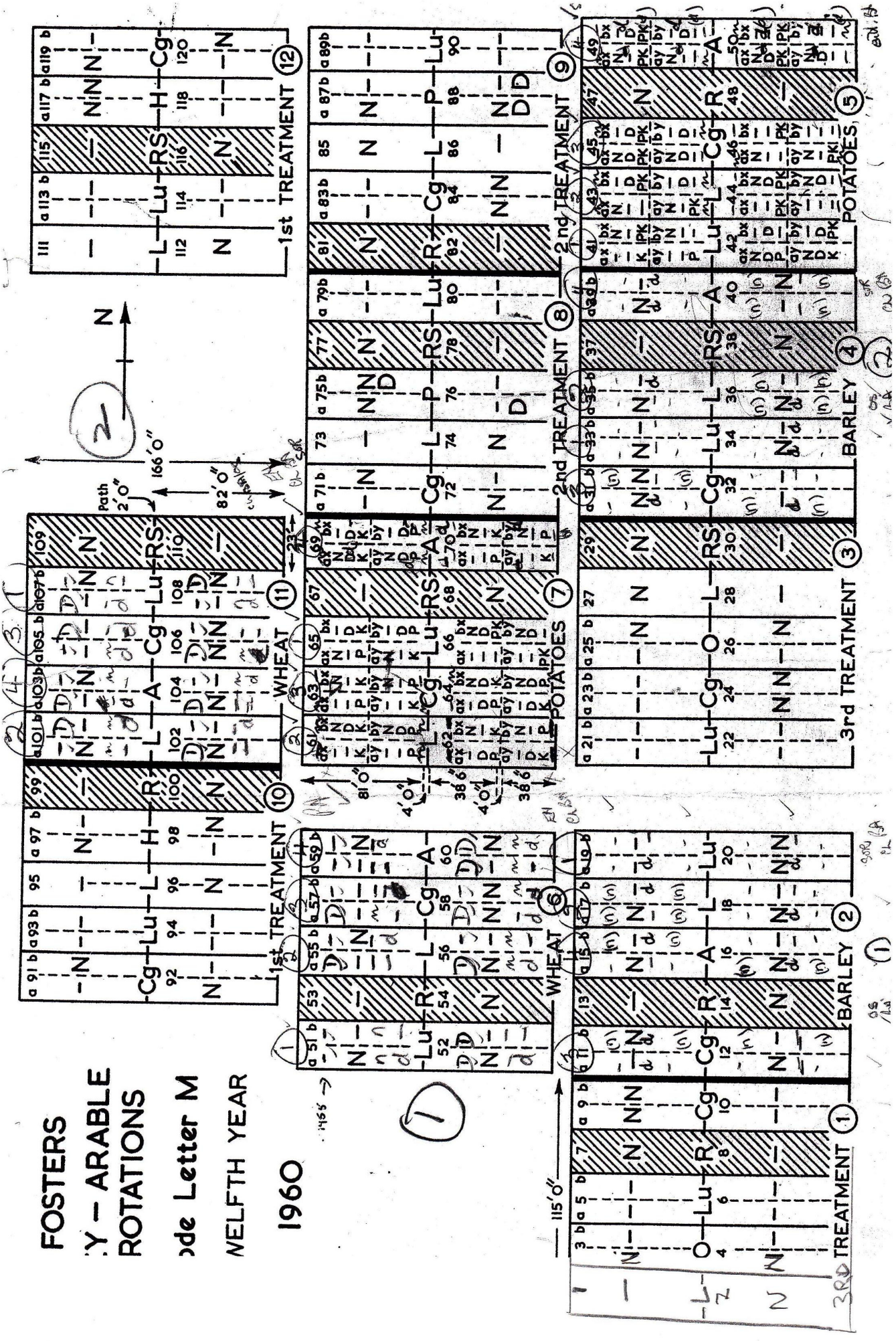

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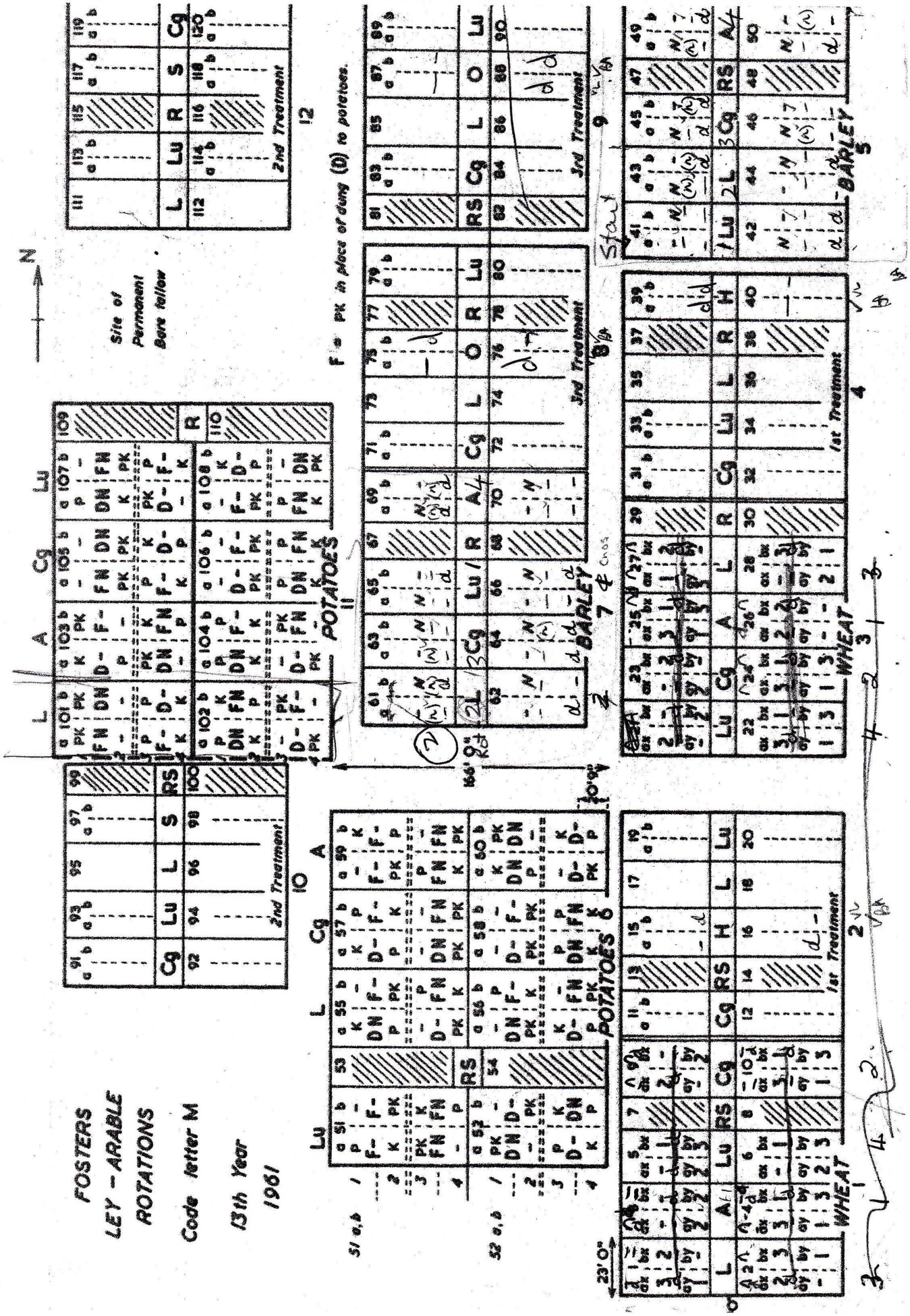


ROTHAMSTED LEY– ARABLE ROTATIONS

Code letter: FLA

14th YEAR 1962

FOSTERS

SYMBOLS:

LEYS

Cg Cut grass } 2nd & 3rd year
L Grazed }
Lc Clover grass without N } 1st year
Ln Straight grass with N }
Lu Lucerne for hay

All Leys mown except 'L'

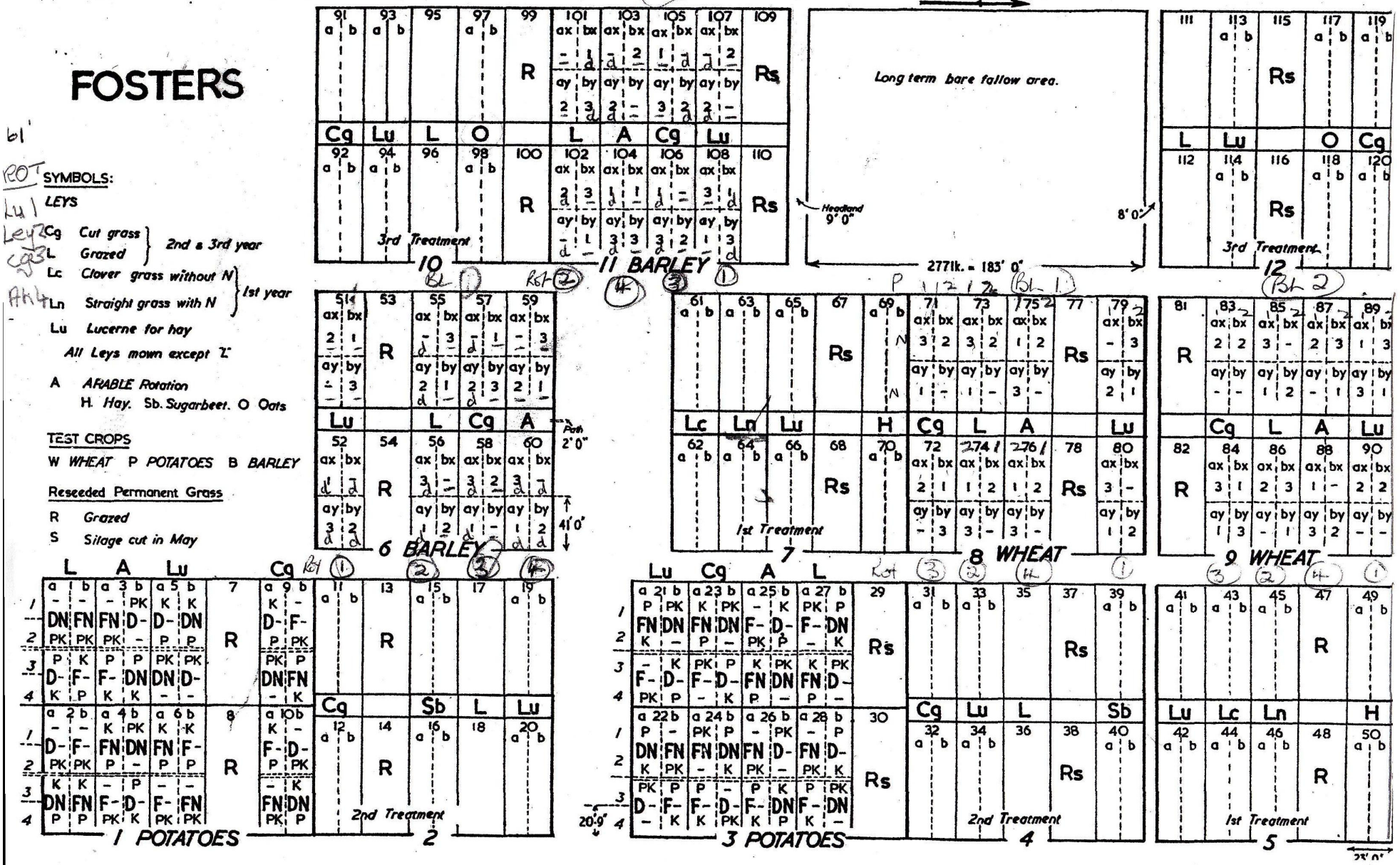
A ARABLE Rotation
H. Hay. Sb. Sugarbeet. O Oats

TEST CROPS

W WHEAT P POTATOES B BARLEY

Reseeded Permanent Grass

R Grazed
S Silage cut in May



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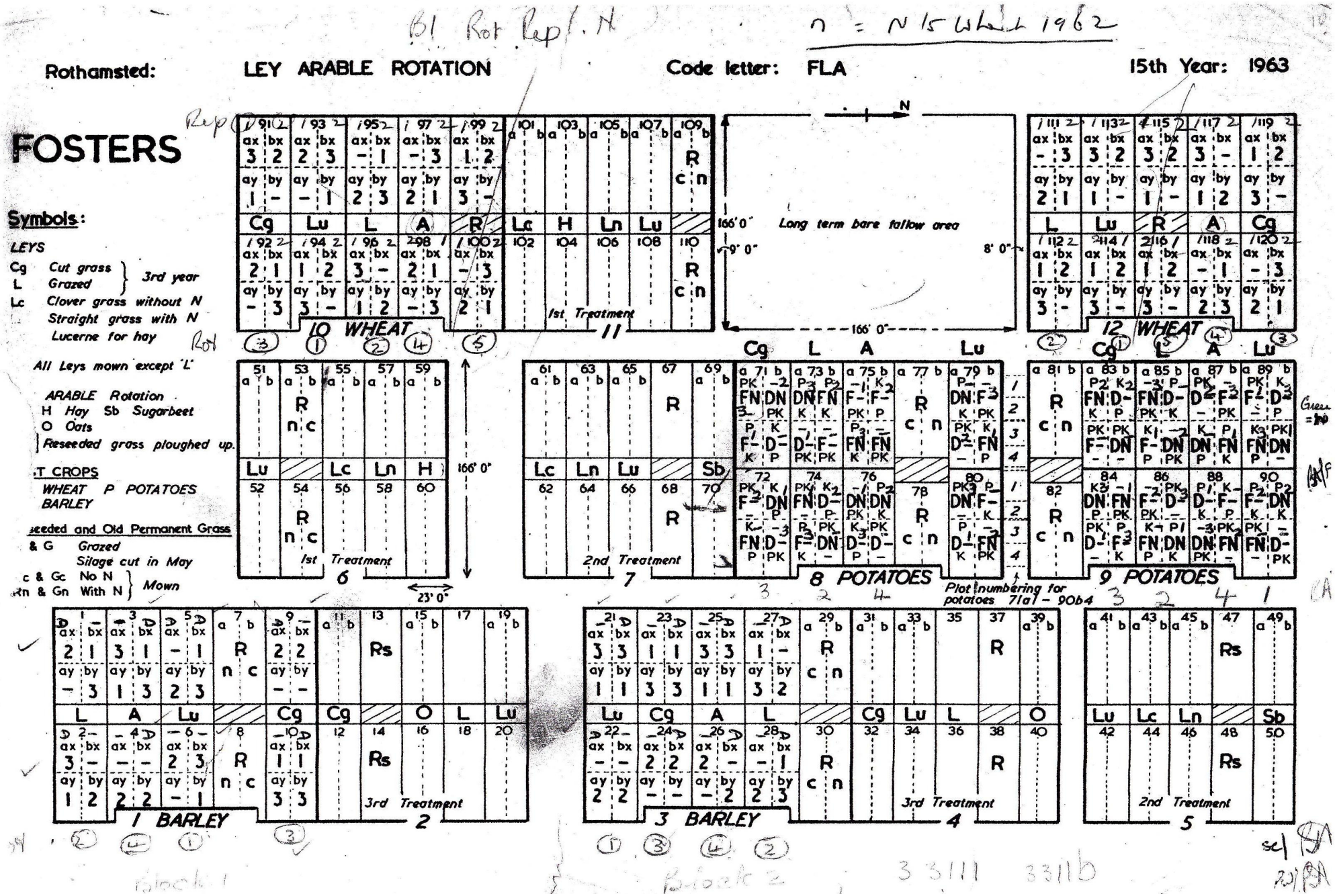

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Rothamsted LEY - ARABLE ROTATION

Code letter FLA

16th. Year 1964.

FOSTERS

SYMBOLS.

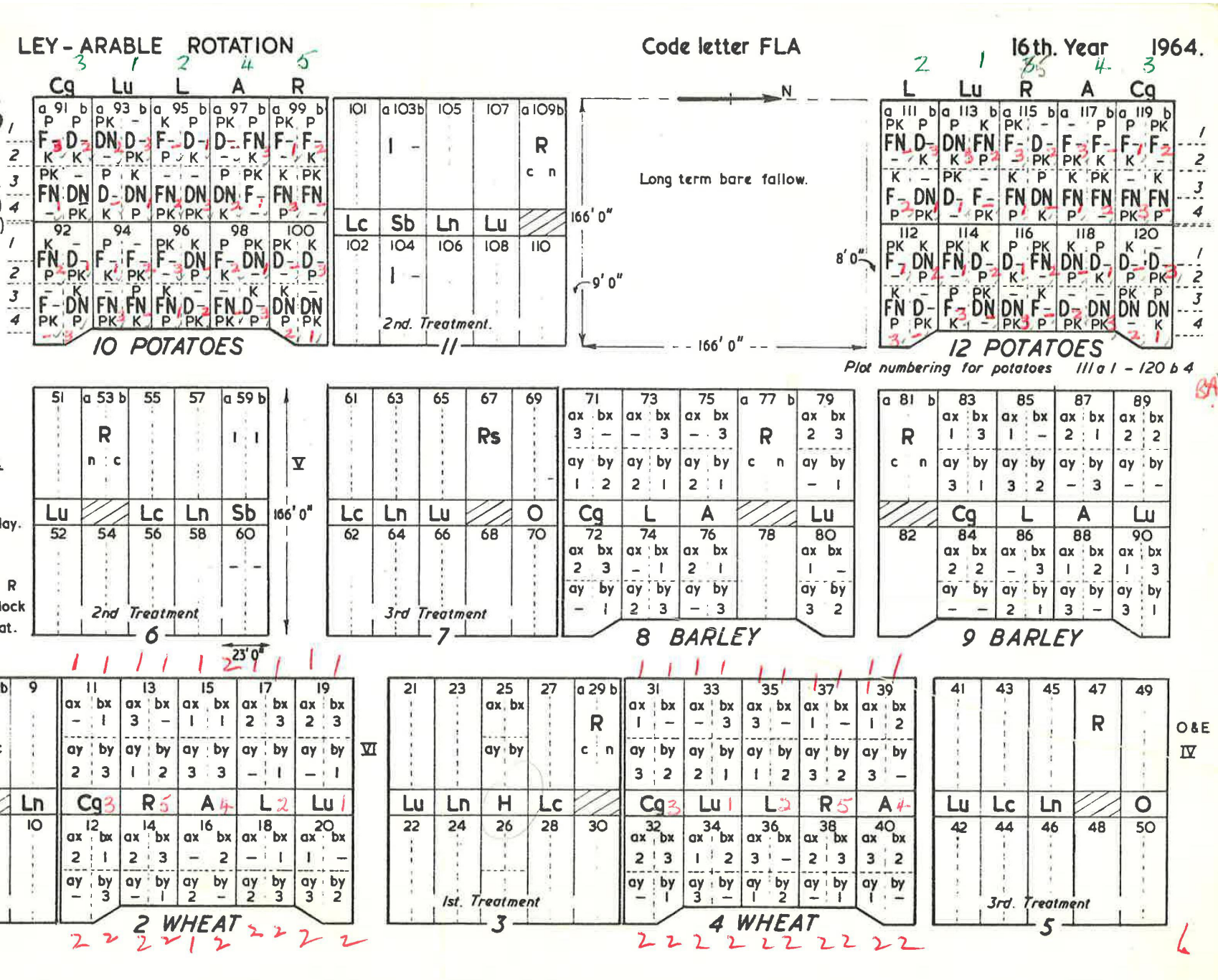
Rotations. All 3yr. leys cut.
Lc Grass/clover - No N. (L)
Ln Grass-with N. (Cg)
Lu Lucerne.
A Arable: H Hay.
Sb Sugarbeet.
O Oats.
L Previously Grazed ley.
Cg Previously Cut grass.

TEST CROPS.

P Potatoes.
W W. Wheat.
B Barley.

Reseeded & Old Permanent Grass.

R & G Grazed.
s Cut for silage in May.
Rc, Gc Without N } Cut
Rn, Gn With N }
Note: From Autumn 1964 R is ploughed up as each block comes into Test Crop Wheat.



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Rothamsted LEY-ARABLE 17th Year F.L.A FOSTERS 1965

SYMBOLS

TREATMENT CROPS

3 year Leys 1962 – cut.

- c Grass/clover - No N.
- n Grass with N.
- Lu Lucerne

3 year Leys 1949 – 64

- L Grazed ley
- Cg Cut grass

3 years Arable "A"

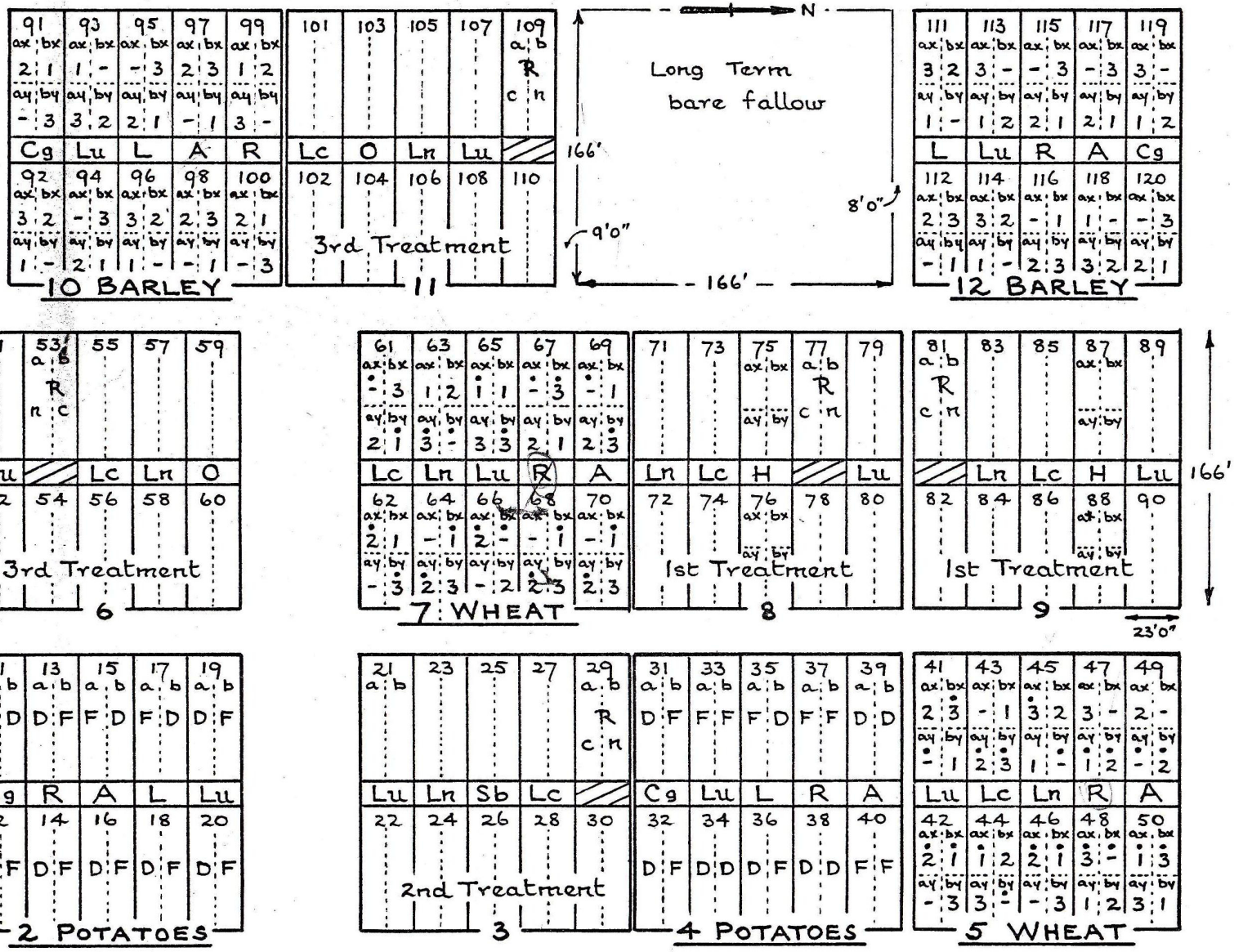
- H Hay Sb Sugarbeet
- O oats
- R Long-term Reseeded grass

TEST CROPS

- W WHEAT
- P POTATOES
- B BARLEY

Old Permanent Grass & Reseeded Grass

Gc, Rc Without N } cut
Gn, Rn With N }



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Rothamsted LEY-ARABLE 18th Year FLA FOSTERS 1966

SYMBOLS

TREATMENT CROPS

3 year Leys 1962 – cut.

Lc Grass/clover – No N.
Ln Grass with N.
Lu Lucerne

3 year Leys 1949 – 64

L Grazed ley
Cg Cut grass

3 years Arable "A"

H Hay Sb Sugar beet
O Oats

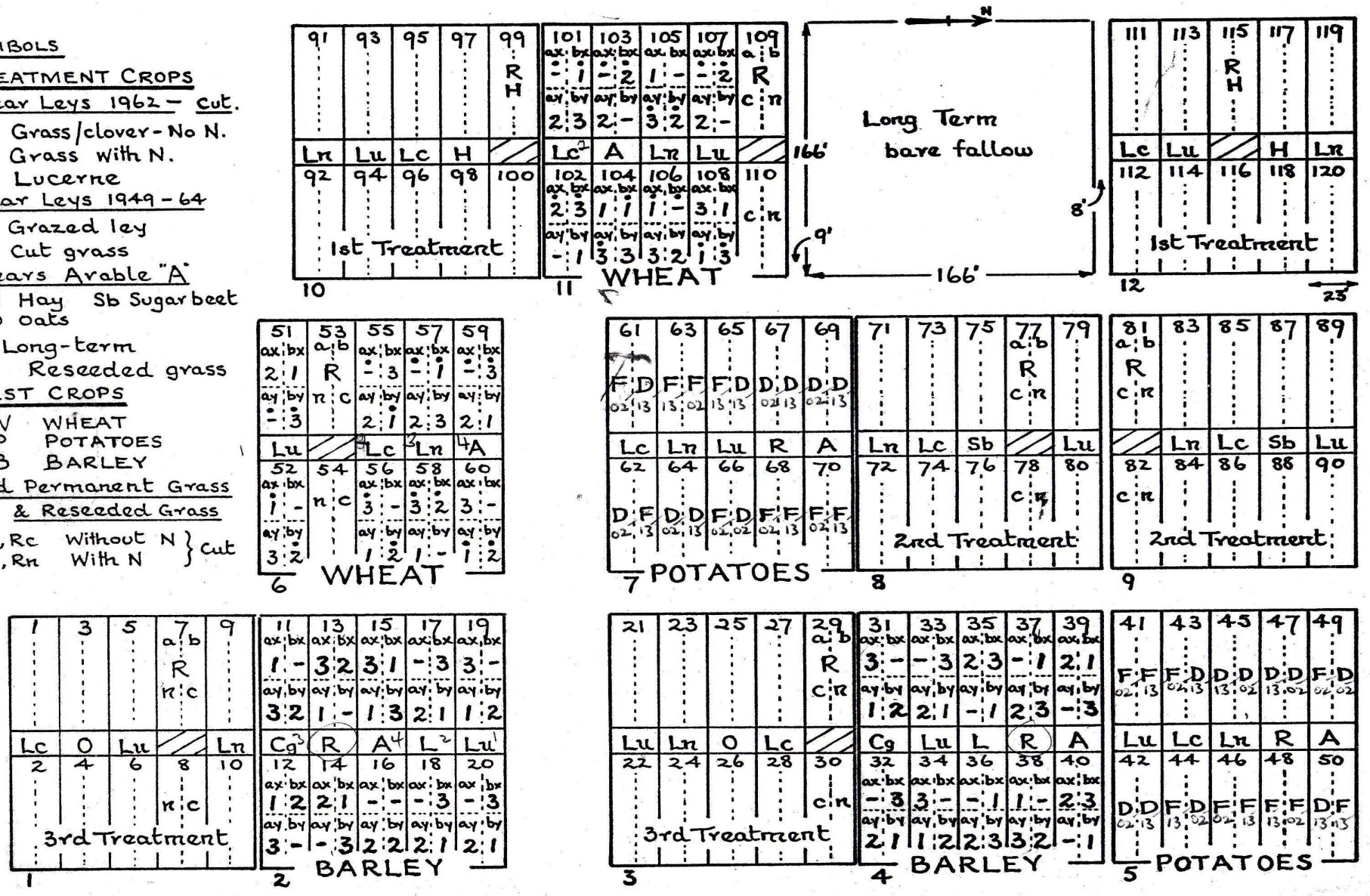
R Long-term Reseeded grass

TEST CROPS

W WHEAT
P POTATOES
B BARLEY

Old Permanent Grass & Reseeded Grass

Gc, Rc Without N } cut
Gn, Rn With N }



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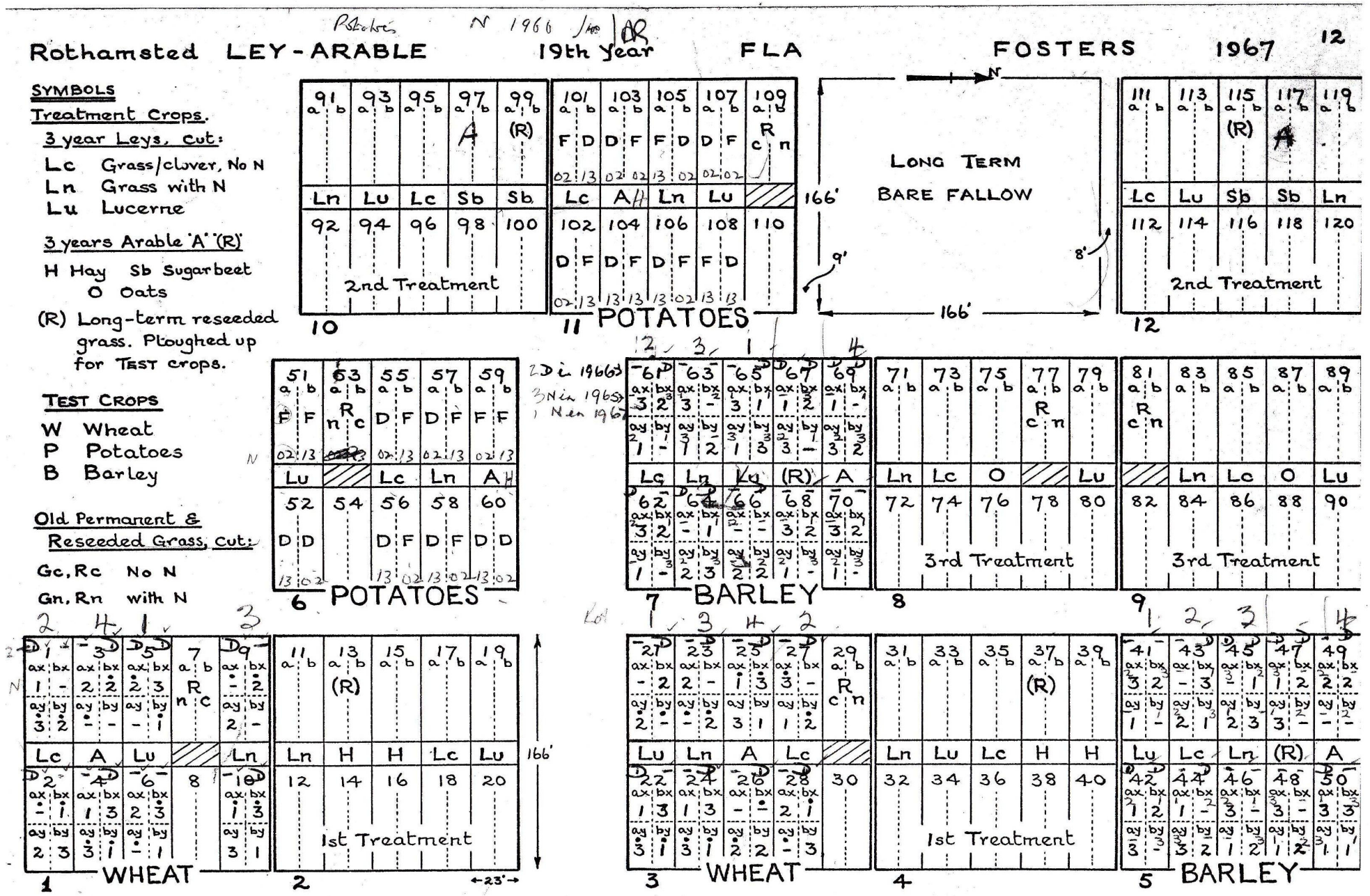
Rothamsted LEY-ARABLE — 19th year — FLA — FOSTERS — 1967 — 12



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Rothamsted LEY-ARABLE 20th. Year FLA FOSTERS 1968 12

SYMBOLS

Treatment Crops

3 year Leys, cut:

Lc Grass/clover, No N.
Ln Grass with N
Lu Lucerne.

3 years Arable 'A' '(R)' '(G)'

H Hay Sb Sugarbeet
O Oats
(G), (R) Permanent & Long-term reseeded grass ploughed up for TEST crops.

TEST CROPS

Sequence 1949 - 1969

(W) P B W*
(W* 1968 only)

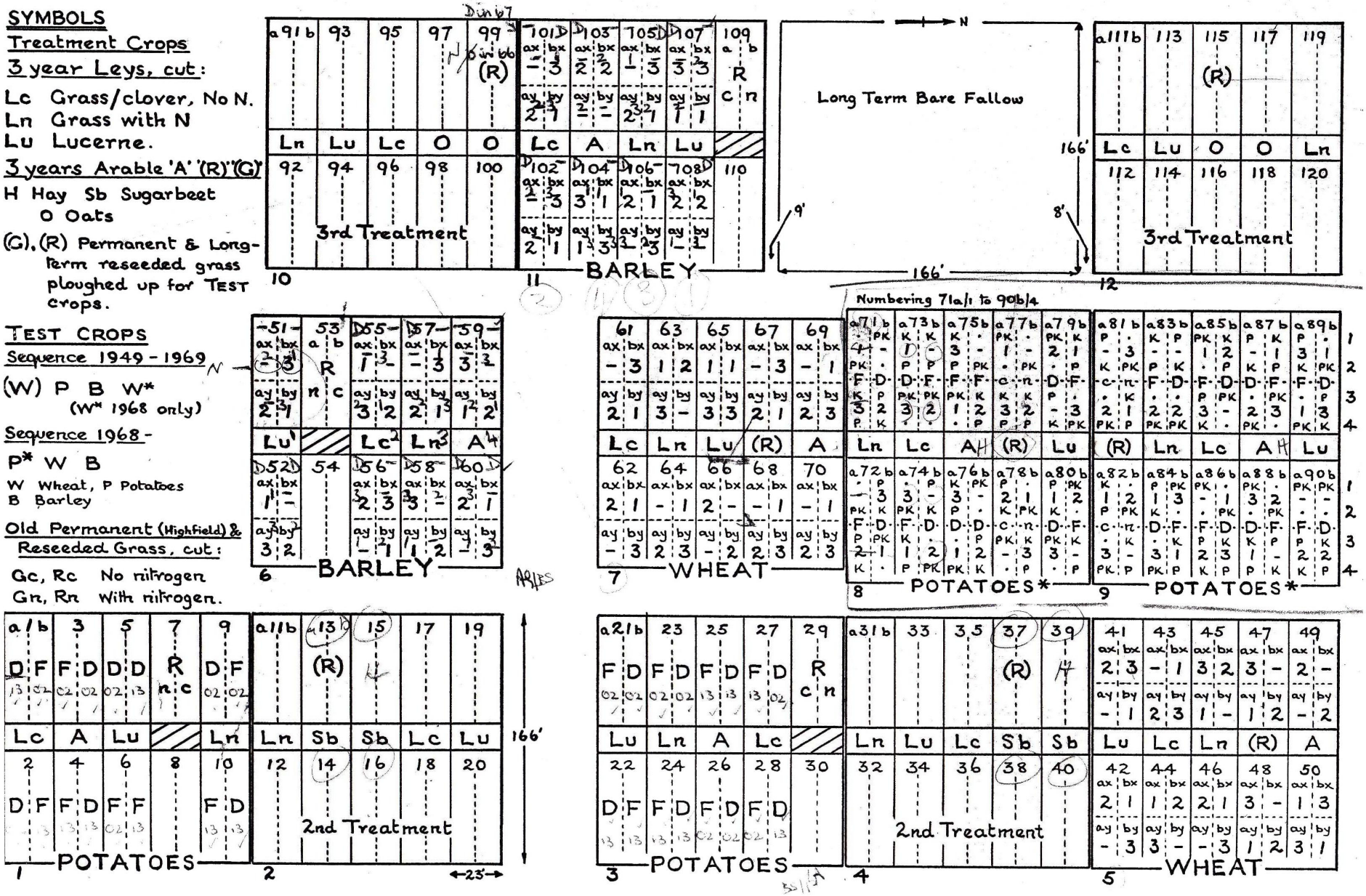
Sequence 1968 -

P* W B

W Wheat, P Potatoes
B Barley

Old Permanent (Highfield) & Reseeded Grass, cut:

Gc, Rc No nitrogen
Gn, Rn With nitrogen.



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