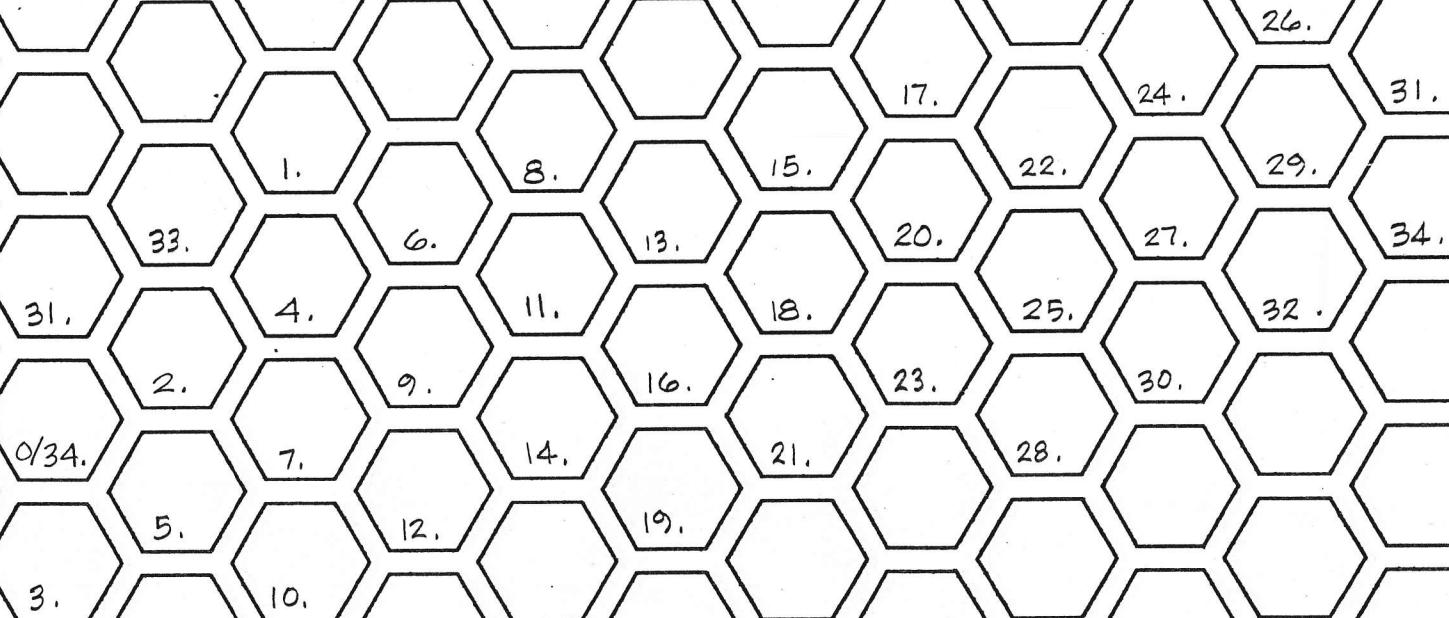
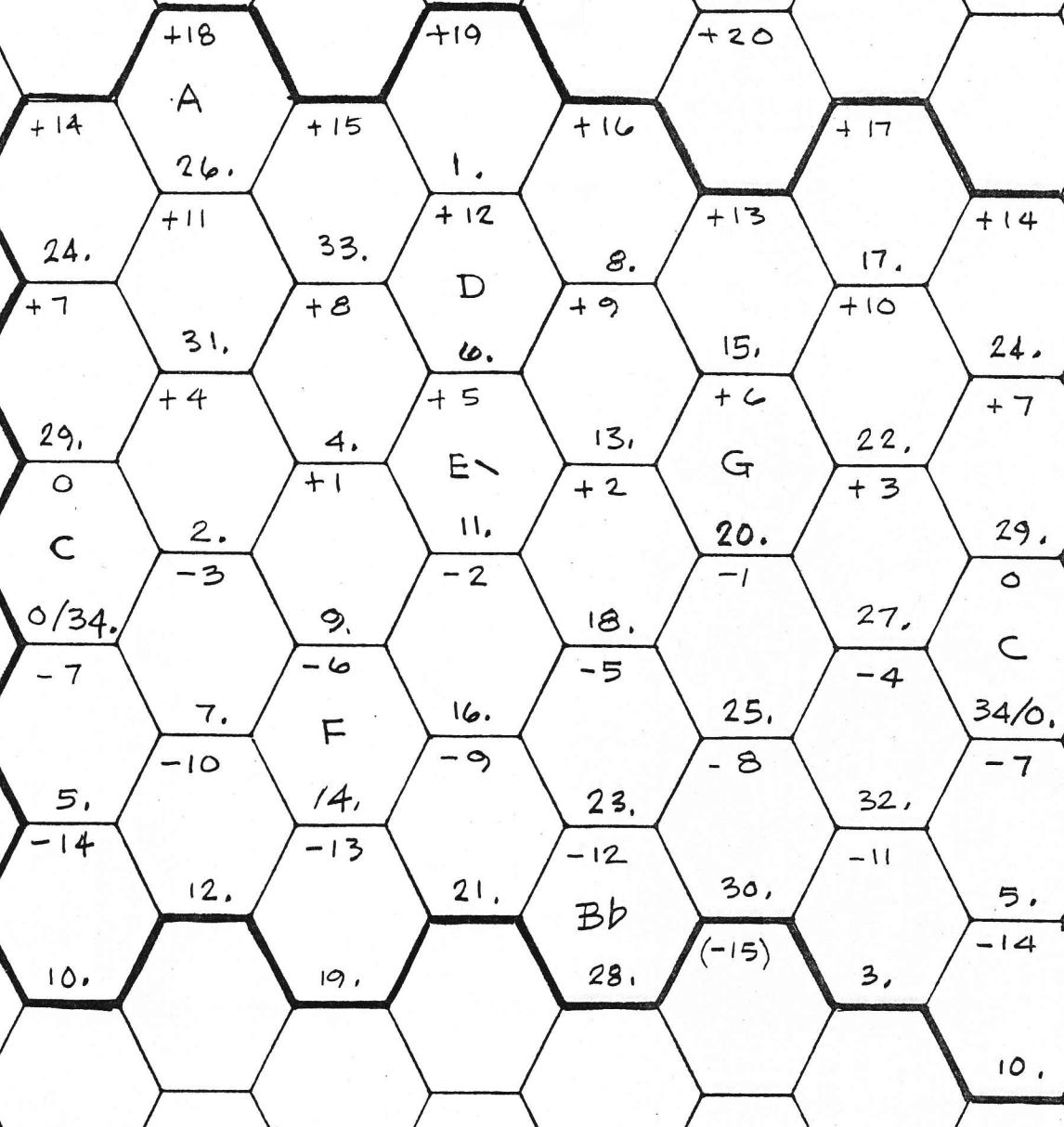


34-Tone Percussion Instrument

11-rank Hanson Keyboard Geometry
used by permission
by Erv Wilson 1993



2/7 KBD,
9/34 Scale
© 1988 by Eric Wilson



7-rank variation of Hanson Keyboard Geometry
used by permission

0 1 2 3 + 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34

C D \flat C \sharp D E \flat D \sharp E F G \flat F \sharp G A \flat G \sharp A B \flat A \sharp B C

C C \sharp C \flat D D \sharp C \sharp E F F \sharp F \flat G G \sharp G \flat A A \sharp A \flat B C

C D \flat ↑ D E \flat E↑ E F G \flat G↑ G A \flat A↑ A B \flat B↑ B C

Unison $\frac{1}{6}$ $\frac{1}{3}$ $\frac{1}{2}$ $\frac{2}{3}$ $\frac{5}{6}$ Whole Tone

C C \sharp C \sharp D
C D \flat D \flat D
C C↑ C \sharp C \sharp ↑ C \sharp C \sharp ↑ D
C D \flat ↓ D \flat D \flat ↓ D \flat ↓ D

Whole Tone

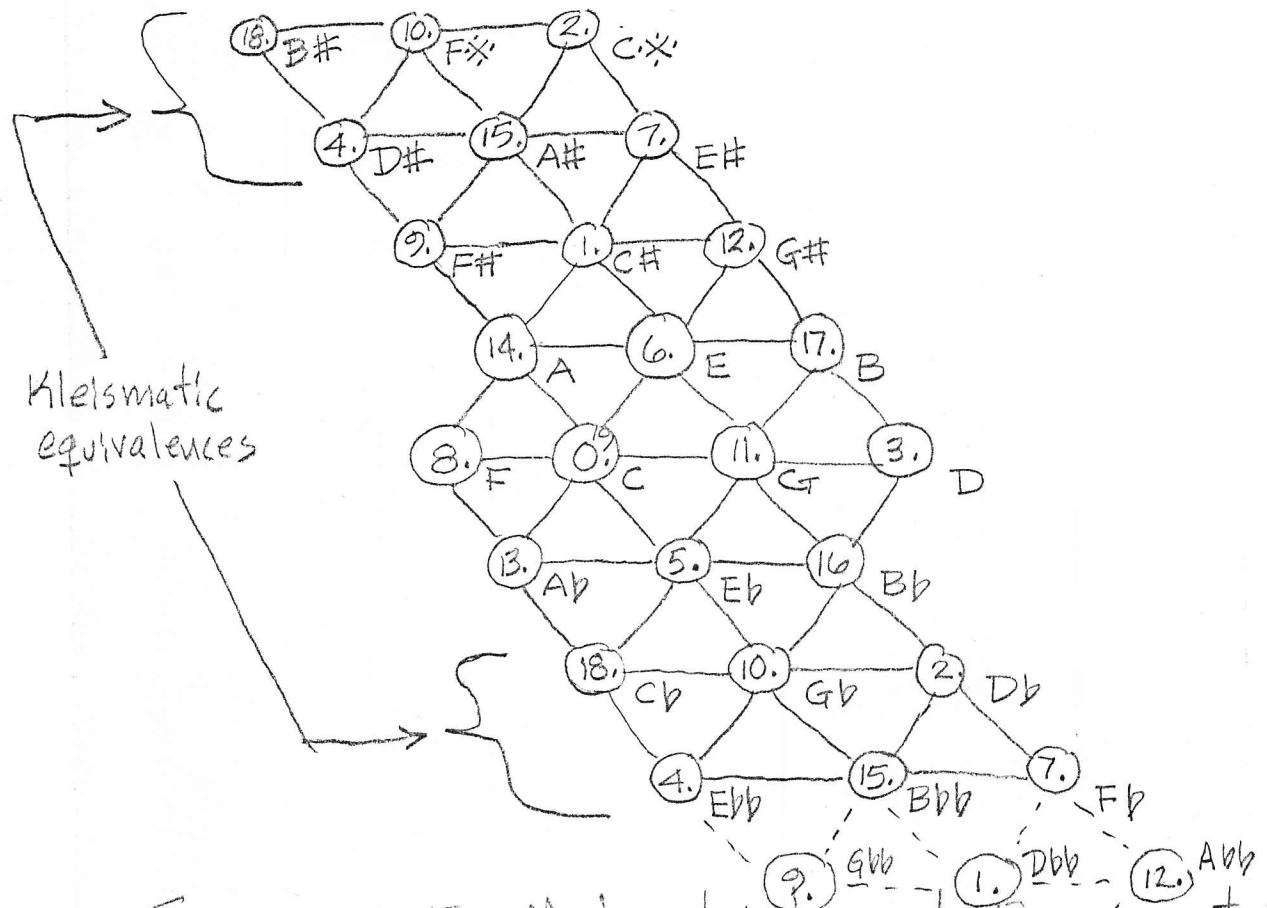
Third tone	Third tone	Third tone
------------	------------	------------

1/6T	1/6T	1/6T	1/6T	1/6T	1/6T
------	------	------	------	------	------

Third high $\frac{2}{3}$ high (sharp)
flat Third low $\frac{1}{3}$ low (flat)
↑ sixth high
↓ sixth low

34-notation
© 1993 Eric Wilson

Normal Notation of All Triads in
19-Tone (MOS), with 5-step Generator
by Eric Wilson



There are 13 Major triads and 13 minor triads in the 19-tone scale (MOS) with a 5-step generator. These can be spelled in normal notation as shown.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34/6

$\frac{1}{1}$ $\frac{25}{24} \frac{16}{15}$ $\frac{10}{9} \frac{9}{8}$ $\frac{6}{5} \frac{16}{13} \frac{5}{4}$ $\frac{4}{3} \frac{27}{20} \frac{18}{13} \frac{45}{32}$ $\frac{40}{27} \frac{3}{2}$ $\frac{25}{16} \frac{8}{5}$ $\frac{5}{3} \frac{27}{16}$ $\frac{16}{9} \frac{9}{5} \frac{24}{13} \frac{15}{8}$ $\frac{40}{39} \frac{65}{64}$ $\frac{1}{1}$

$\frac{40}{39} \frac{65}{64}$

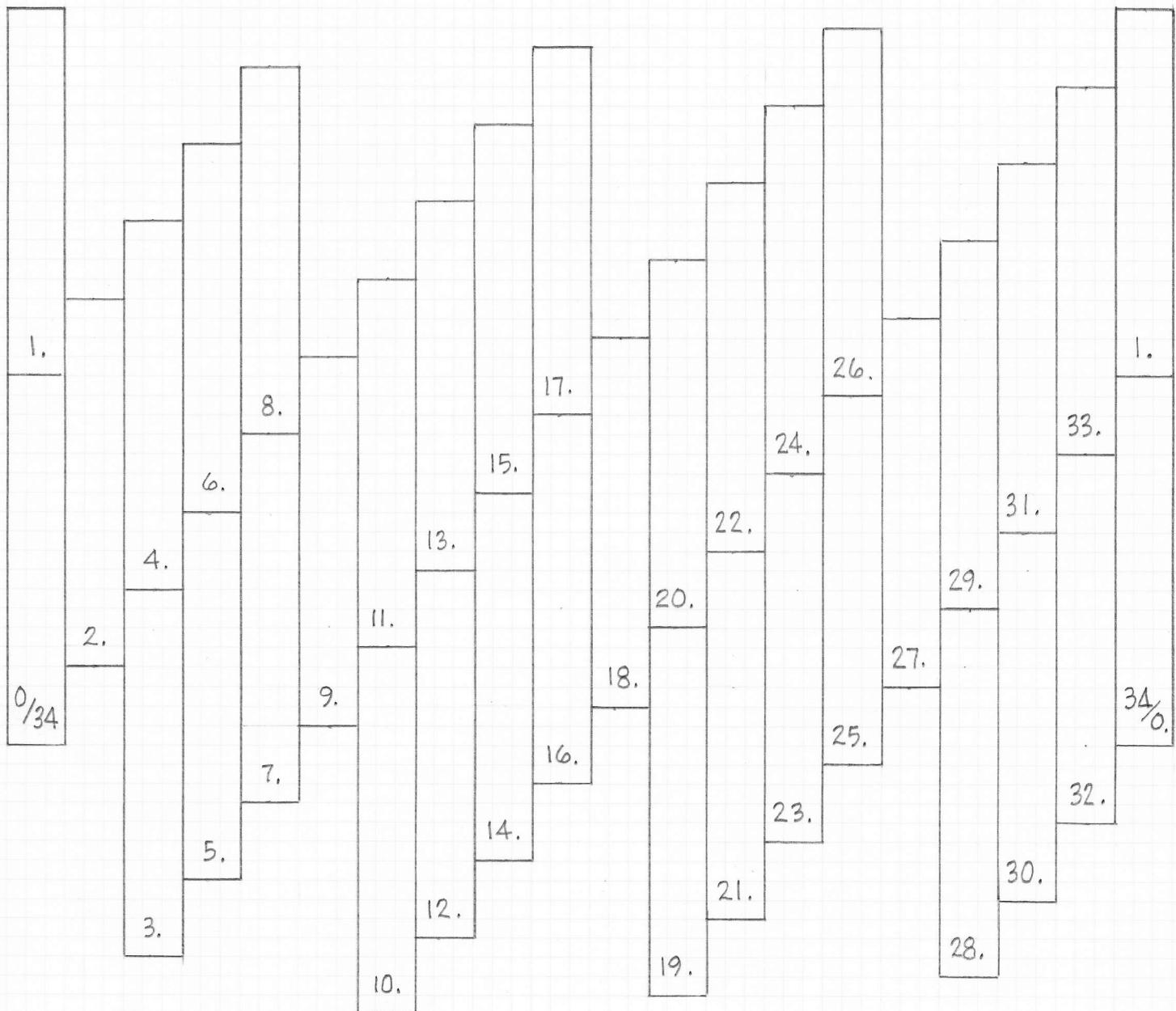


Study for 34-Tone Keyboard
using the Hanson generalized schema
by Erv Wilson 1995 (Dec 14, 95)

34-Tone Tubulong Design

19-rank variation of Hanson Keyboard Geometry

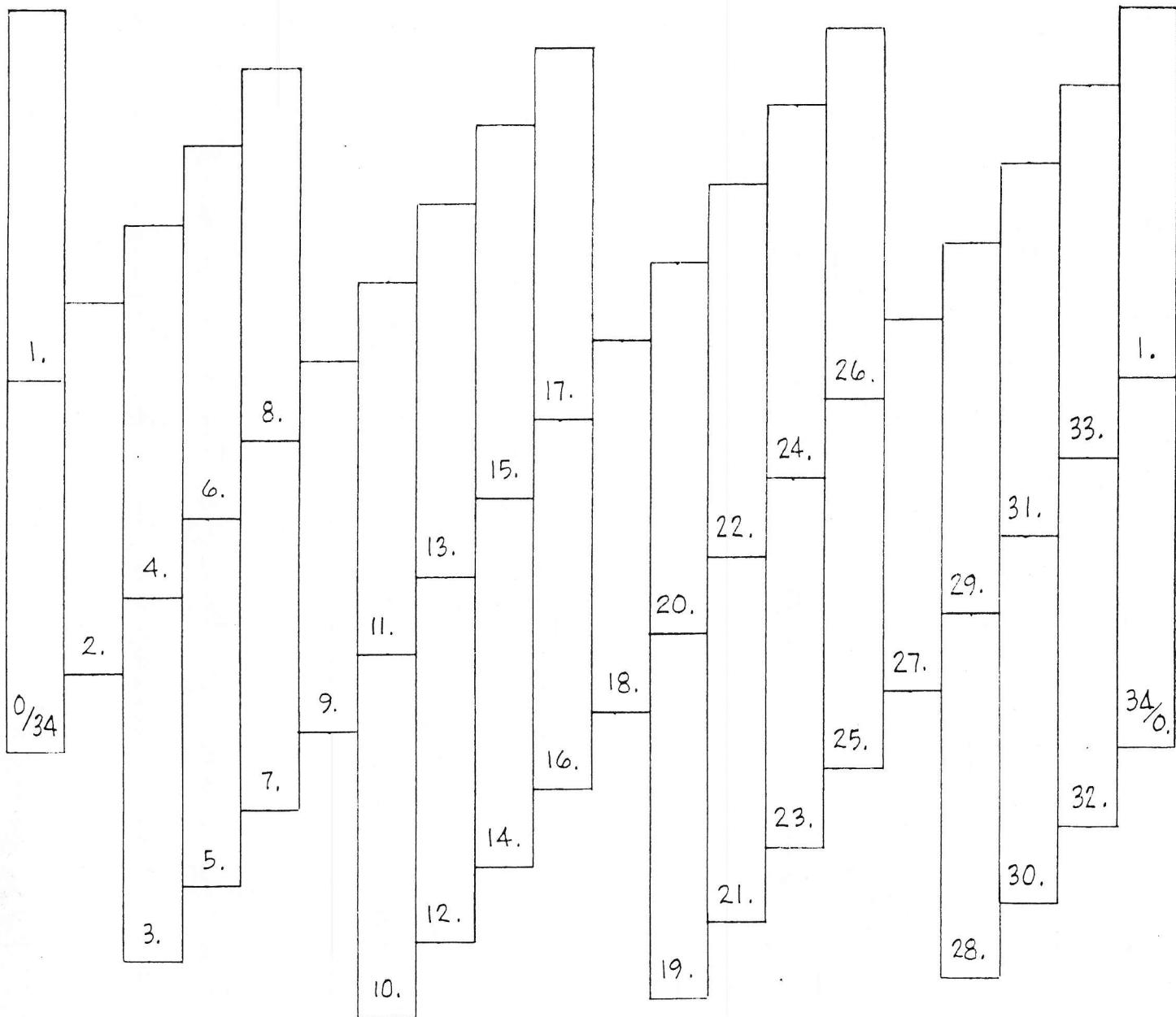
by Erv Wilson 1993



Hanson Generalized Keyboard Geometry used by permission

34-Tone Tubulong Design
19-rank variation of Hanson Keyboard Geometry

by Erv Wilson 1993

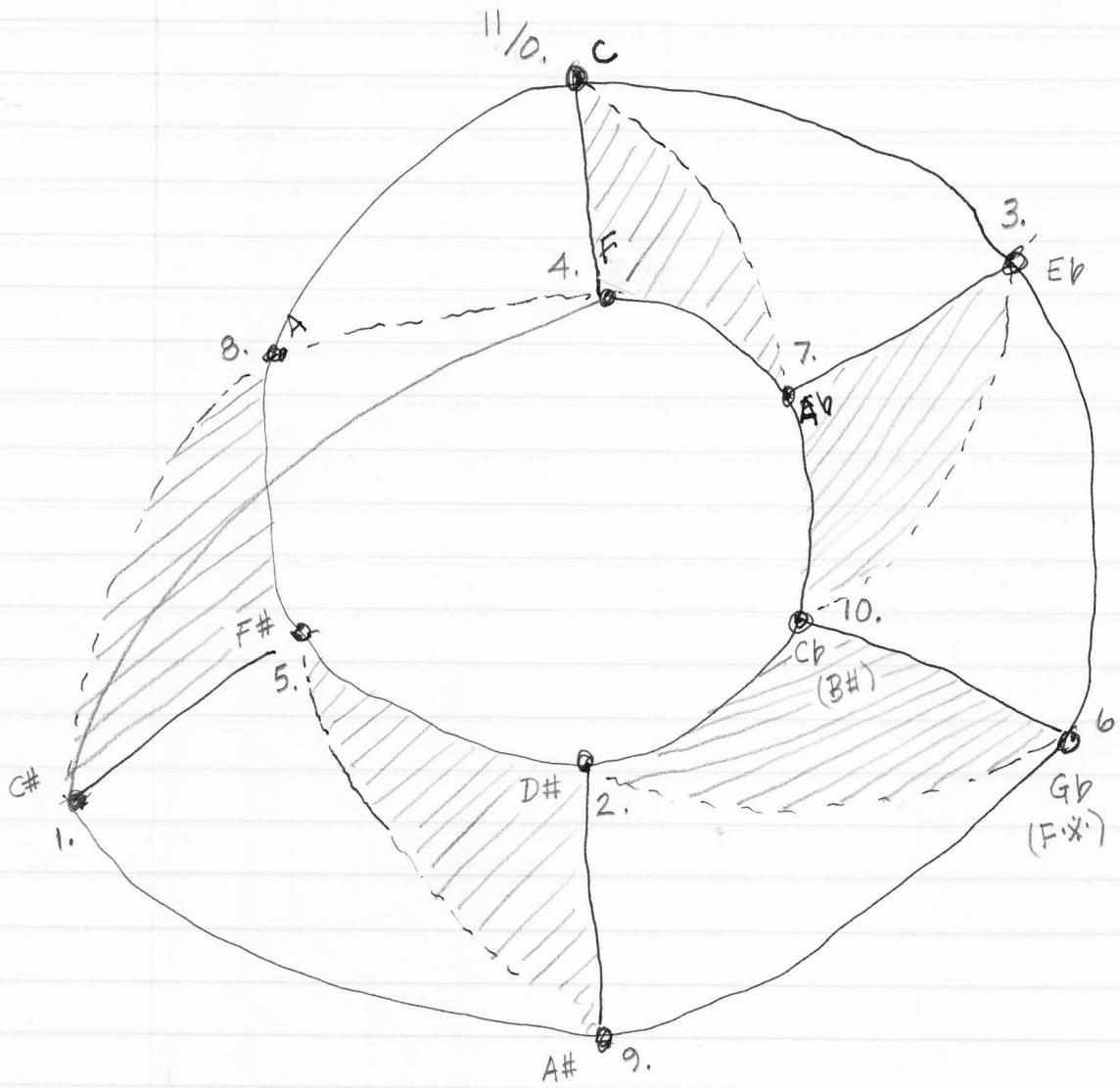


Hanson Generalized Keyboard Geometry used by permission

Eleven-tone Loop

©1997, ©1994 by Eric Wilson

(Inferred from the Hanson sequence)

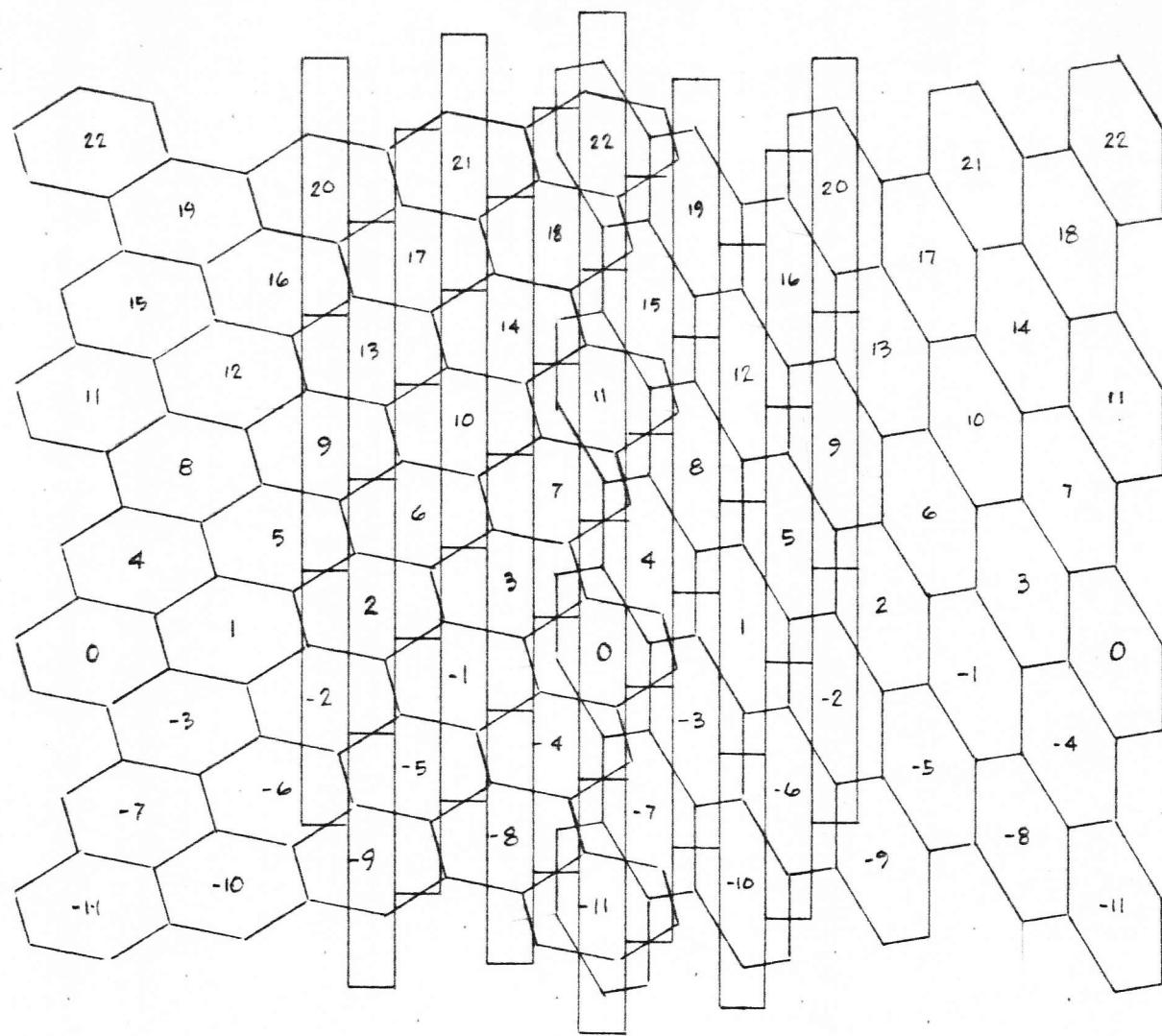


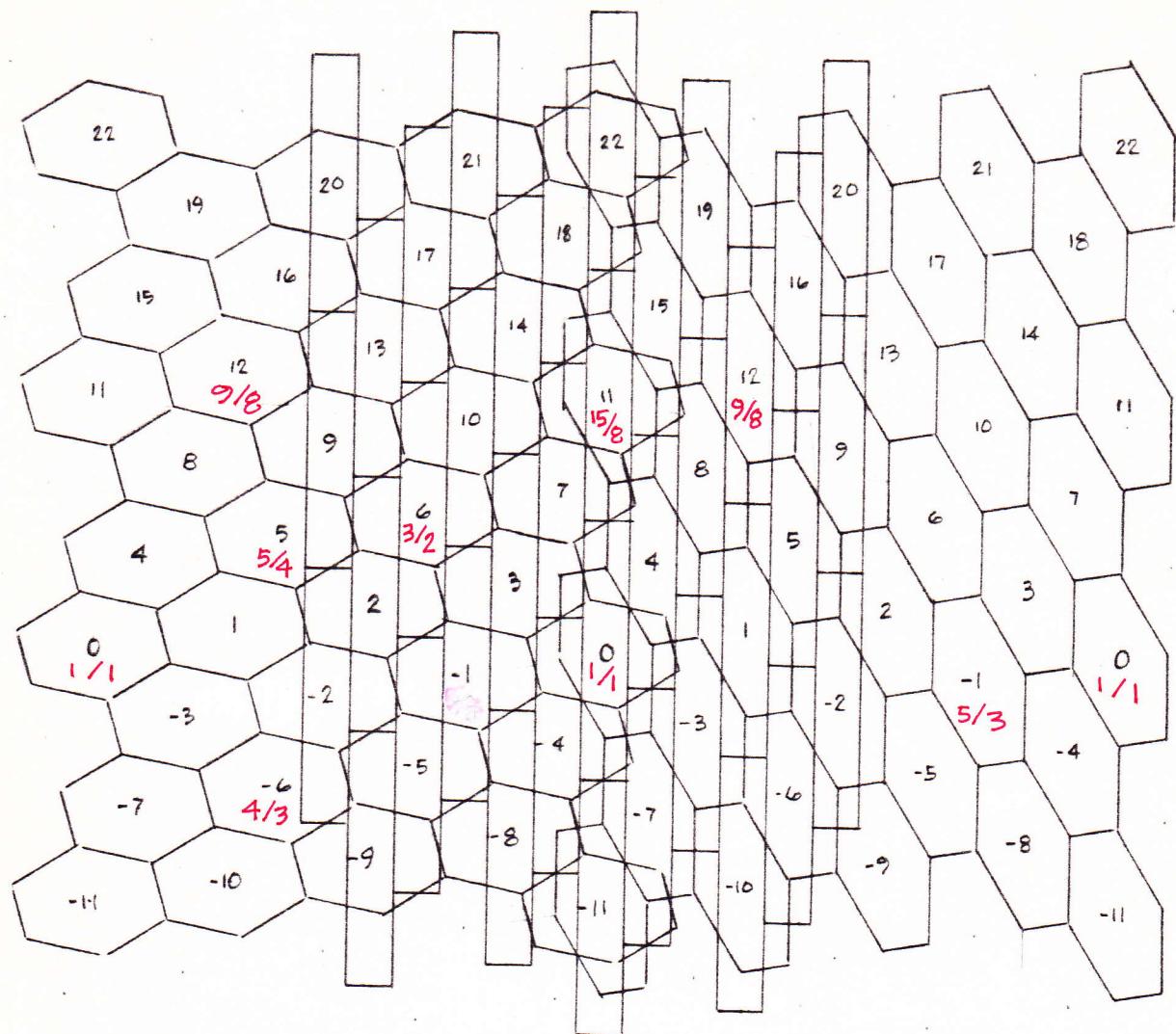
Shaded areas are minor triads.
Unshaded areas are Major triads.
(except the triad F, A, C \sharp is augmented)

This is like a moebius loop.

chain of -3ds

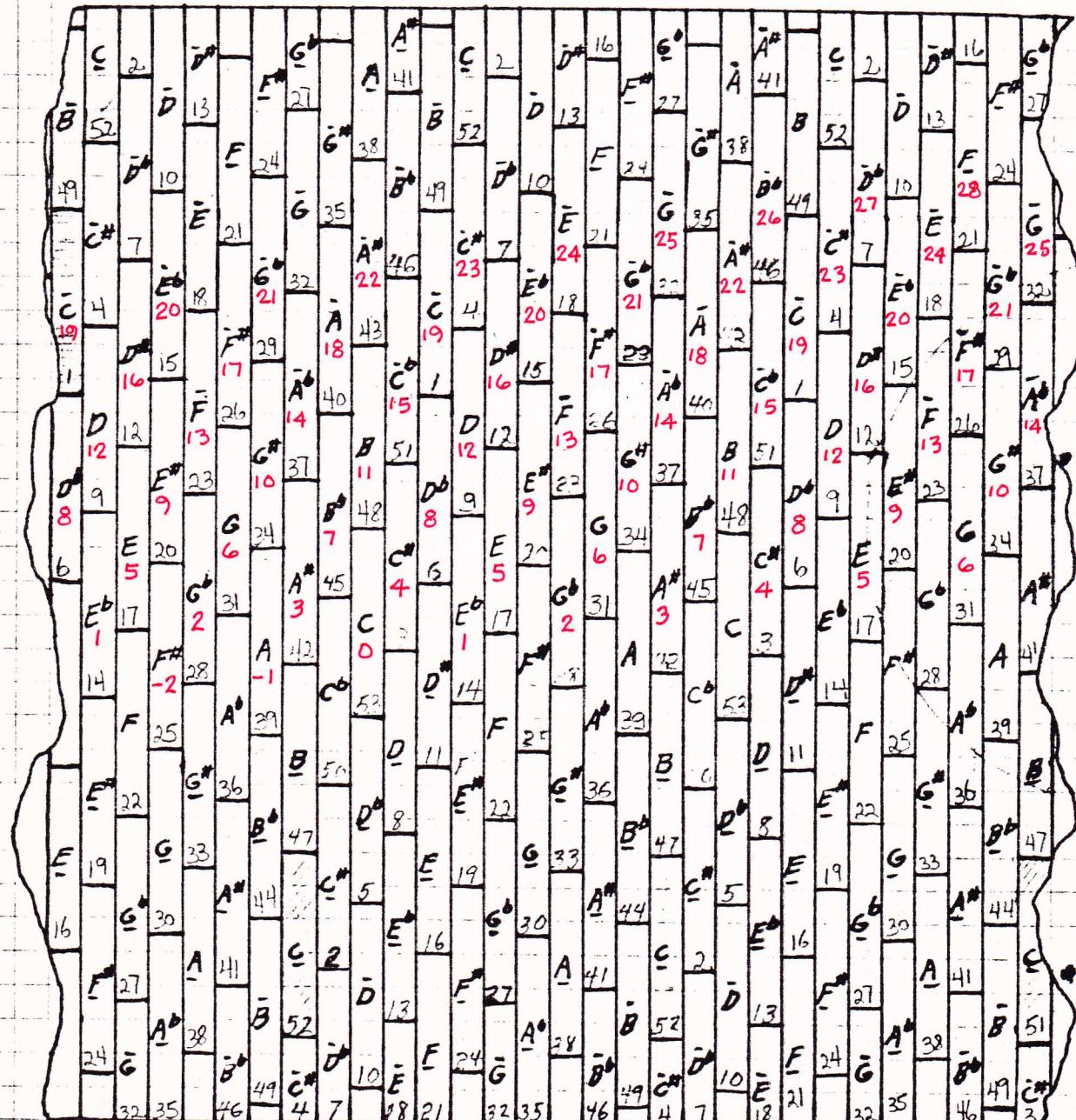
0	+4	-3	+1	-6	-5	-4	0
C	C \sharp	D \sharp	E \flat	F	F \sharp	G \flat	B \sharp
0/11.	1.	2.	3.	4.	5.	6.	10.
9/19.	1.	4.	5.	8.	9.	10.	18.
0/34.	2.	7.	9.	13.	14.	15.	19/0.
				14.	16.	18.	32.
				23.	25.	27.	34/0.





HANSON KEY LAYOUT FOR 53 TONE CYCLE

DESIGN A



INVENTED BY:

L. A. Hanson Jr.

WITNESSED BY: DATE: 16 JAN 1978

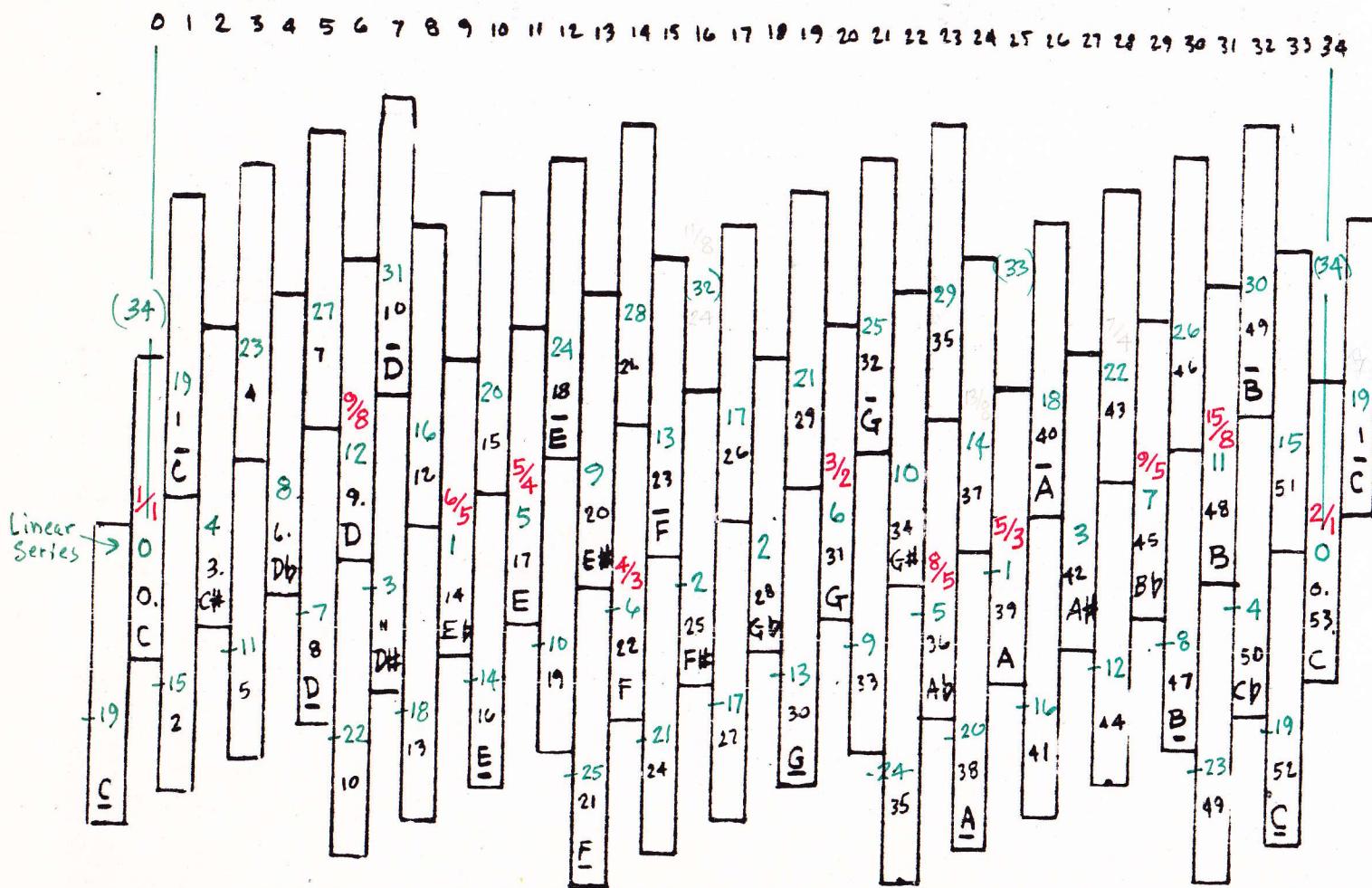
Christine A. Hanson

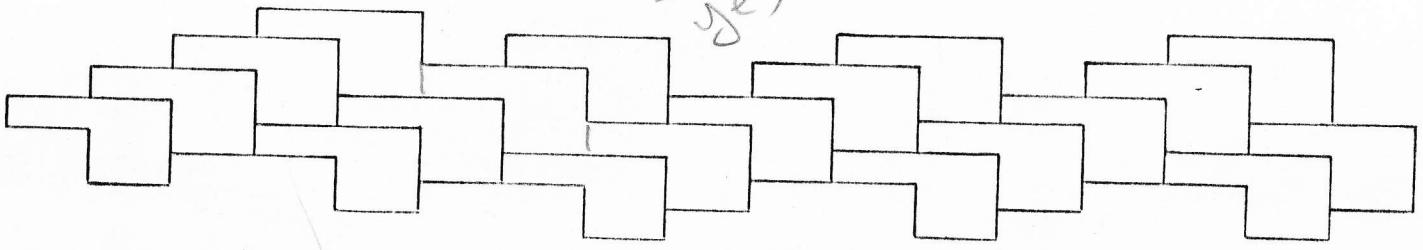
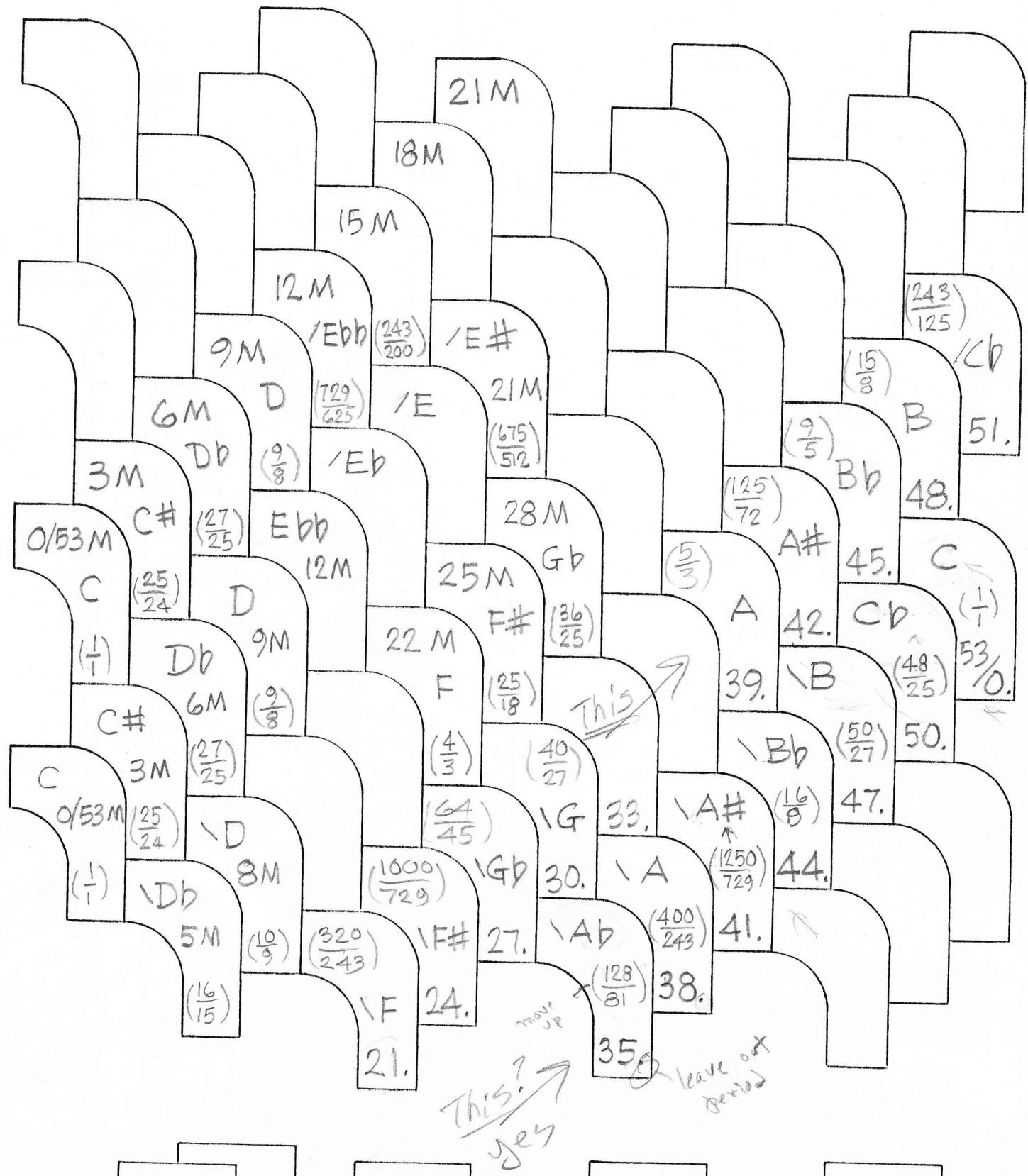
Variation on Hanson's Generalized Kbd Geometry
for mounting 53 tuned tubes (or more)

Design © 1978 by Eric Wilson, all rights reserved

($\frac{9}{34}$) Tubulon Keyboard

constructed of round, 2024-T3, Aluminum alloy, tubing
by Glen Prior for Harry Hanson.



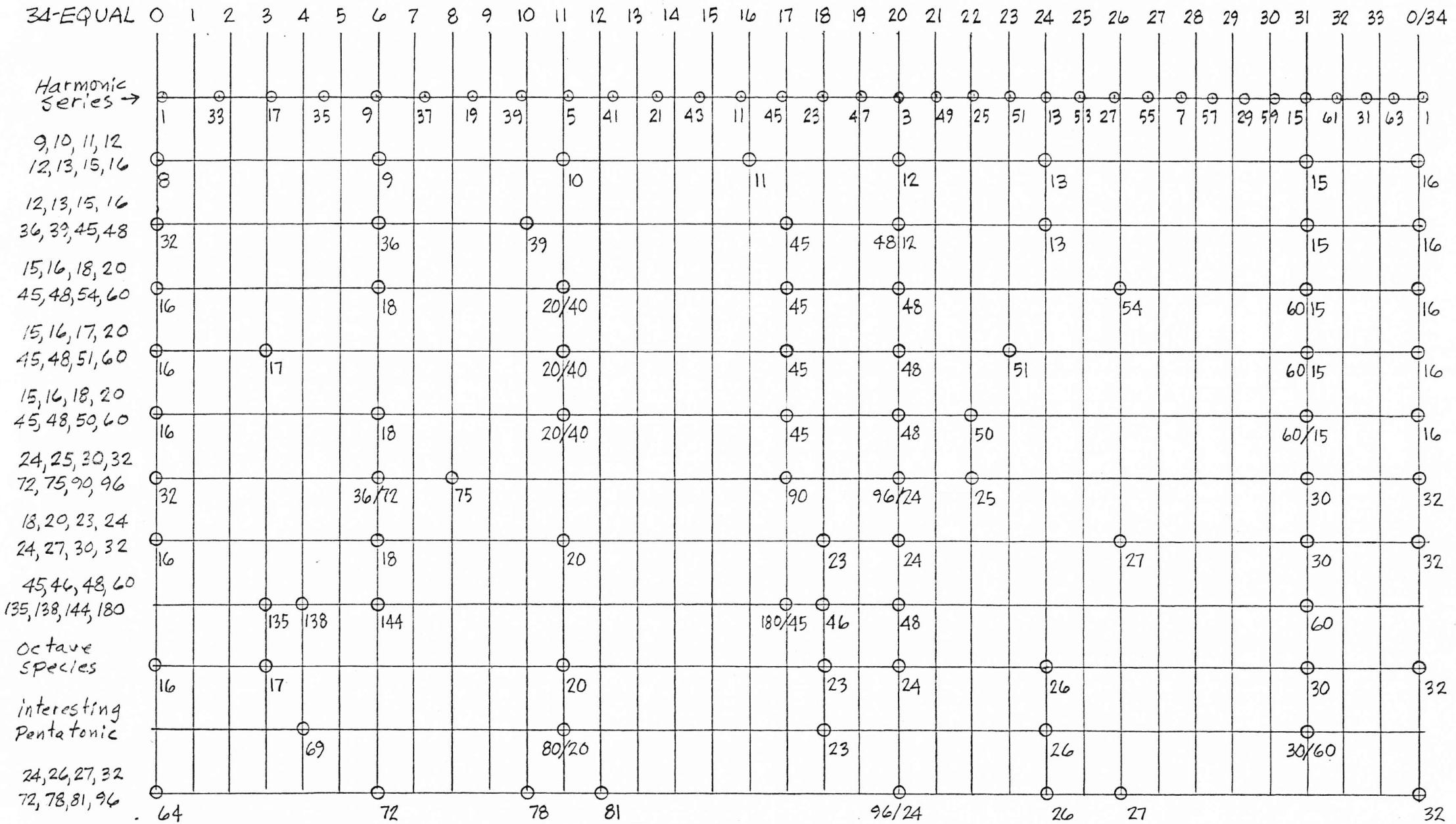


Resources of the 34-Tone Scale

work in progress, all rights reserved
by Erv Wilson 1994

Notes on Harmonics and Tetrachords

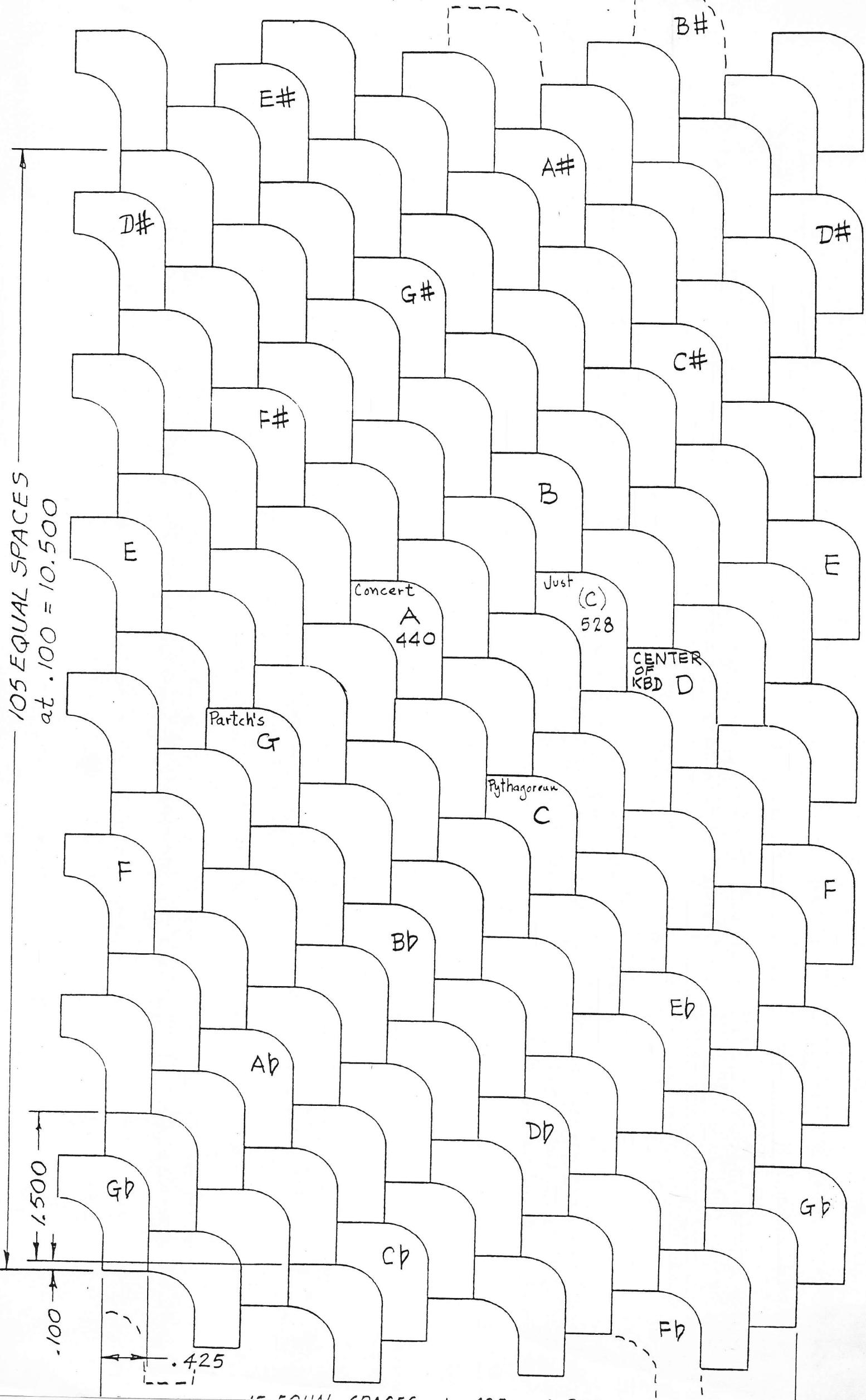
Note: read from this side for the sub-harmonic equivalent scales

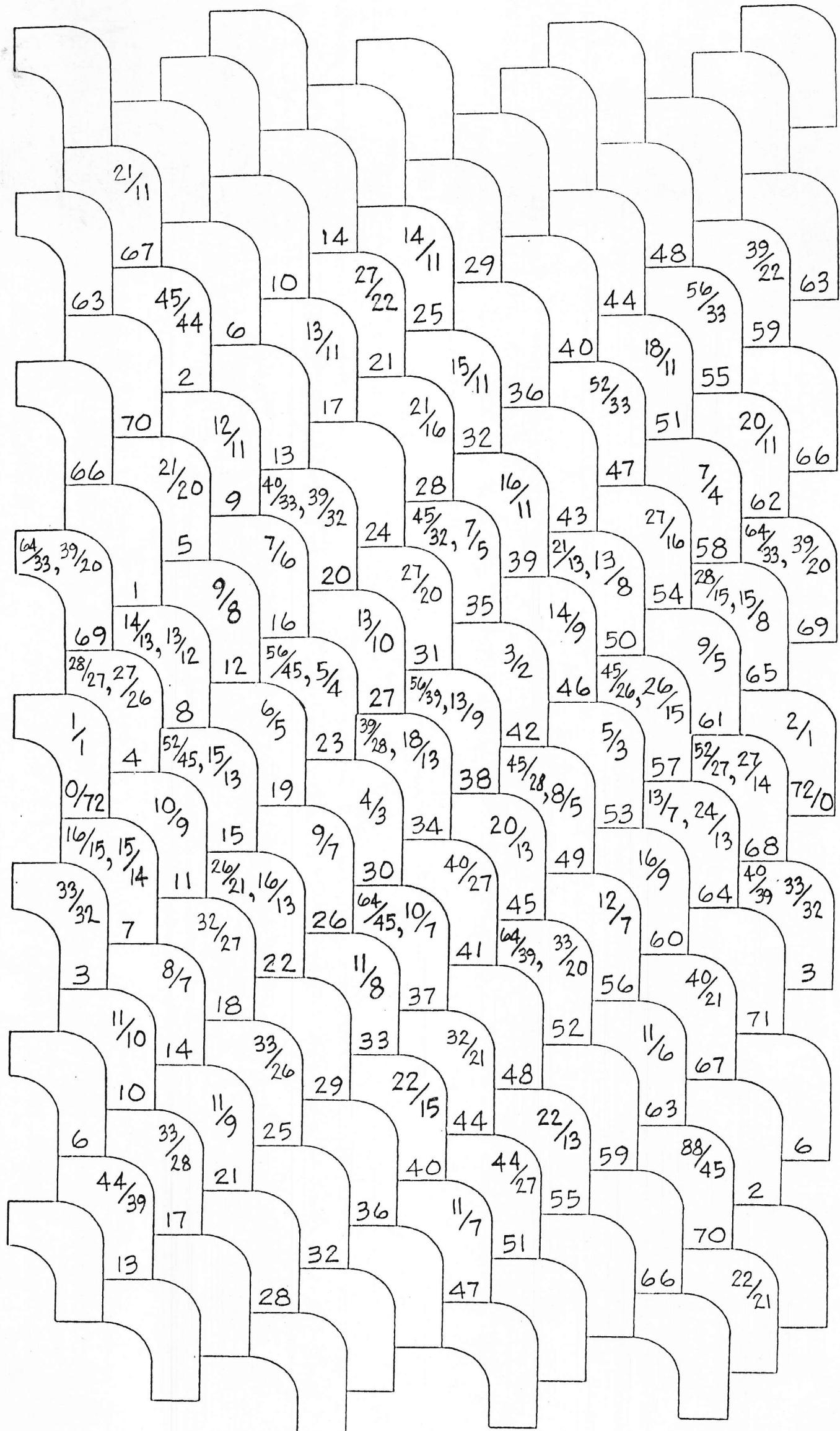


Hanson's Design "B"
design data and digital location (121 digits)

Issued

Mar 18, 89 E.W.





1. G# 10,000 6561	2. D# 2500 2187	3. A# 1250 729	4. E# 625 486	5. B# 625 324	6. F# 625 432	7. C# 625 576	8. G# 625 384	9. D# 625 512	10. /A## 1875 1024	11. /E# 5625 4096	12. /B## 16875 16384	13. //F3# 50625 32768	14. //C3# 151875 131072		
15. //E 8,000 6561	16. //B 4000 2187	17. //F# 1000 729	18. //C# 250 243	19. //G# 125 81	20. //D# 125 108	21. //A# 125 72	22. //E# 125 96	23. //B# 125 64	24. //F## 375 256	25. //C## 1125 1024	26. //G## 3375 2048	27. //D## 10125 8192	28. //A## 30375 16384	29. //E## 91125 65536	
29. //G 3200 2187	30. //D 800 729	31. //A 400 243	32. //E 100 81	33. //B 50/27	34. //F# 25/18	35. //C# 25/24	36. //G# 25/16	37. //D# 75/64	38. //A# 225 128	39. //E# 675 512	40. //B# 2025 1024	41. //F## 6075 4096	42. //C## 18225 16384	43. //G# 4096 32768	
44. //E# 2560 2187	45. //Bb 1280 729	46. //F# 320 243	47. //C 160 81	48. //G 40/27	49. //D 10/9	50. //A 5/3	51. //E 5/4	52. //B 15/8	53. //F# 45/32	54. //C# 135 128	55. //G# 405 256	56. //D# 1215 1024	57. //A# 3645 2048	58. //E# 10935 8192	
59. //Gb 1024 729	60. //Db 256 243	61. //Ab 128 81	62. //Cb 52 27	63. //Eb 16/9	64. //F# 4/3	65. //D 5/13	66. //A 5/4	67. //E 15/8	68. //B 45/32	69. //F# 135 128	70. //C# 405 256	71. //G# 1215 1024	72. //D# 729 512	73. //A# 2187 2048	
74. //Ed 4096 32768	75. //Bd 2048 1215	76. //Fd 512 405	77. //Cd 256 135	78. //Gb 64 45	79. //Db 16 15	80. //Ab 8/5	81. //Ed 6/5	82. //Bd 9/5	83. //F# 27/20	84. //C# 81/64	85. //G# 243 160	86. //D# 243 128	87. //A# 729 640	88. //E# 6561 5120	
89. //Edd 8192 6075	90. //Bdd 2048 2025	91. //Fdd 512 405	92. //Cdd 256 135	93. //Add 49 27	94. //Bdd 128 75	95. //Fb 32/25	96. //Cb 48/25	97. //Gb 36/25	98. //Db 27/25	99. //Ab 81/50	100. //Ed 243/200	101. //C# 81/80	102. //G# 243/160	103. //D# 729 640	104. //A# 2187 1280
105. //E3d 32768 30375	106. //B3d 16384 10125	107. //F3d 4096 3375	108. //C3d 2048 1125	109. //G3d 512 375	110. //D3d 128 125	111. //A3d 192 125	112. //E3d 144 125	113. //B3d 216 125	114. //F3d 162 125	115. //C3d 243 125	116. //G3d 729 500	117. //D3d 2187 2000	118. //A3d 6561 4000	119. //E3d 19683 16000	
120. //G3d 65536 50625	121. //D3d 32768 16384	122. //A3d 8192 5625	123. //E3d 2048 1875	124. //B3d 1024 625	125. //F3d 768 625	126. //C3d 1152 625	127. //G3d 864 625	128. //D3d 648 625	129. //A3d 972 625	130. //E3d 729 625	131. //B3d 2187 1250	132. //F3d 6561 5000	133. //C3d 19,683 10,000	134. //G3d 52.	

53/0. 2/1

52. $160/81$ or $63/32$

51. $35/18$

50. $1,400/729$

49. $243/128$

48. $15/8$

47. $448/243$

46. $175/96$

45. $9/5$

44. $16/9$

43. $7/4$

42. $140/81$

41. $11,200/6,561$

40. $27/16$

39. $5/3$

38. $105/64$

37. $175/108$

36. $8/5$

35. $406/256$

34. $14/9$

33. $1120/729$

32. $243/160$

31. $3/2$

30. $40/27$

29. $35/24$

28. $350/243$

27. $64/45$

26. $45/32$

25. $112/81$

24. $175/128$

23. $27/20$

22. $4/3$

21. $21/16$

20. $35/27$

19. $2800/2187$

18. $81/64$

17. $5/4$

16. $896/729$

15. $175/144$

14. $6/5$

13. $32/27$

12. $7/6$

11. $280/243$

10. $729/640$

9. $9/8$

8. $10/9$

7. $35/32$

6. $175/162$

5. $16/15$

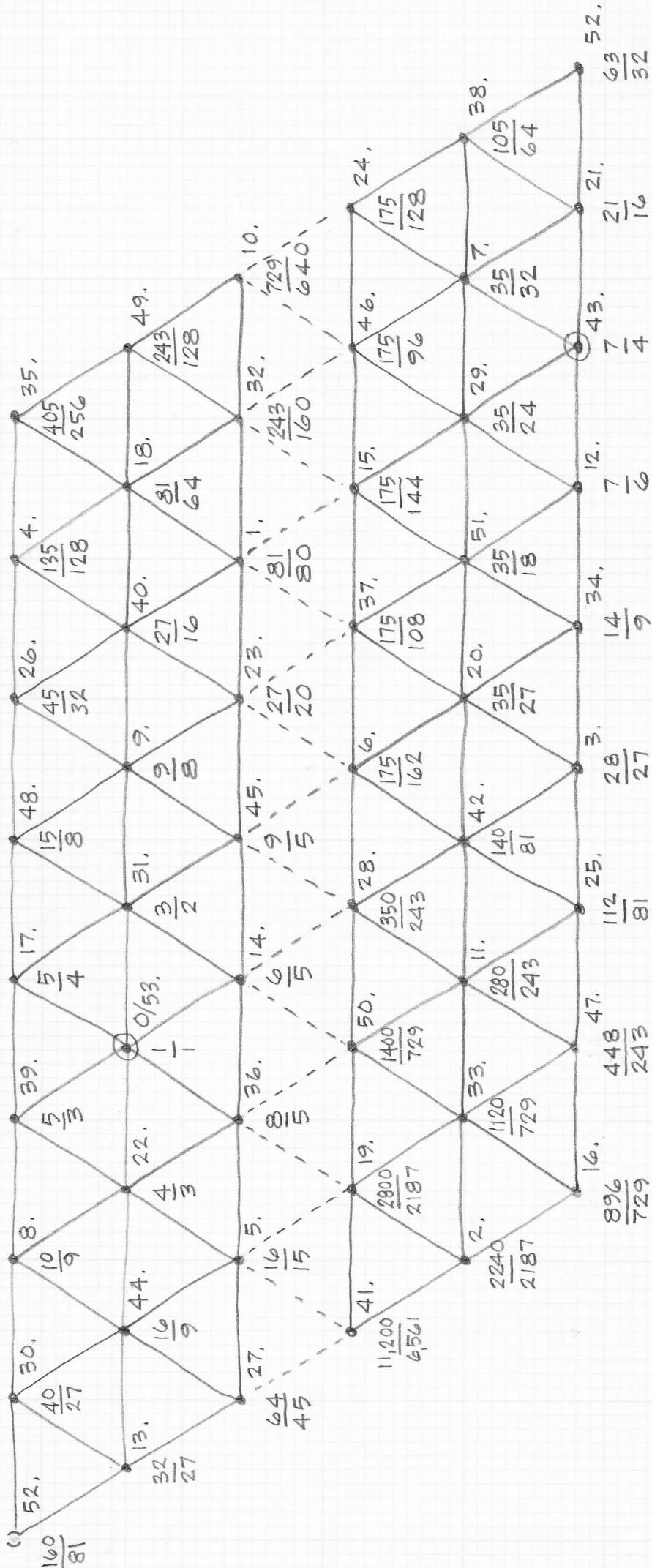
4. $135/128$

3. $28/27$

2. $2240/2187$

1. $81/80$

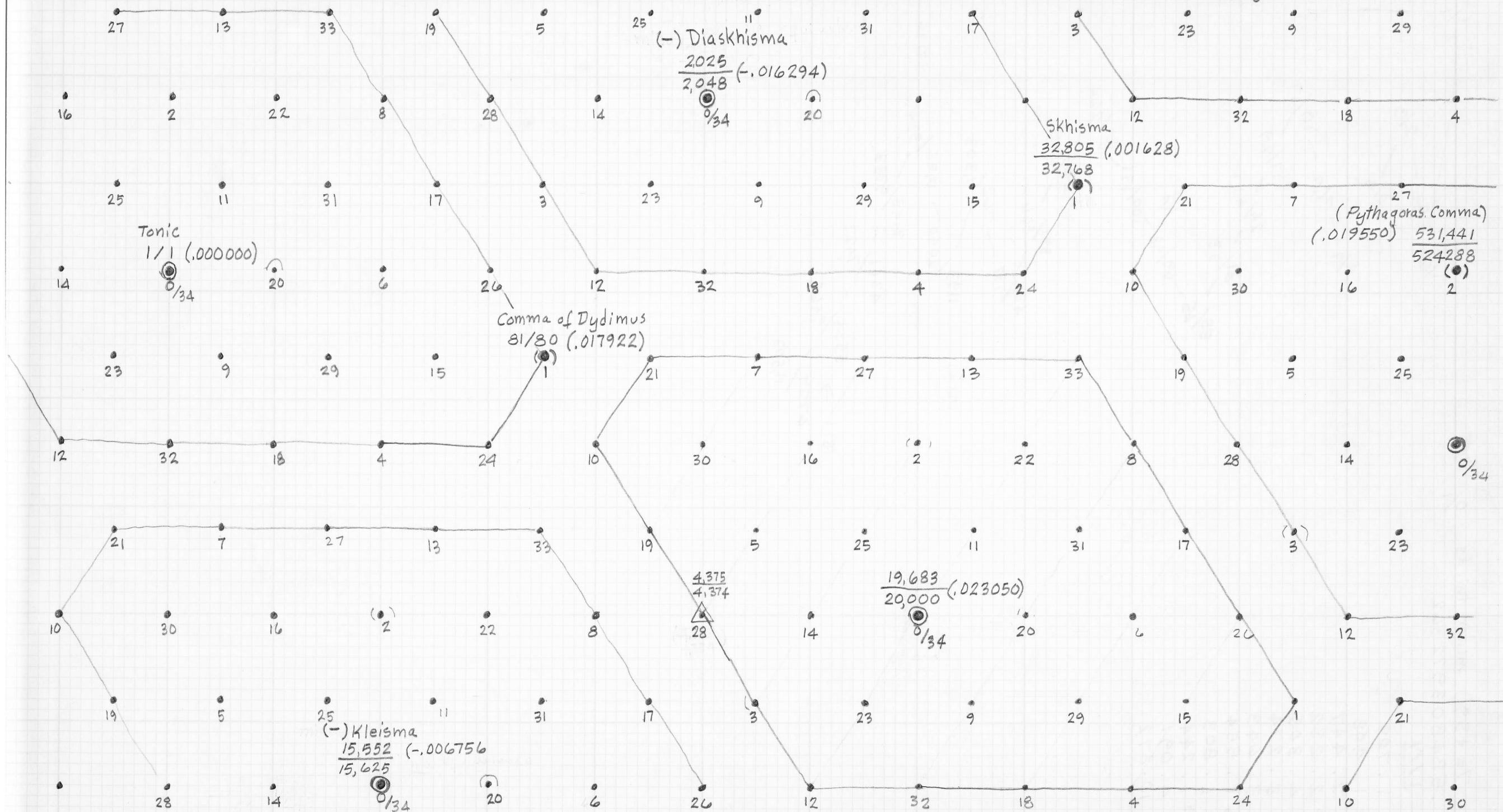
53/0. 1/1



4,375
4,374

$422 = 7$, 263970678275
 $-21 = 1$, 263836589590
 $7 = +39$, 584803972362

Some Notes on L.A. Hanson's 34-Grid by E.Wilson 02-22-96

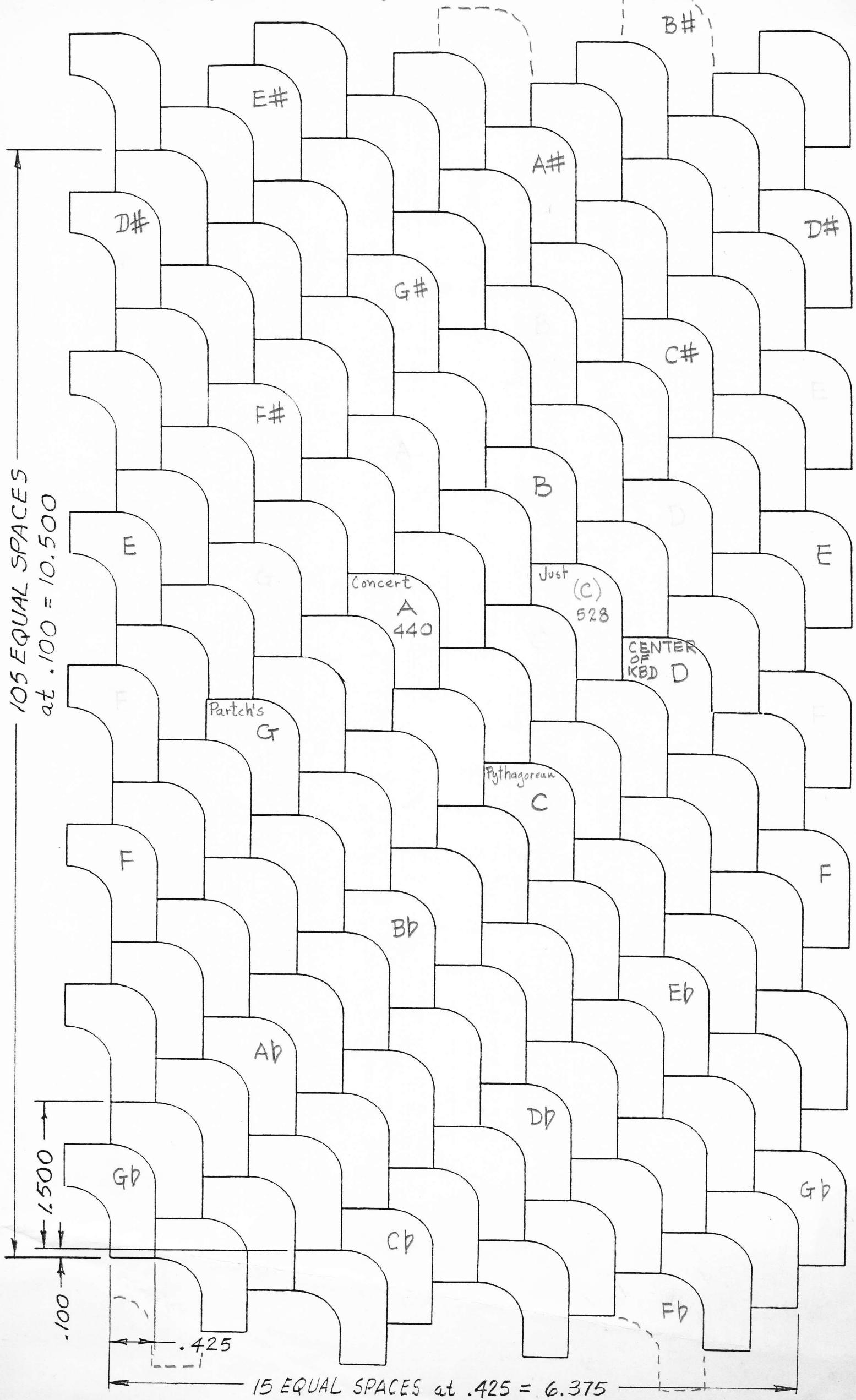


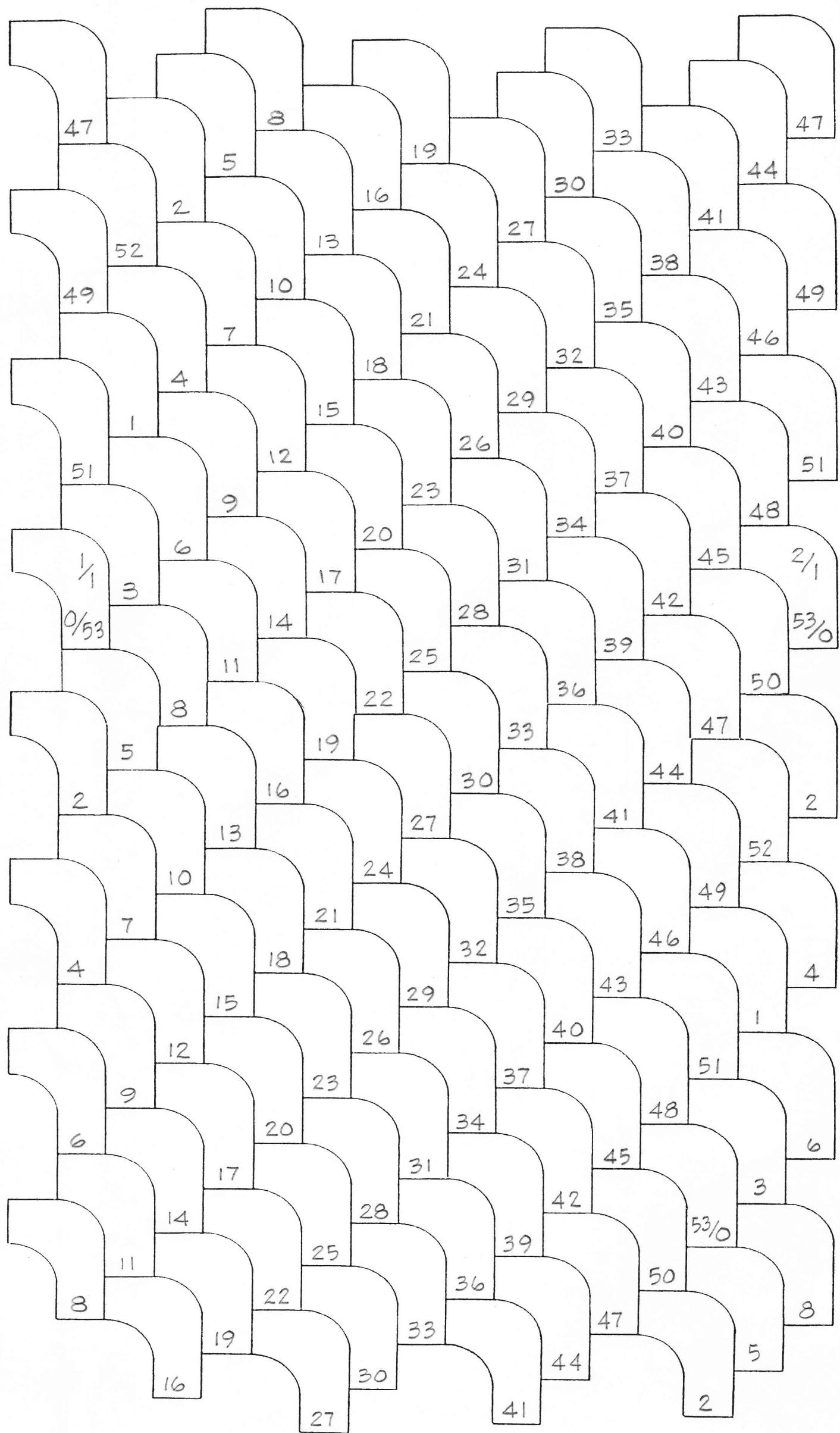
(+36) 241 .069820	+33 288 .860904	(+35) 322 .602812	+32 386 .557471	+34 431 .711339	(+36) 482 .139639
+31 258 .648153	+28 309 .924069	+30 346 .126370	+32 386 .557471	+29 463 .190874	
+24 248 .482918	+26 277 .508264	+23 332 .523118	+25 371 .365220	+27 414 .744476	+24 496 .965835
+19 266 .601800	+21 297 .743617	+18 356 .770045	+20 398 .444436	+22 444 .986822	
+12 256 .123974	+14 286 .041875	+16 319 .454492	+13 382 .785010	+17 427 .498215	+12 477 .434380
+7 C# 274 .800027	+9 D# 306 .899482	+11 4. 342 .748481	+8 12. 410 .696934	+10 A# 458 .670538	+12 512 .247949
0 C 264 0/19.	+2 3. 294 D .837901	+4 6. 329 E .277984	+6 9. 367 F# .741021	+8 15. 410 G# .696934	
+5 Db 283 .250357	-3 5. 316 Eb .336896	-1 8. 353 F .288282	+1 11. 394 G .555968	+3 14. 440 A .644141	+5 17. 492 B .115885
-12 2. 272 .118220	-10 3. 303 .904412	-8 7. 339 Fb .403556	-6 10. 379 Gb .049364	-4 13. 423 Ab .326207	-2 16. 472 Bb .775039
-17 2. 291 .960542	-15 5. 326 .064520	-13 7. 364 .152191	-11 10. 406 .688892	-9 13. 454 .194316	-7 18. 507 cb .248858
-24 2. 280 .486082	-22 3. 313 .249726	-20 7. 349 .840498	-16 11. 436 .343841	-14 14. 487 .313265	-12 12. 544 .236440
-29 1. 300 .938571	-27 3. 336 .091275	-25 7. 375 .350174	-23 13. 390 .705448	-21 11. 468 .161170	-19 19. 522 .847183
-34 2. 322 .882416	-32 3. 360 .598385	-30 7. 402 .719966	-28 10. 449 .761777	-26 12. 502 .298554	-24 11. 560 .972164
-35) 1. 432 .085508			-33 11. 482 .557515	-31 10. 538 .925170	

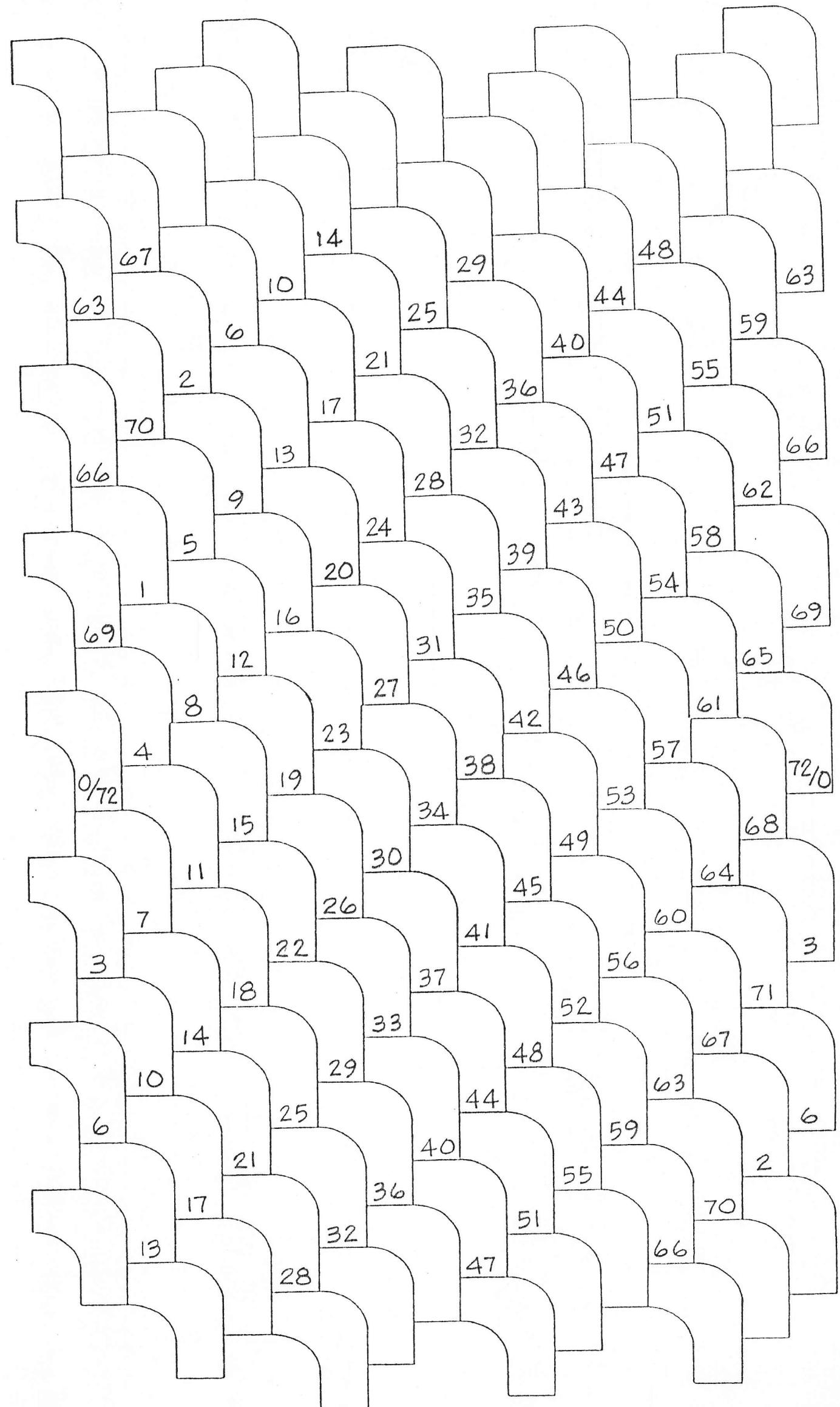
Hanson's Design "B"

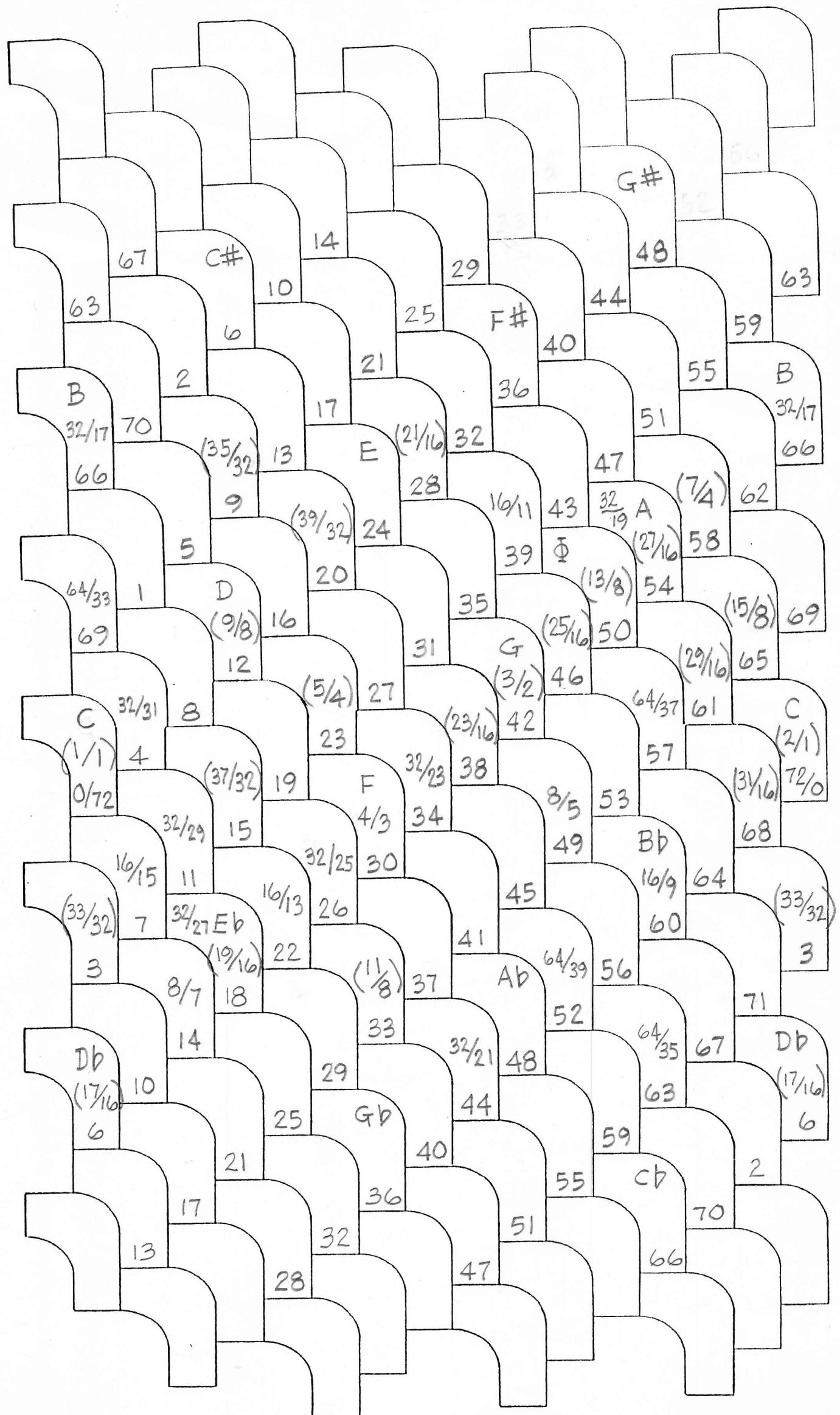
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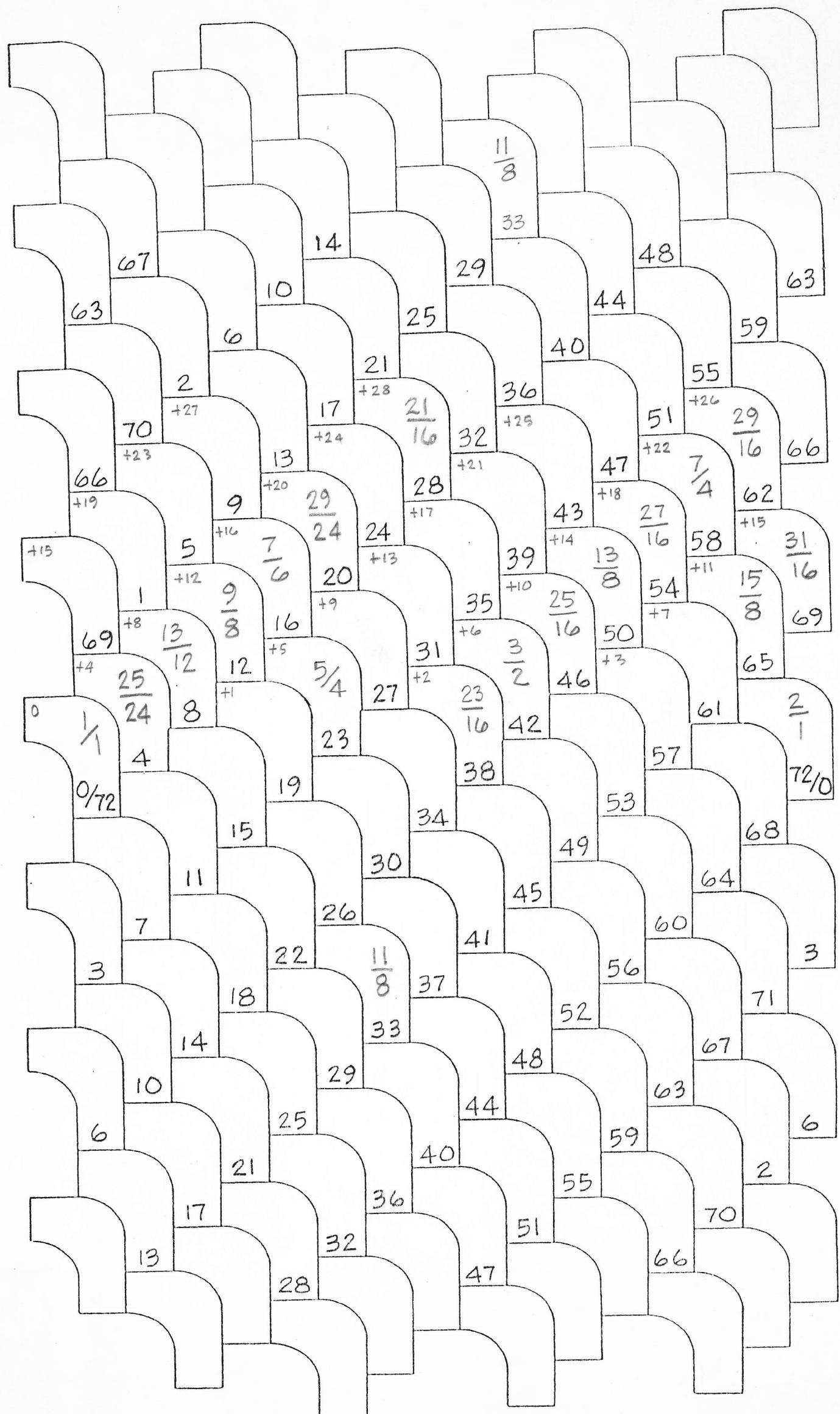
Issued Mar 18, 89 E.W.

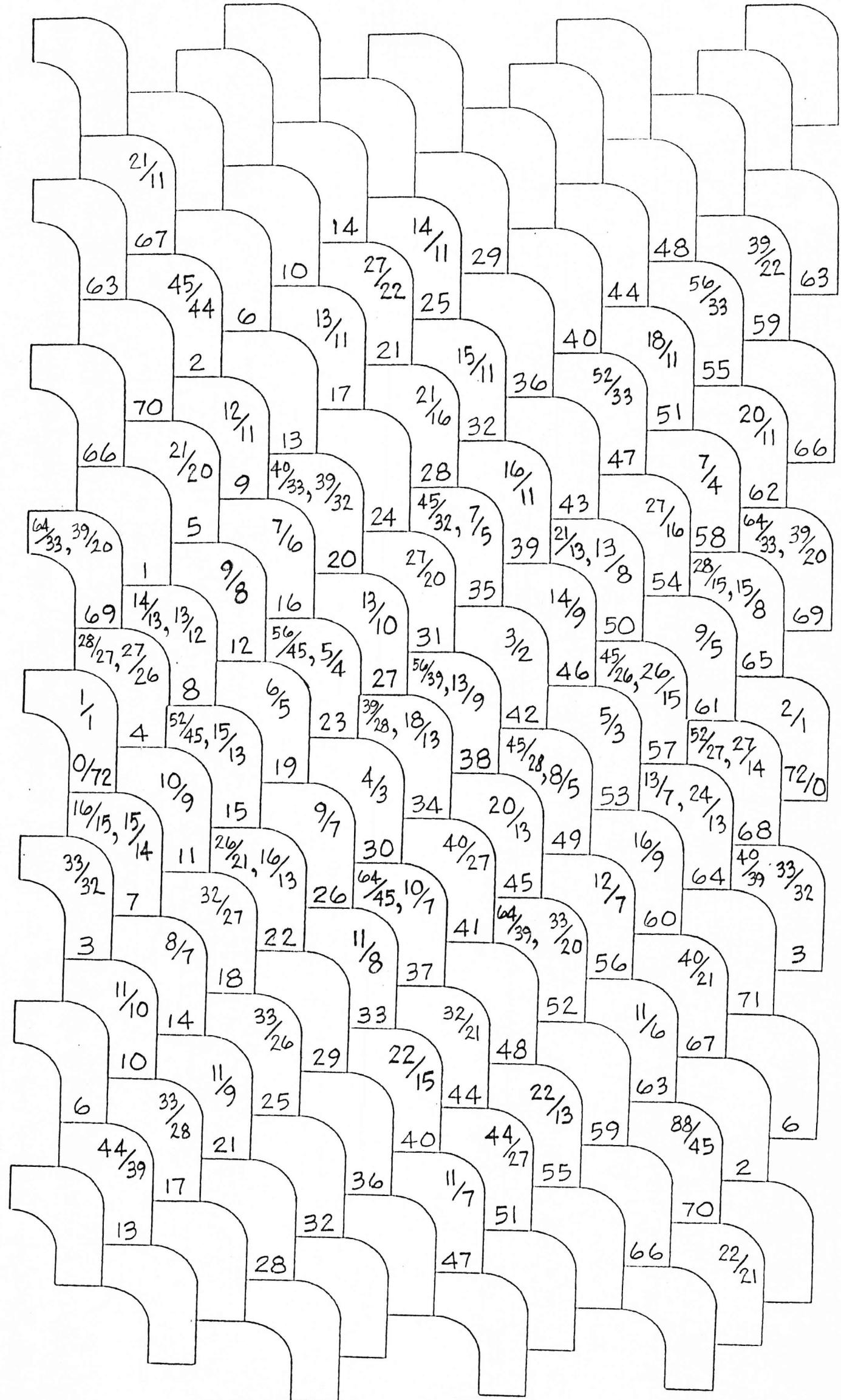


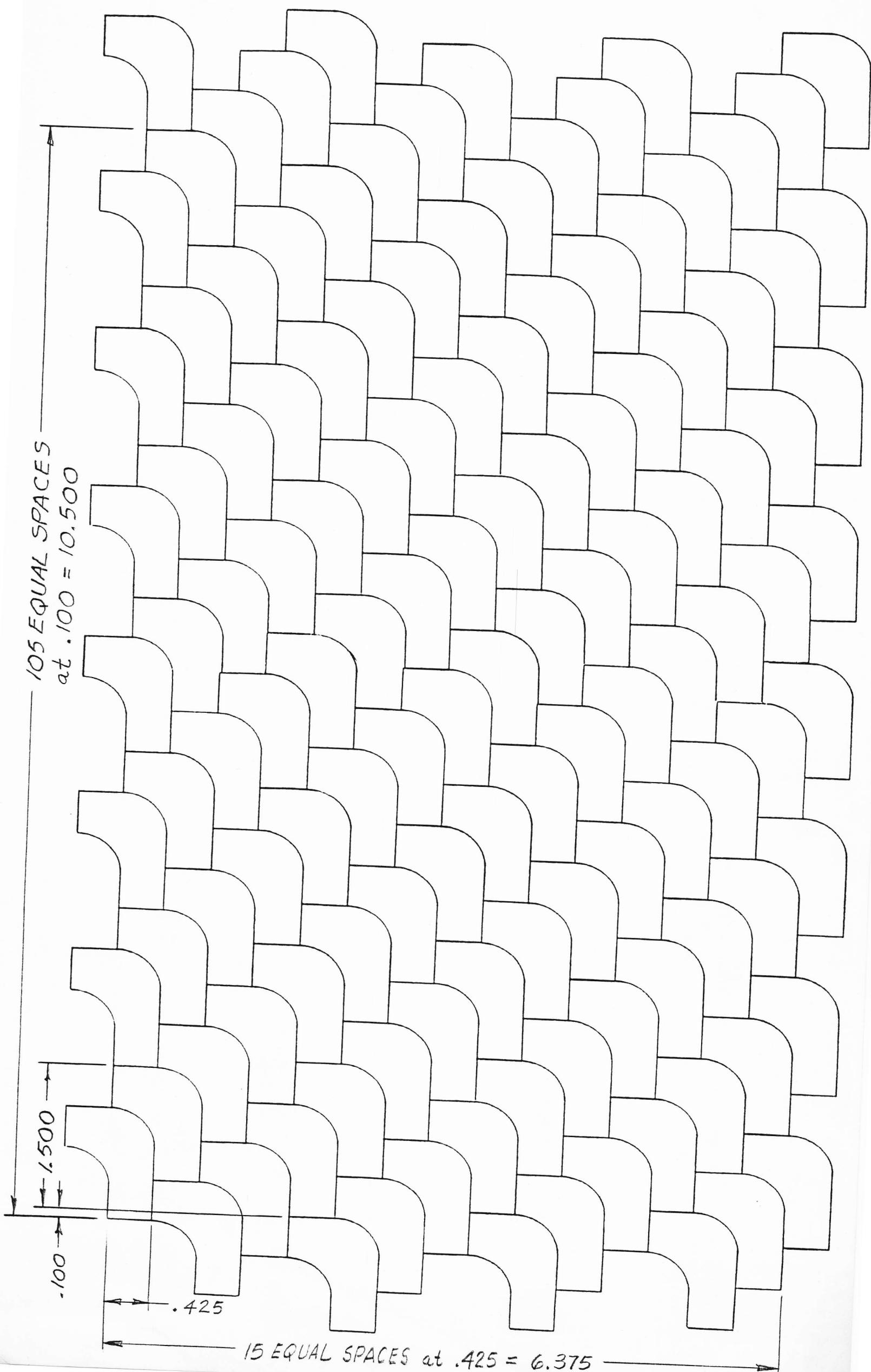


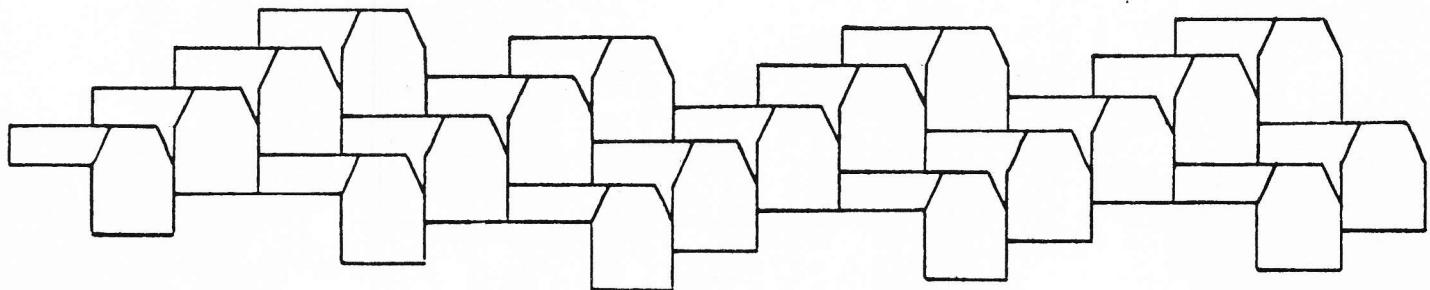
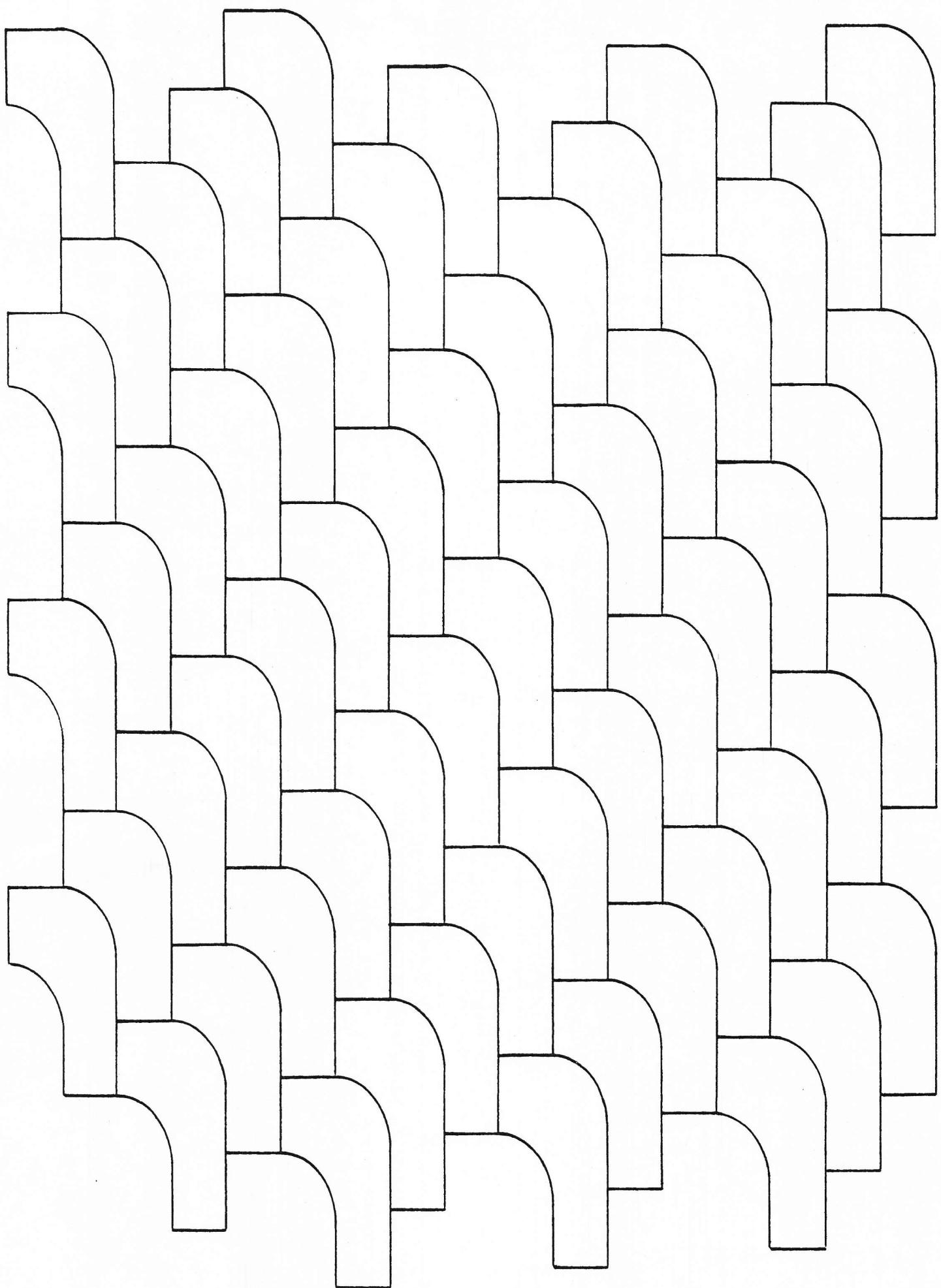


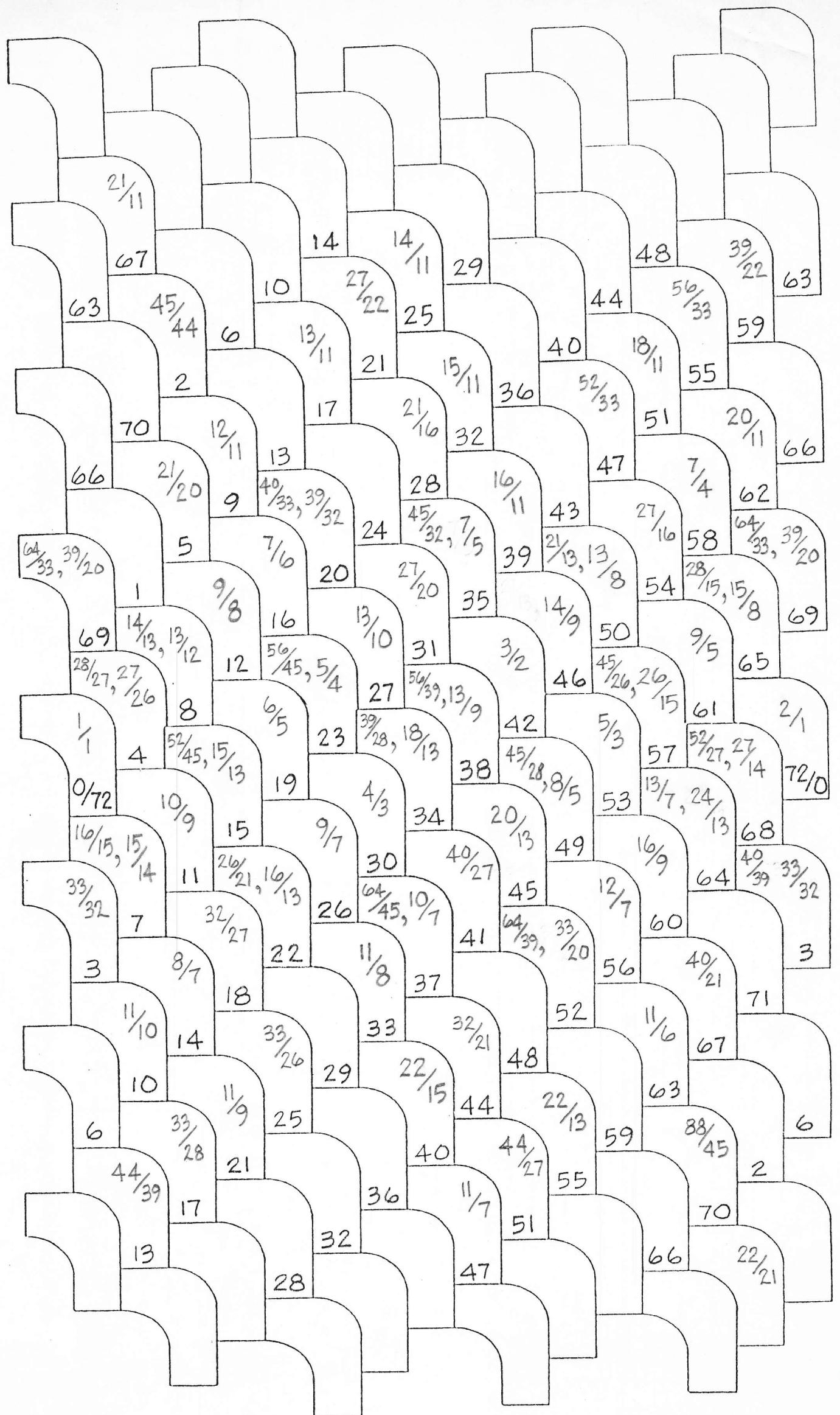












8 7 8 8 8 8 8 8 7 8 8 8 7 8 8

