June 24, 1969

4 kg monkey and Lesione # 26 to be used for disparity experiment.
Anesthetized as usualwith i.v. penthotal inj. by Mr. Landry.
Coordinates: LH. Ant 12 mm of the ridge. Lateral 12 mm
RH Ant 14 mm of the ridge Lateral 12 mm

Unit 1 LH 18.10 Syringe zeroed at contact. Nice binocular cell with small field. 1. in 17. LE dominates,Gr.5-6/ Oriented.

Unit 1 RH 0.000 Electrode may be in 18, the lunate sulcus can be seen in the nxt ant. part of the whole. Small neg unit rather crappy. Field rel. large indicating 18. Both eyes no clear dominance. No intersting binouclar interaction. Prism and mirror and everything set up as usual.

Unit 2 0.050 Slightly better neg. unit with new or.Both eyes about equal,Gr.4. No binocular interest, no striking summation or critical psotion. A bit crappy resp.

o? Unit 3 0.077 A big pos unit with best resp. when fields are in register.LE dom.Gr.5. Well oriented. The max not striking but the max seems to be when cell are in reg. Tagg cell checked.

Unit 4 0.087 A pos unit and rich hash resp. to a white slit but poorly to a red and wuite well to a blue or green slit. First color cell we have seen in 18 except for the double opponent cells. Nothing interesting to binocular. Gr.3,LE dom.

color.

Unit 5 0.110 A neg unit with no color or binocular pro pe ties. Gr.4.

Unit 6 0.121 A neg unit a d rich hash all the same. Resp. to white slit and very well to a blue one,red poor. Again a blue sensitvie but not specific cell. Both eyes,LE dom.Gr.3. Disparity not very critical ,seems best around point of register. Not teeribly well or.

color

Unit 7 0.167 A neg unit with no binocu;ar onterest. Gr.3. Best resp. when in reg.

?o Unit 8 0.208 Another neg unitwith best resp. with eyes in reg. Mod summation, Gr.4. Good resp. to ind. eyes/ Not color cx sensitive.

o Unit 9 0.236 A nice neg unit resp to both eyes,Gr.3. with clear and good summation with eyes in reg. and rather rapid falling off,the best today. No color specificity. Or. Hcx. Slit.

o Unit 10 0.260 A neg unit summing with eyes in reg. Not dramatic but o.k. No disp. No color. Both eyes about equal. Gr.4.

o? Unit 11 0.318 A big neg unit responing best to a black bar in vertical or. Both eyes about equal.Gr.4. No clear disparity and summation good when in reg. No color sensitivity .

We tried the TV machinery and the cluge if a good disparity unit would show up.

Unit 12 0/373 A neg unit with mod. critical or. both eyes,Gr.4 and nil disparity.

Unit 13 0.380 A neg mystery unit with no orientation ,field of aboutthe same size as #12 and inh. by anything in the center, white spot,black or colored spots or the end of a tongue. Adaps rather readily if spot is left on but gives an off response as target is removed. Little to diffuse light. No color oppenent cell simple or double. Both eyes about equal. Gr.4.

Unit 14 0.402 similar unit with complement properties in that it is excited by anything in the center. Here a hint of orientation in that hor. or. things not as good. No color spec. Both eyes,Gr.4. No disparity or binocular interest.

Unit 15 0.506 A neg unit with closer to hor. or. Black bar fine. No disparity reasonable summation between the eyes but position as for most units today not very critical. Gr.4.

Unit 16 0.530 A pretty crappy unit withweak resp. from either eyesome summation,No disp. Gr4
Lesion # 1 0.530 3 x 3 Time 3:45 p.m.

0 Unit 17 0.590 A well or. neg unit with very clear max resp. with eyes in reg. No response and $\frac{1}{4}$° away in either dir. Unfortunately unit too small for video taping otherwise a good example for correspondence cell. Weak resp. to individual eyes. LE little better. Gr.3.

0 Unit 18 and 19 0.674 A neg sharp and a neg grumby one both max. rather sharply with the eyes in reg.Tried to tape but units too small. Grumpy one hcx. the other cx. Weak resp. tp individual eye.

illustr.

0 Unit 20 and 21 0.681 A sharp pos spike more like a fiber and a big pos. sluggish one which we discovered later. The small one nicely tuned to give excellent responses with eyes in register. ~~Sah~~Sharp falling off. Taped on video Reel # 3 203-234 using the ordinary stim. and from 234 to 322 with the cluge testing both eye position and orientation, A nice unit. The grumbly one responds occa sionally and isonly with eyes in reg. precisely. No responses to indiviudal eyes. for either of the two units. Good orientation moderately critical.but good enough.

Tine 6:30 p.m. so time for supper. Chaffee a studen from Bio 166 here for a while.

illustr

+ 10 mm Unit 22 0.687 A neg-pos unit when we came back from dinner and with about 4/10° disparity. LH checked carefully with a new unit and its has a clear max when this unit give no response at all. No resp. to individual eyes. Nice sharp peaking. Tape # 3 324- 374 using our regular set-up. and not the cluge. The cluge taped from 474-415.

hor 0 Unit 23 0.787 A unit with close to horizontal orientation with no resp. to individual eyes and very critical position of LE very close to register. Mov. up as well as sidewise critica Taped a bit Reel # 3 415-485 with our regular stim.

hor 0 Unit 24 0.826 A nice neg-pos unit similar to the last with resp. when in reg. Also like the last sensitive to up and down. Sluggish.

1½ down ½ out. 0 Units 25 and 26 0.850 A small neg unit # 26 or. aroynd 3:30 not very critical about eye pos. and good resp. to individual eyes. Bigger unit like the previous ones critical up and down position. Or. around 2:30. Weak resp. to individual eyes.

+ Unit 27 0.959 A neg unit with same or. as 26 and with good resp. from LE no resp. from R^E but stil powerful inh. at stim. of both eyes when R^E was above or to the right of LE. Not very critical position but a clear assymetry between up and below the point of reg. Best resp. actually slightly below old point of reg. Cannot be called a Grl cellobviously.

+10 or 11 ? see tapes Unit 28,29 and 30 0.986 Three neg units with 4 o'clock or. and all peaking with about $\frac{1}{2}$° of disparity. They give resp. to individual eyes but the peaking very good and sharp and give a tremendous response. We convince ourselves completely that the shift is entirely horizontal. With eyes in reg. field displaced laterally and when max resp. field super imposed. Dom. Gr.4. Mod. well or. lit. Tape Reel # 3 457-508.

Reavens

+12 Unit 31 1.050 A neg unit with about $\frac{1}{2}$° of disparity and no resp. to individual eyes. Or. close to vertical. Nice.Tape Reel 3 508-540. Taped also moving a slide ruler in fornt of the monkey giving max response at about 15-20 iches. End of.reel 3 or to 573.

+12 Units 32 and 33 1.080 Similar units to the last with the same amount disp.,nil to ind. eyes and same or. Very sharp peak again.No relation between the amount of disp. and sharpness of the peak response.

? group 1

+12 Unit 34 1.114 A beautiful pos-neg cell with about ½° disparity but standing out all alone ood sharp peak and no resp. to ind. eyes. Hcx cell and or. only to a long slit around 1 o'clock. A short slit or square give a good resp. to mvt in any direction but the disparit still critical sideways and up and down. Atruly remarkable cell. In front of the board like all the disp units so far.
perhaps not marked on chart.
Videotap Ree # 4 00-34 ordinary stim. 34-67 cluge. 68-88 more ordinary stim. because audito not too good in the first part.
A small spot works in any part of the field with eyes in correct disparity, porr summation within the field. Taped a bit of that 88-104.
Cells gets very bug a nice pyramidal cell.

+6 Unit 35 1.160 A neg unit and some ahs with about ¼° disp rather critical. LH rechecked. big
Again in fornt. Nothing to indi. eyes, Orientation not very critical. Nice enou g.

+6 Units 36 and 37 1.169 Two units with new or. and with no resp. to ind. eyes . Resp. begins with eyes in reg and LE to the left or with object in plane and in front. Disp max. about ¼° rather sharp and nice. Nothing to the left of point of reg. No tape. Or.

hor 0 Unit 38 1.196 Aclose to horizotal unit with no disp. Good resp/with eyes in reg. sens. to up and down mvt. Resp. to each eye, Gr.4 but good summation between the two.
< but what about horizontal !?!

hor 0 Unit 39 1.225 A very similar unit with hor. or. Weak resp. to each eye good summation Fields in reg. Gr.4.

hcx 0 Unit 40 1.249 A big nice cell with hcx properties resp. only to a short slit. Or crital and furthermore eyes must be in register. No resp. to individual eyes. So many variables to get it all to work.

0 or (-) hcx Unit 41 1.269 A pos-neg cell with resp. with fields in reg. Weak resp. to each eye. Mapped Eye position not very critical good responses ½° to each side of reg. perhaps bet er with LE to the right. Gr.4. Or. Hcx with good resp. to short and poor to a long slit.

Unit 42 1.278 A pos-neg cell with hor. or for which up and down position is quite critical when in reg. Weak resp from RE, nil from LE . Very good summation. Horiz. or.
Lesion # 2 at 1.278 3 x 3

A lull after the lesion until 1.651 when there was a sudden injury. Presumably the electrode has been in the spup and now entered the next gyrus.

6 3/4 out 2 down. Fields of neg unresolved units moved out 6° and down about 2°.

Unit 43 1.859 Many units as we go down but poorly resolved. This unit give resp. to either eye andnot verycritcal with el eye position. Not a binocularregion.

+—0 Unit 44 1.871 A nice pos-neg unit and rich hash giving poor resp. to ind. eyes and exc. with eyes in reg and LE to the left over a range of about ¼°/ Gr.4. Or. Slit .Cx.

+—0 Unit 45 1.879 A unit with slightly diff. or. but otherwise similar to the last. Resp. over same range of eye pos. Good resp. to LE and nil to RE or some weak Summation clear but not tremendous because at times LE resp, quite strong. Clear diff. though and RE strongly inh. the LE when out of reg.

+—0 Unit 46 1.949 A big nice cell with rel large field. Rel. good resp. LE, reasonable from RE. Gr.3. Exc. summation with eyes in reg. or slightly to the left with LE likes all the others in this region.
U
+—0 Unit 47 1.964 A nice unit resp. to LE but not too right but still showing interaction and some summation but mainly inh. from RE when eyes not in reg/ or slightly to the left. with the LE. Or. Smaller field Cx.

Unit 48 2.060 A unit with rather uninteresting binocularproperties. Good resp. tp LE, nil from right eye and little inhibition from that eye in or out f reg. Some but nothing striking. Postion the same .Orientation 10:30. Not mapped. "ich activity.

Unit 49 2.075 Another unit resp. to LE and not right,some summation, not very critcal with eye position. Intersting that all these cells have favored the LE.

Similar units as we go down of moderate binocular interest.

Le#3 Lesion at 2.158 3 x 3

We go down a bit further but are tired and decide to go home. Time 3 a.m. before perfusion etc.

Electrodes 118 & 88

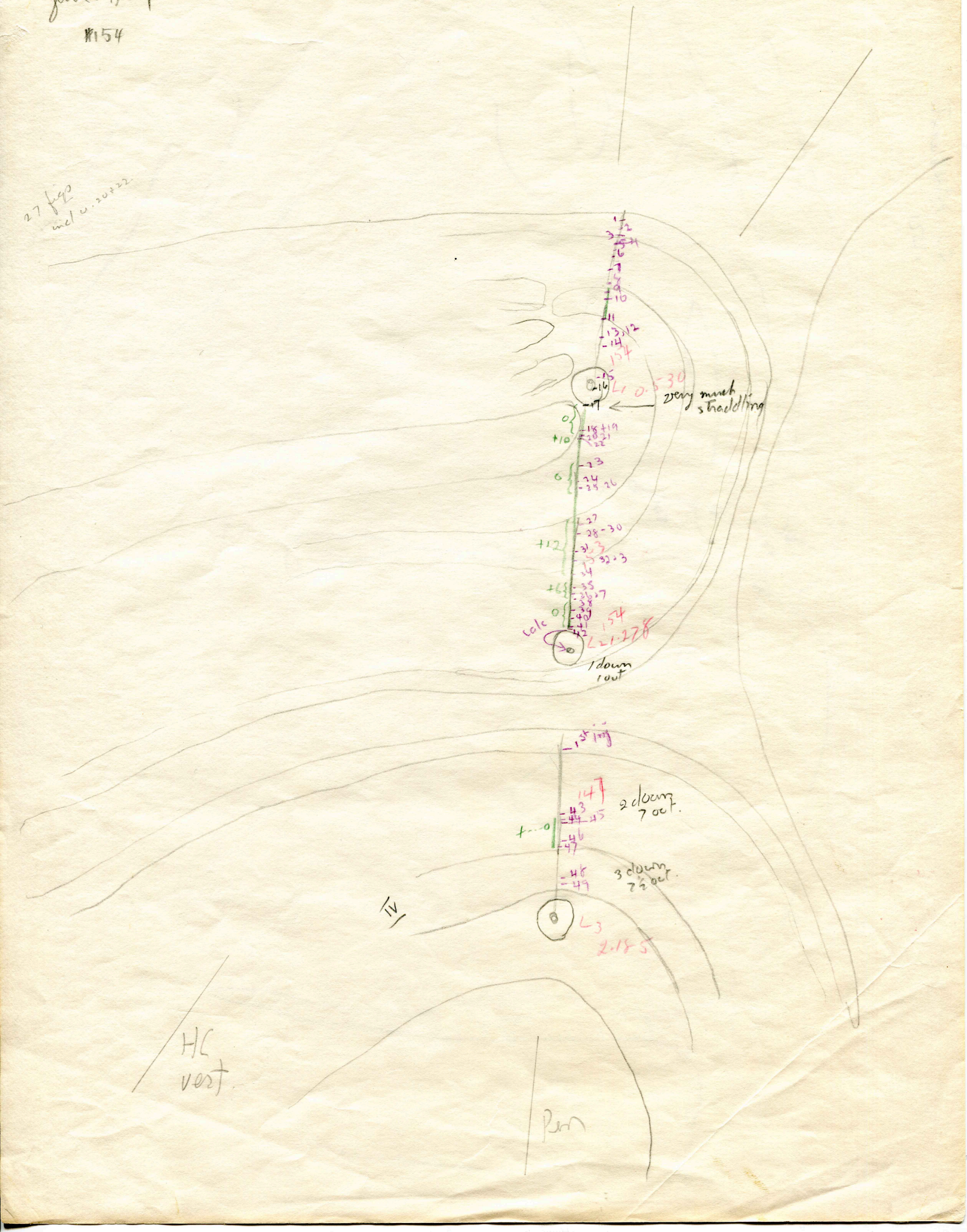
Summary before final anatomy: Good penetration into 18 in front of 17 and down bank, with lots of binocular cells; finally into 18 below with more binoc cells this last set mostly asymmetrical tyep, zero to near, with left eye dominating & right giving nothing except inhibition. The first binoc units were 1 1/2° down and 1/2° out, so that settles that problem pretty well. When anat comes might look carefully at cells in the region to see if patches with binoc stuff show any differences.

A couple of nice color cells in 18. A few binoc cells with horiz rf orientation with critical horiz positioning.

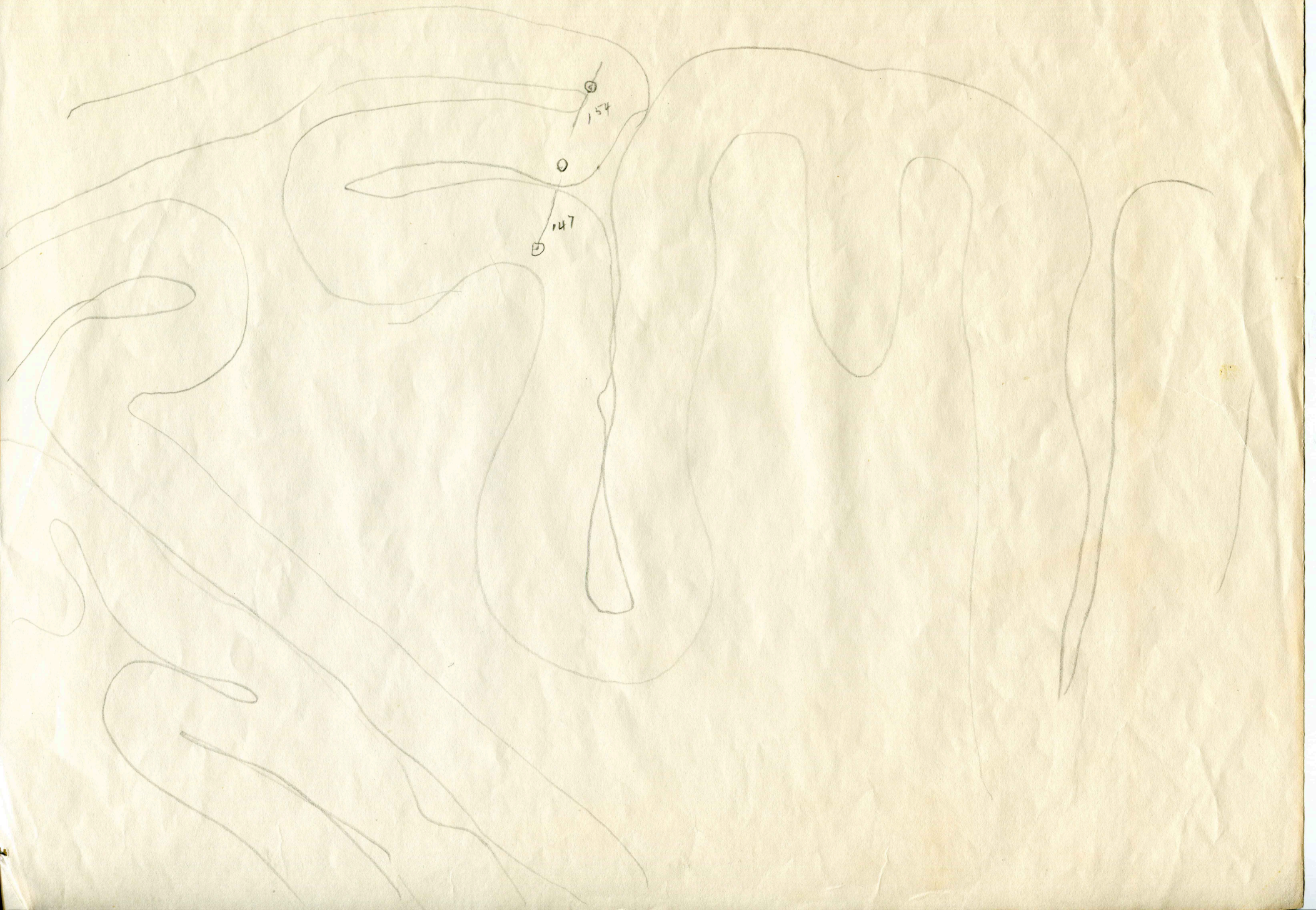
Jun 24/69.

#154

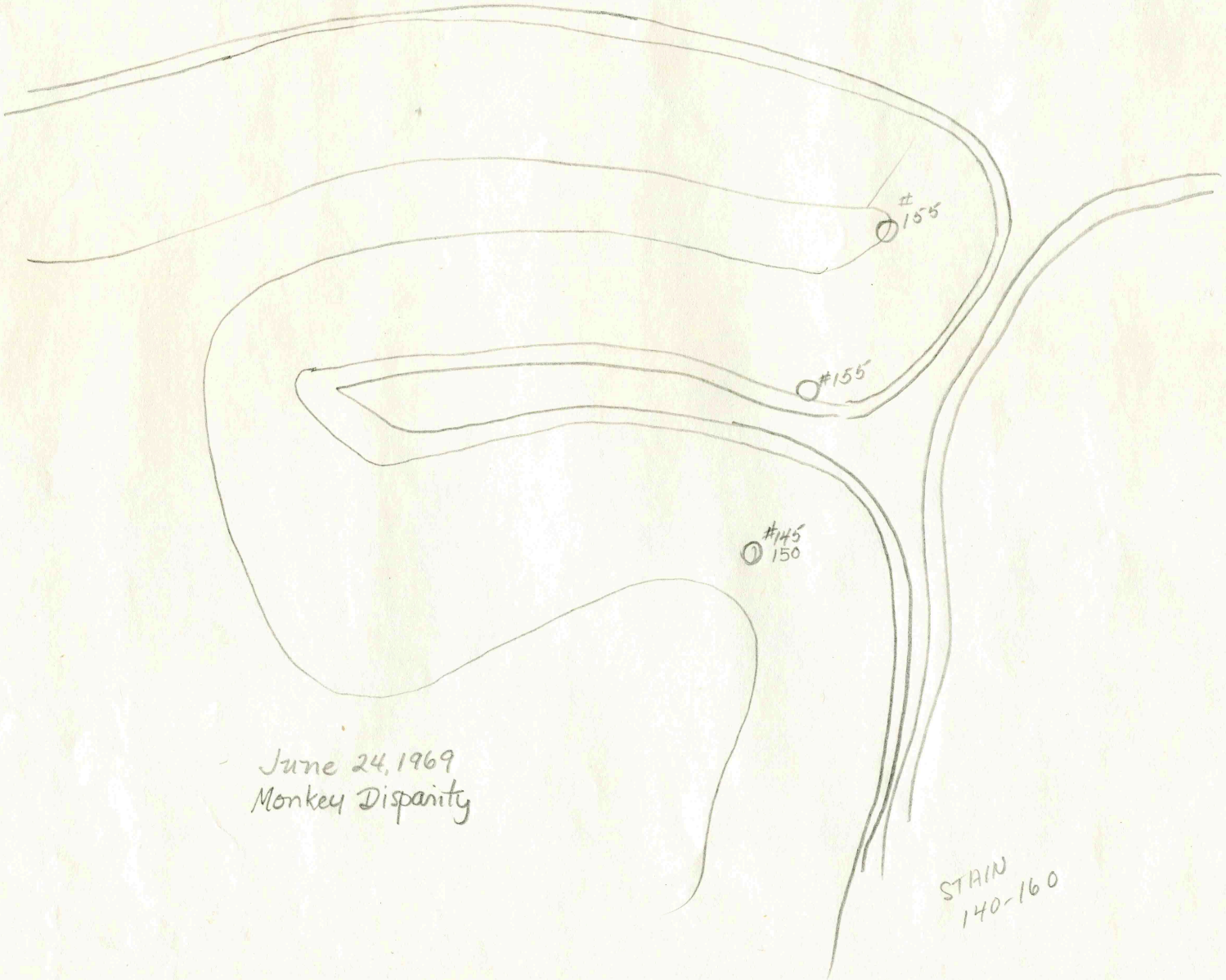
27 figs incl u. 20+22



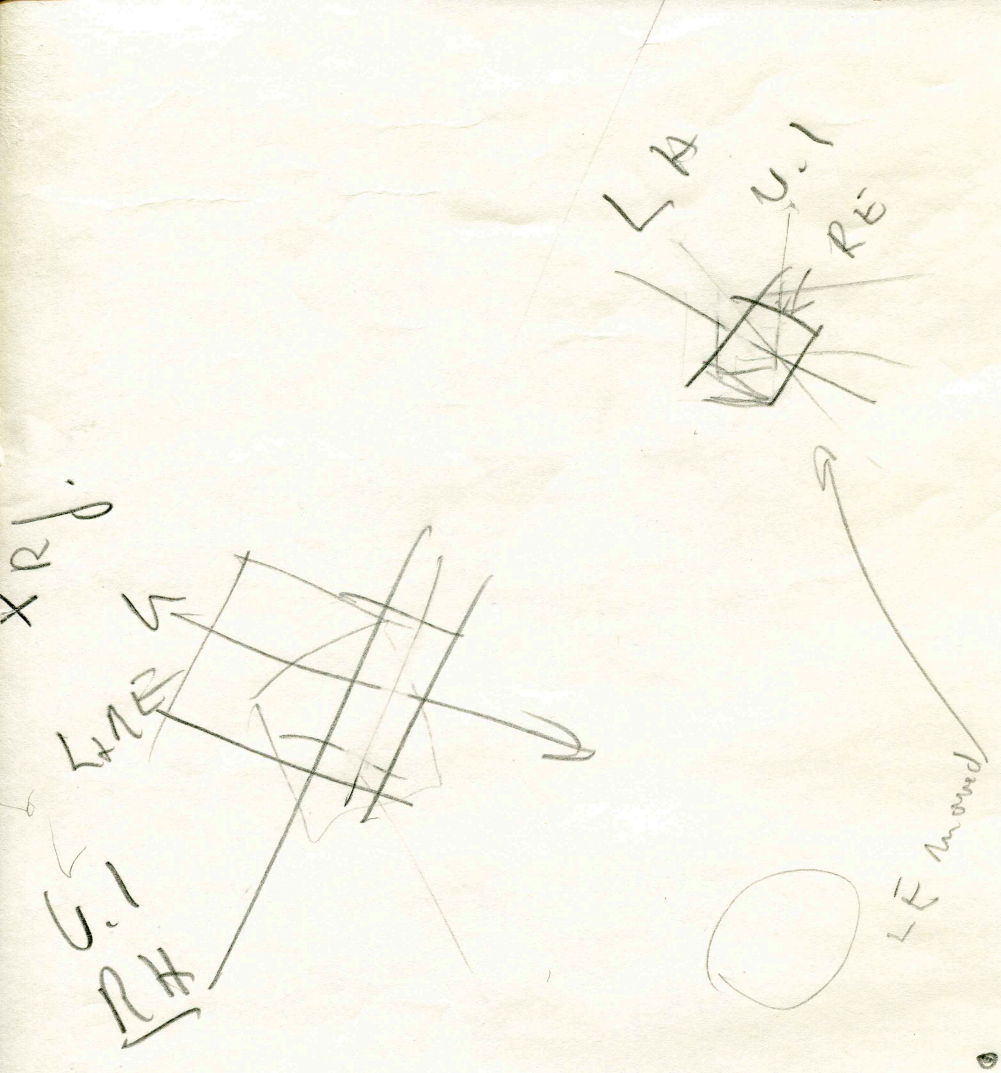
June 24/69 L.P.
154.



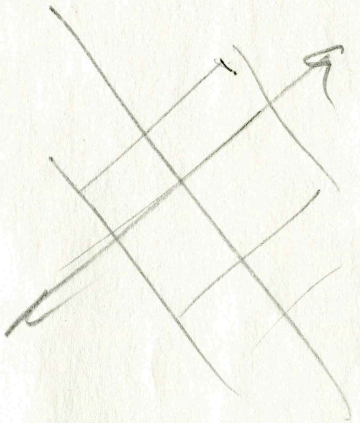
12 lat.

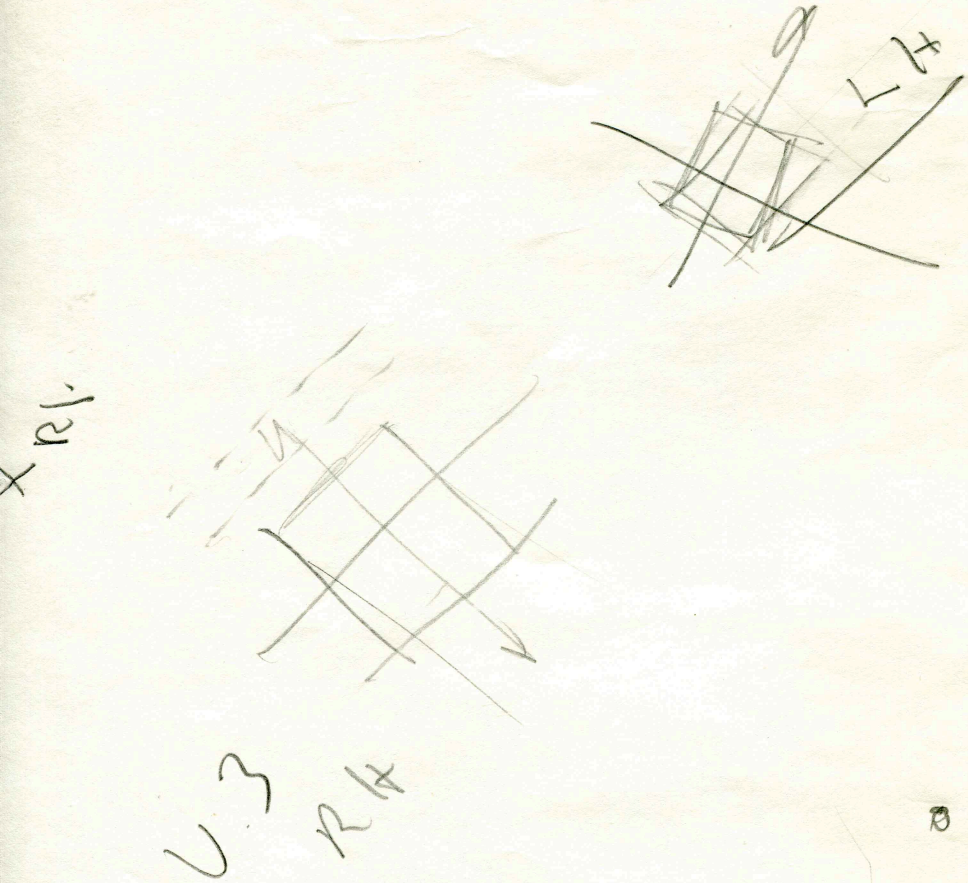


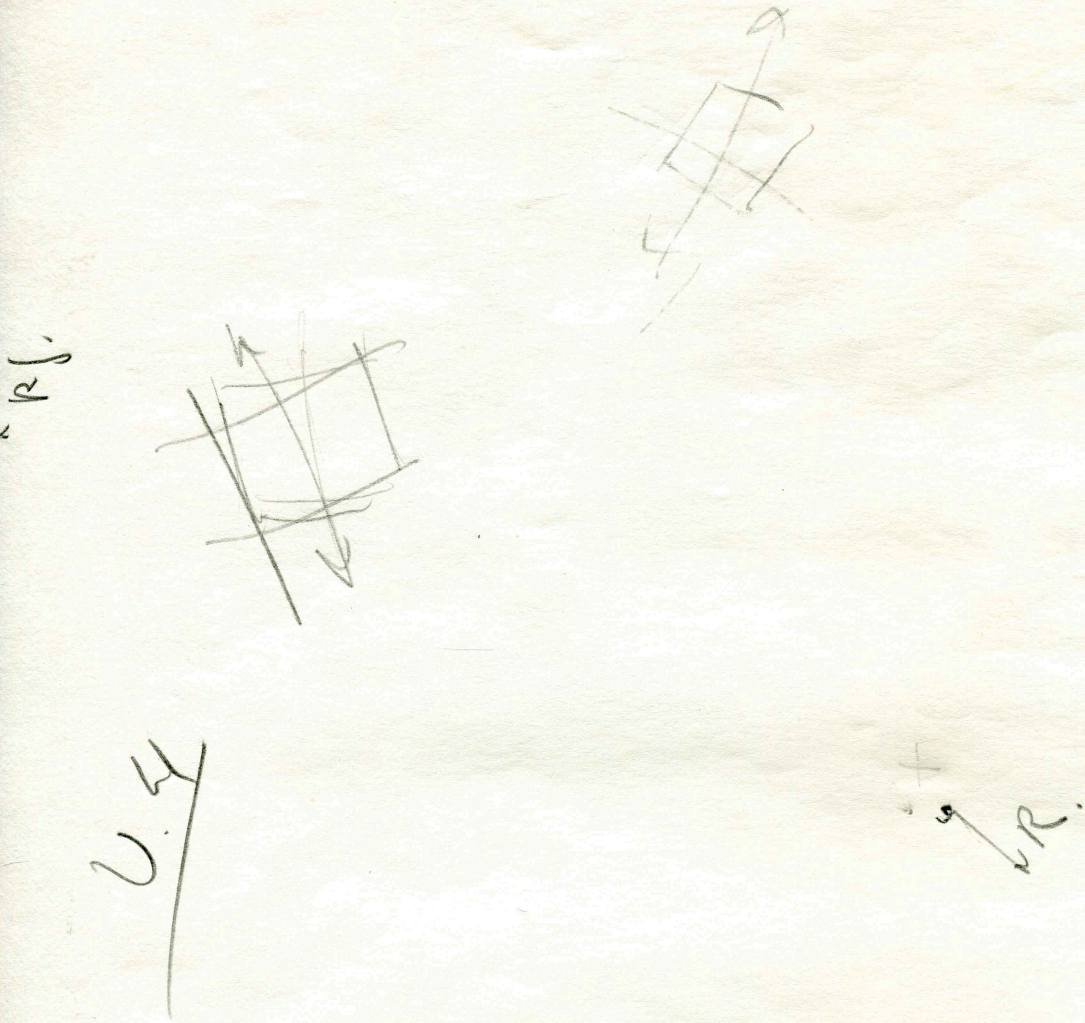
June 24, 1969
Monkey Disparity


LH
U.1
RE
XRJ
LHRE
U.1
RH
LE moved

u. 2

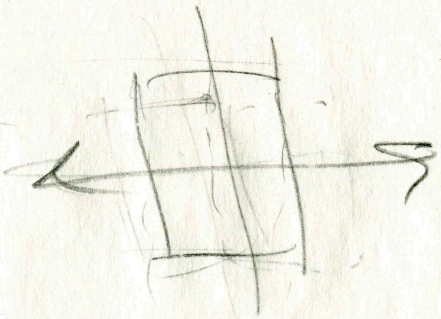


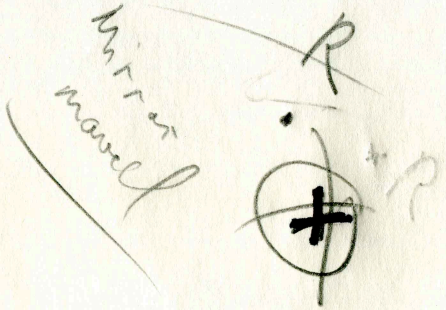

LH
RH

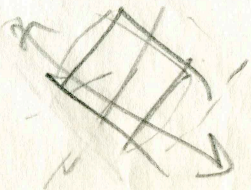

U.4
R.

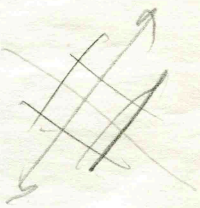
.rf corrected
for strip or
tag cell

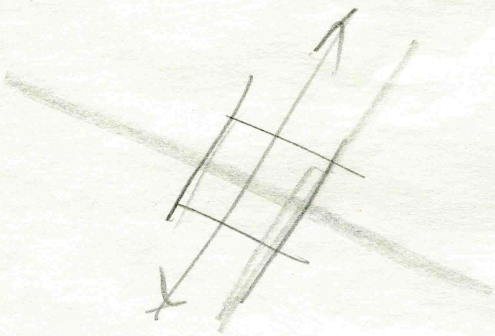
U.11

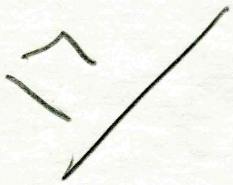












x Rj.

18

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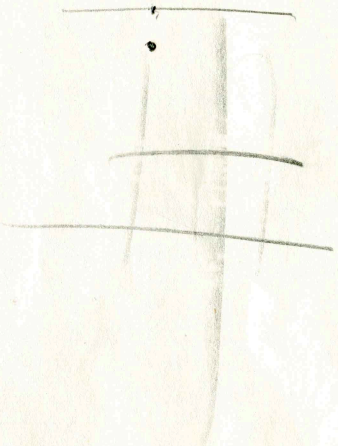

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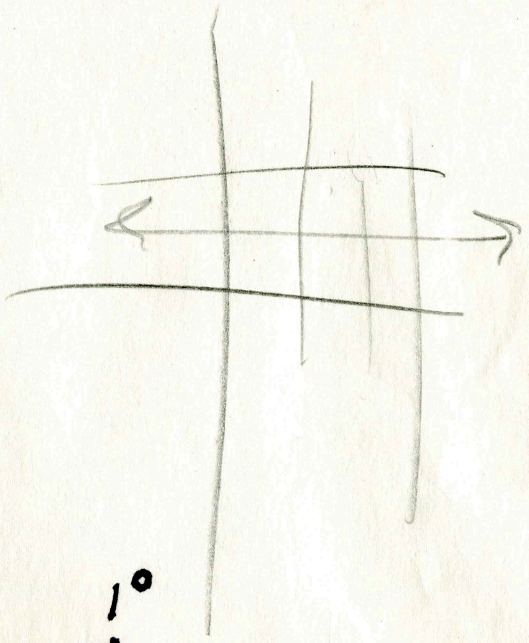
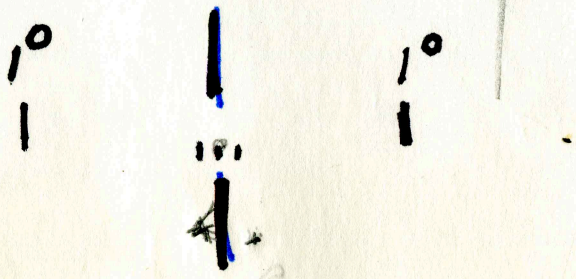
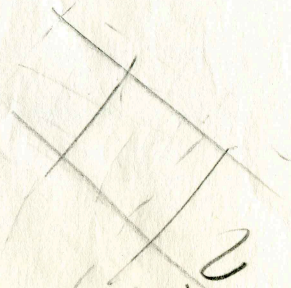
Rj.

V. 20 – 21







V. 2

L 4.

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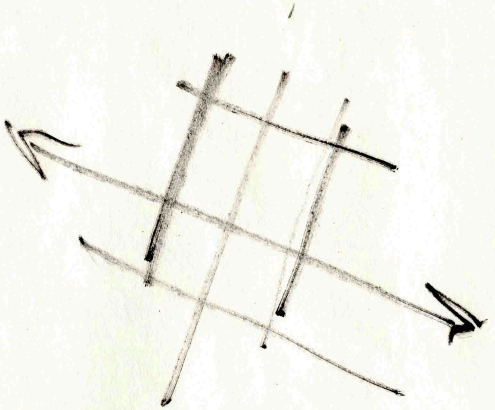
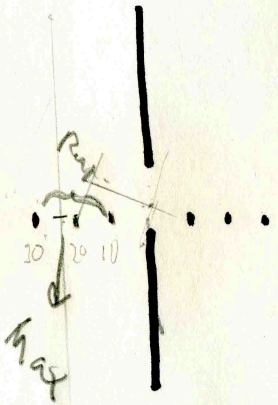
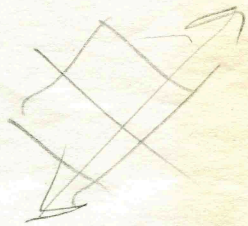


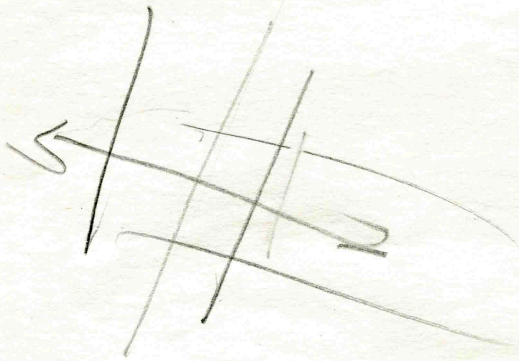


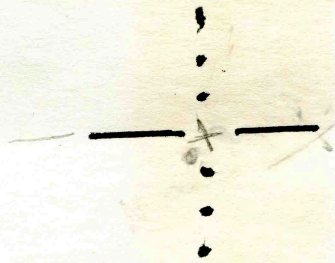
1" = 25 mm 2.5

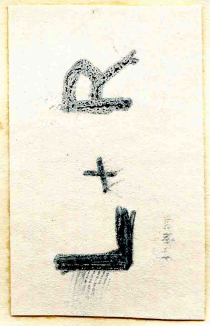
Field 20 mm

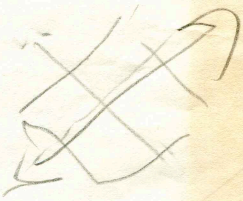
1" = 60 mm

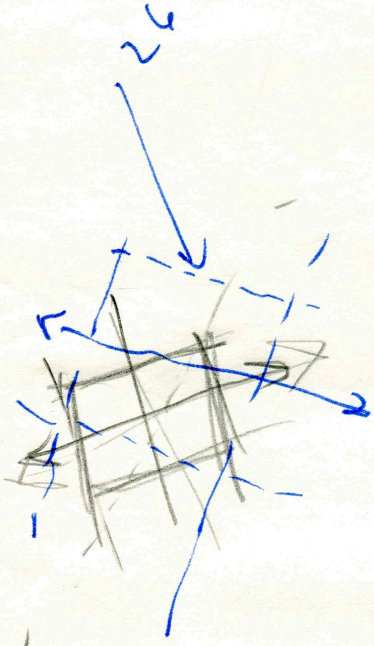








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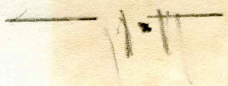
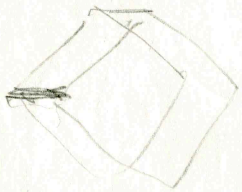
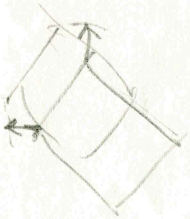
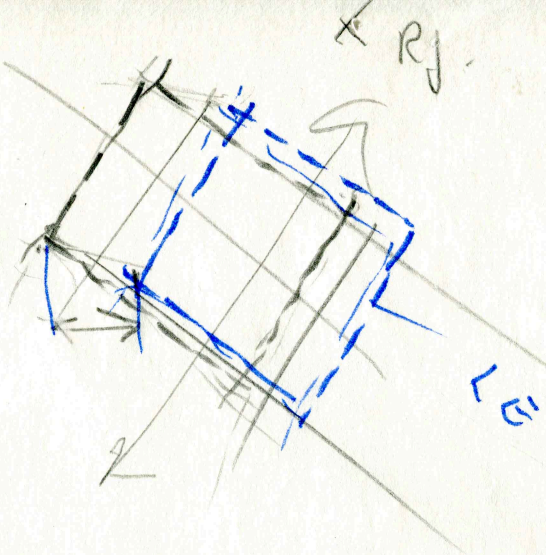


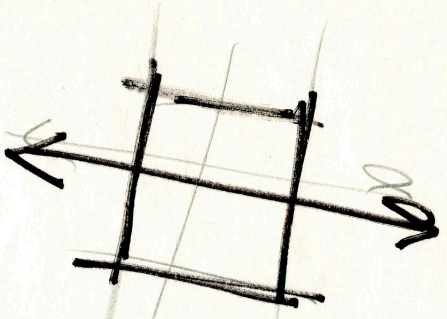


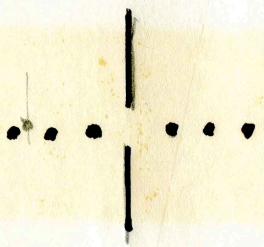


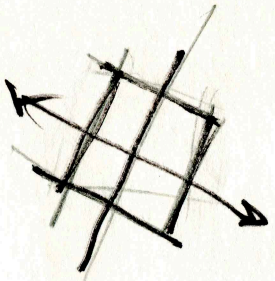
28-29-30

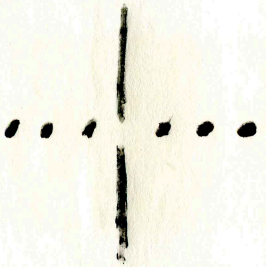


L + R









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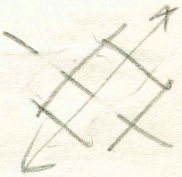
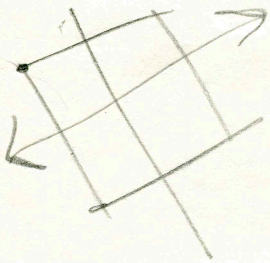
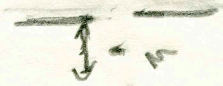
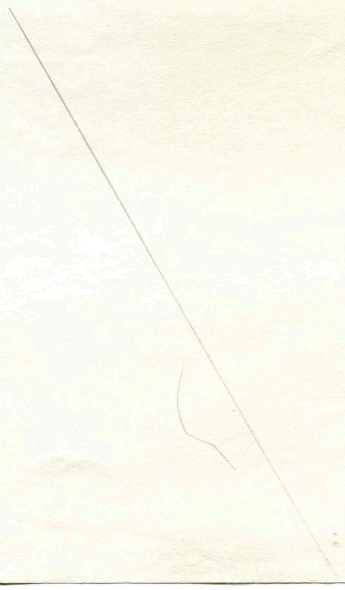


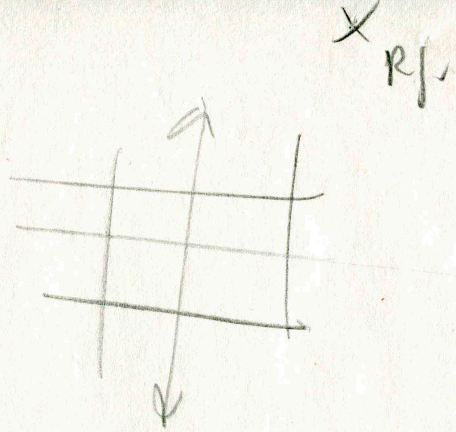




36-39



38



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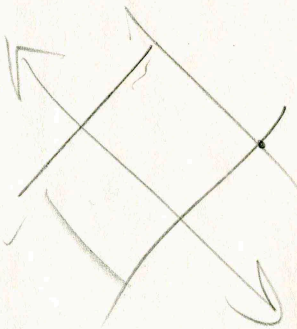
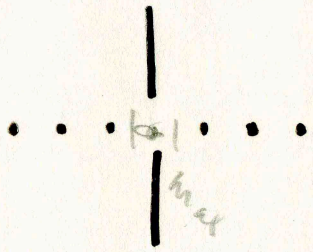
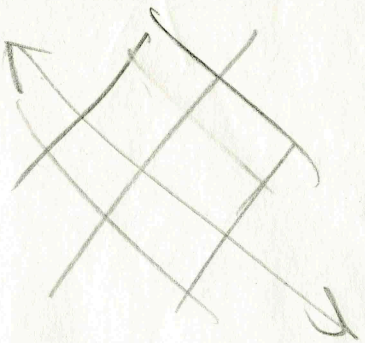
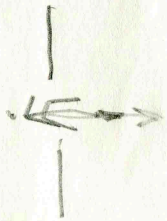




L+R





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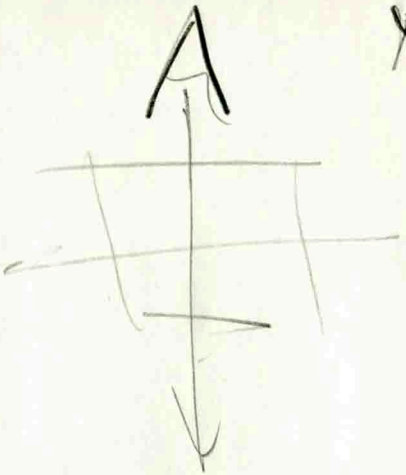
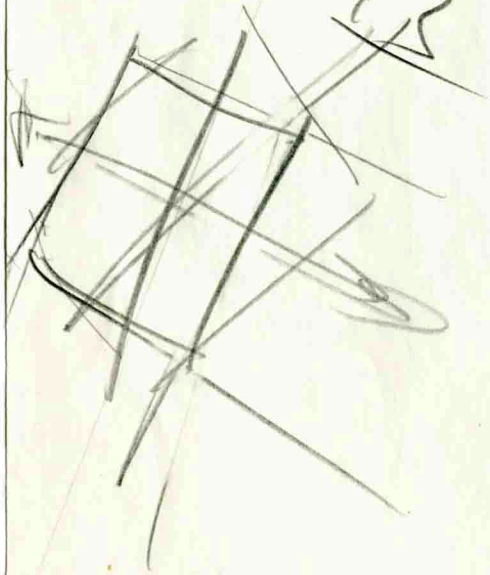
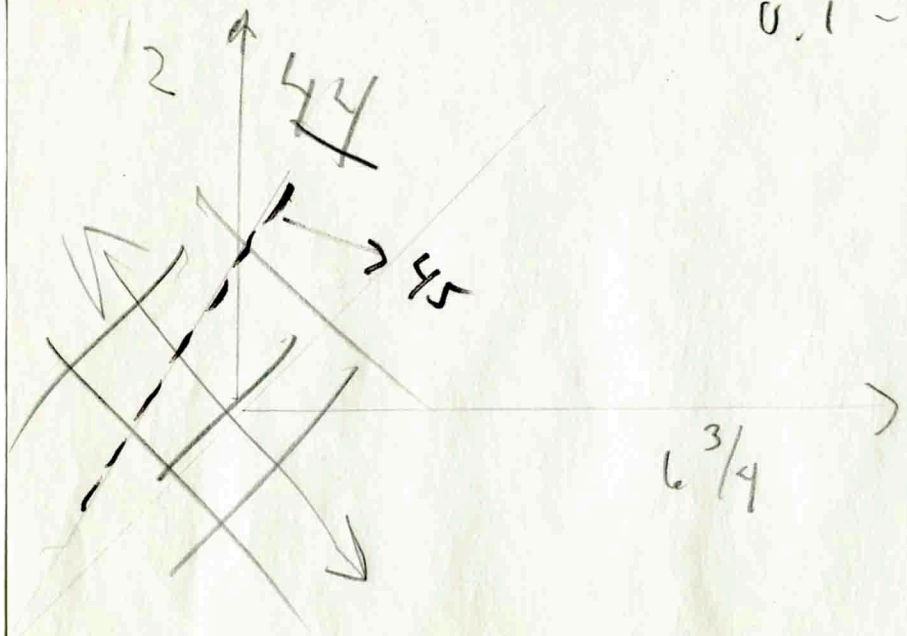


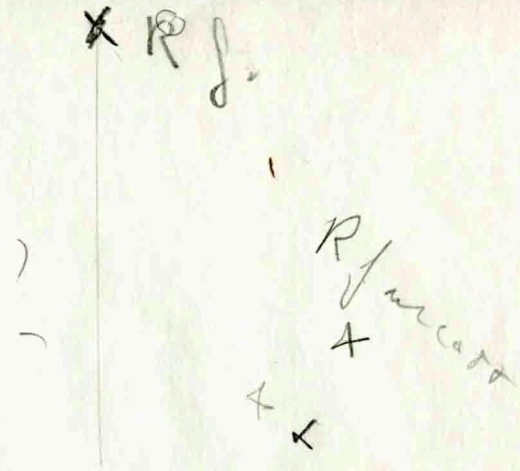
XRg.

43



0.1 - 44 supe

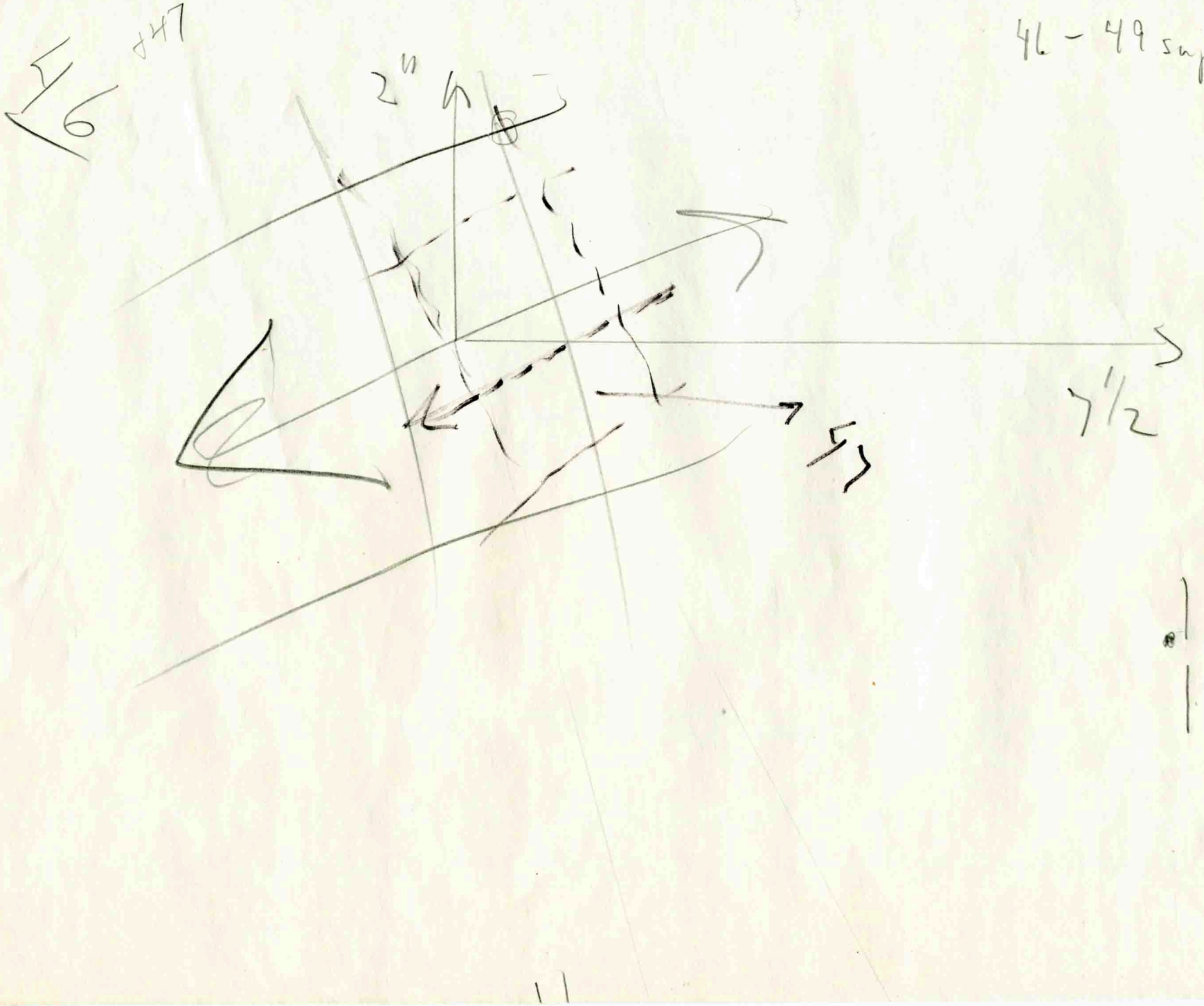




11

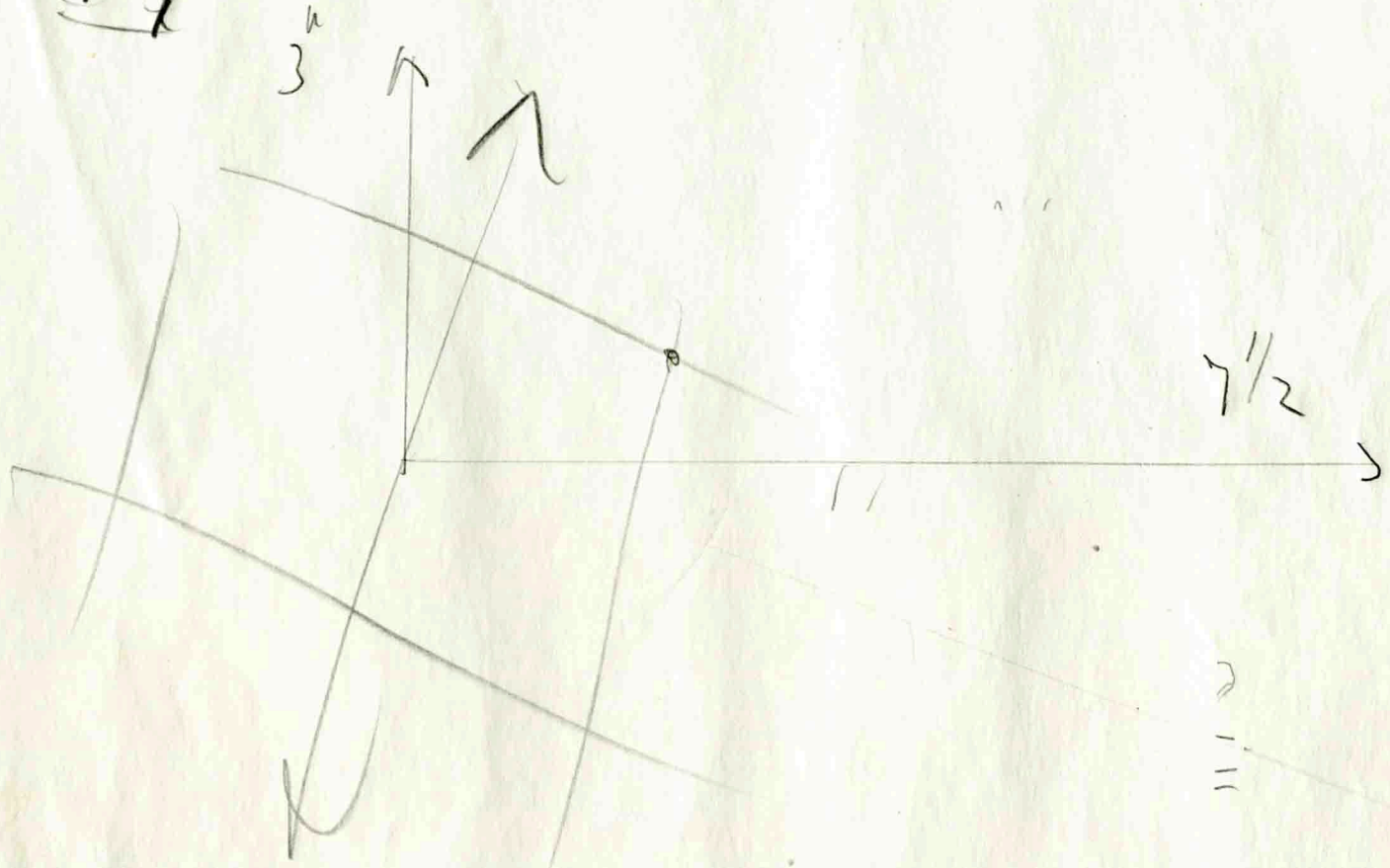
= = 101

46 - 49 supe

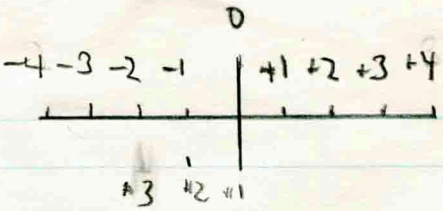


46 – 49

49



June 24, 1969



U.20

#1. Point 0 2 times.

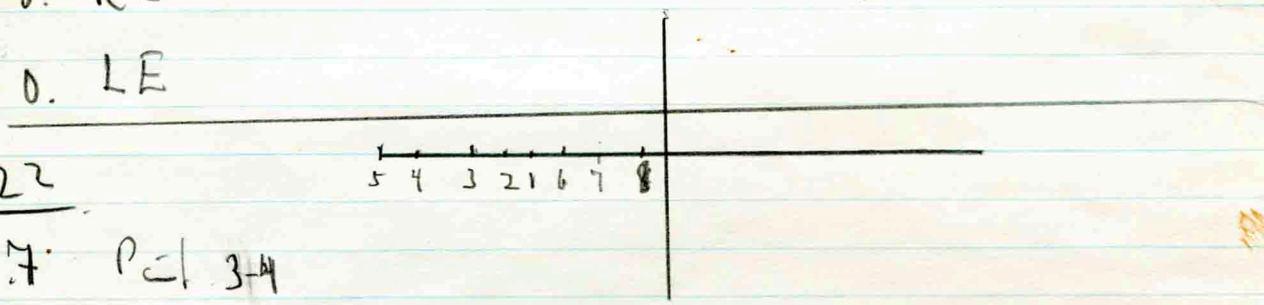
#2. Point -1
-2.

#3. Path +1
-1 +2

#4. Pt +1,5
+2

#5 Pt -0,5
-2

#6 0. RE
0. LE



U.22

#7. Pt 3-4
3

#8. Pt 6
7

#9 Pt 8
Pt 1

#10 RE Pt 1
LE

#11 Pt 2
3-4

#12 P. 2
2.

#13 P. 6-7
1

#14

#15 P. 3
P. 5

KE 10 X 10 TO THE CENTIMETER 46 1512
18 X 25 CM. MADE IN U.S.A.
KEUFFEL & ESSER CO.

Cell 22

tape 3
counter

— 354

1	161	10	16.1
2.	79	4	19.7
3	60	6	10
4	4	4	1
5	0	2	0
6.	96	6	16
7	13	6	2.2
8	2	4	0.5

Separate ☐ nil

85 4

130 6

21.7

H/w

June 24, 1969 Monkey 1 pen Disparity

		p, RH
June 30, 1969	- 70%	L. 0.530
July 1 "	- 95%	L. 1.278
July 2 "	100%	L. 2.156
July 3 "	E/A	
July 3 "	6%	

June 24, 1969
1 pen RH. Monkey
Disparity.
Nissl.