1987 April 28

Est of wt. of base

3 × 3 × ¼ MS. L. 0·41 lbs/in.

B.1	2 off	3×3×¼ L. MS. 3'-1" long.	@,	30·2 lbs
B2.	1 "	----		10·2 lbs
2a	1 "	-- +		12·8
B3	2 -	.— × 16"		13 lbs
B4	2 -	---- × 12		9·8
B5	1 off	9 × 9 × 5/16	*	7·2
B6 not included in *				
B7 & B8 are not used				
B9.	3" × 3" × 1". — 1 off.			2·6
B10	2 off	use 15 × 8 × 5/16	*	21·3
B11 not included in *.				
B12.	— 1 off.	12" × 25 × 5/16	*	26·6
B13 & B14	2 off each.		day	2·0
B15	2 off	~~Mild~~ MS 2 × 2 × ¼		1·1

Allow say 2 lbs for nuts & bolts. 2·0

12 items Σ = 138·8 lbs

11

127

1987 May 5

SUMMARY OF BOLTING etc FOR ALL ITEMS. (1 OF 2)

M12	NUT	S.S.		2 OFF
M8	SHCS	SS.	50mm long	2 "
M8	NUTS	"		2 "
M6	SHCS	"	35 mm	4 "
"	"	"	25 "	6 "
"	"	"	18 "	40
"	"	"	16 "	173
"	"	"	12 "	38
"	"	"	10 "	15
"	"	"	8 "	174
M6	4 NUTS	"		
	WASHERS	450 OFF		
M4	SHCS	SS.	20 mm	10 OFF
M4	"	"	10 mm	140 "
M4	WASHERS	150		

P.T.F.E. 1/8" THICK. ≡ 6" x 6"

Foundry bolting — all D items.
T9, T11 = PTFE.
Nuts & bolting
Other items.

Matl req'd. (additional to items shown on drawing). 1987 May 6

(2 of 2)

1¼" × 1¼" × 3/16" A.A. L

ITEM	No OFF	LENGTH/ITEM	TOTAL LENGTH
~~T3~~	~~4~~	~~7 3/8"~~	~~30"~~
T5a	4	1"	5"
T5b	4	1"	5"
* T7	4	~25"*	100
T13b	4	2"	9"

———"———

1"×1"× 3/16" A.A. L.

T3	4	7 3/8"	30"
T10	4	7 3/8"	30"
T12	8	3 1/4"	27"
T18	4	8"	33"
T22	4	14"	57"
T(25a & 25c)	4	1½"	7"

3/16" A.A. plate.

T8c.	2	10" × 11 3/8"

1/10" AA plate

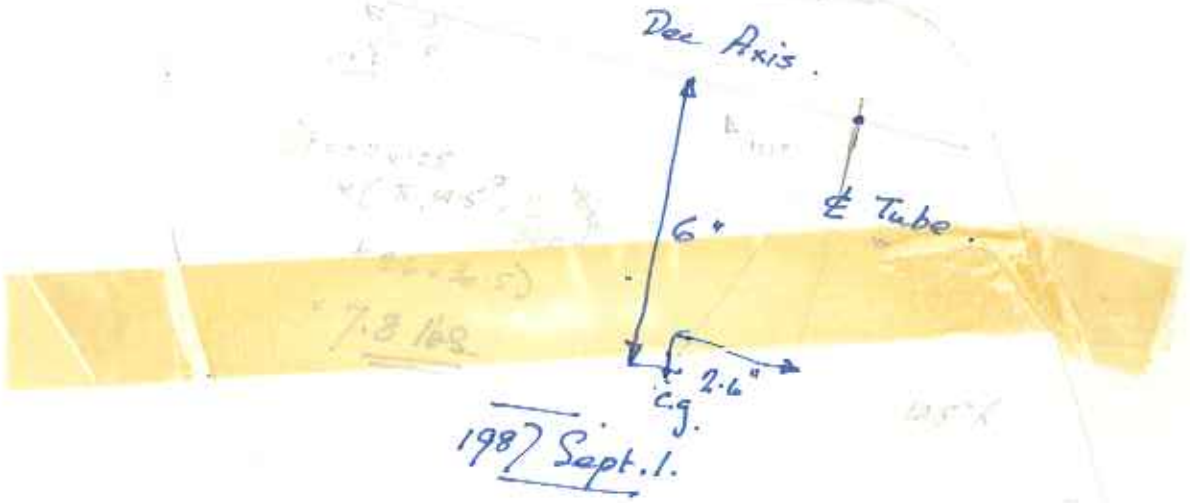
T4	8	3" × 1¾"
T14	2	10 1/8" × 7½"
T20	4	

1/16" AA plate.

*	T8b.	2	10" × 13"*
*	T8a	2	9 7/8" × 24 3/8"*
	T15	2	10" × 14"
	T21	2	10 1/8" × 6½"

* Subject to f.l. of mirror.

Counterbalancing requirements. 1987. Sept. 1.



1987 Sept. 1.

The two surface plates currently being used to balance tube weigh 5 Kg say 11 lbs.
Mirror weighs say 3.5 kg say 7 lbs.

4.5 × 4.5 = 20.25 .62 lbs.

0.70 × 11 = 7.7 lbs. 11 squares. 4 3/4" sq × .110.

Dec. drive at say 7 lbs.

$$11 \times 4.75 \times 4.75 = 10 \times 4.75 \times x.$$

$$x = \frac{11}{10} \times 4.75 = \begin{array}{r} 4.75 \\ .475 \\ \hline 5.225 \end{array}$$

Say 5¼" × 4 3/4" 10 off.

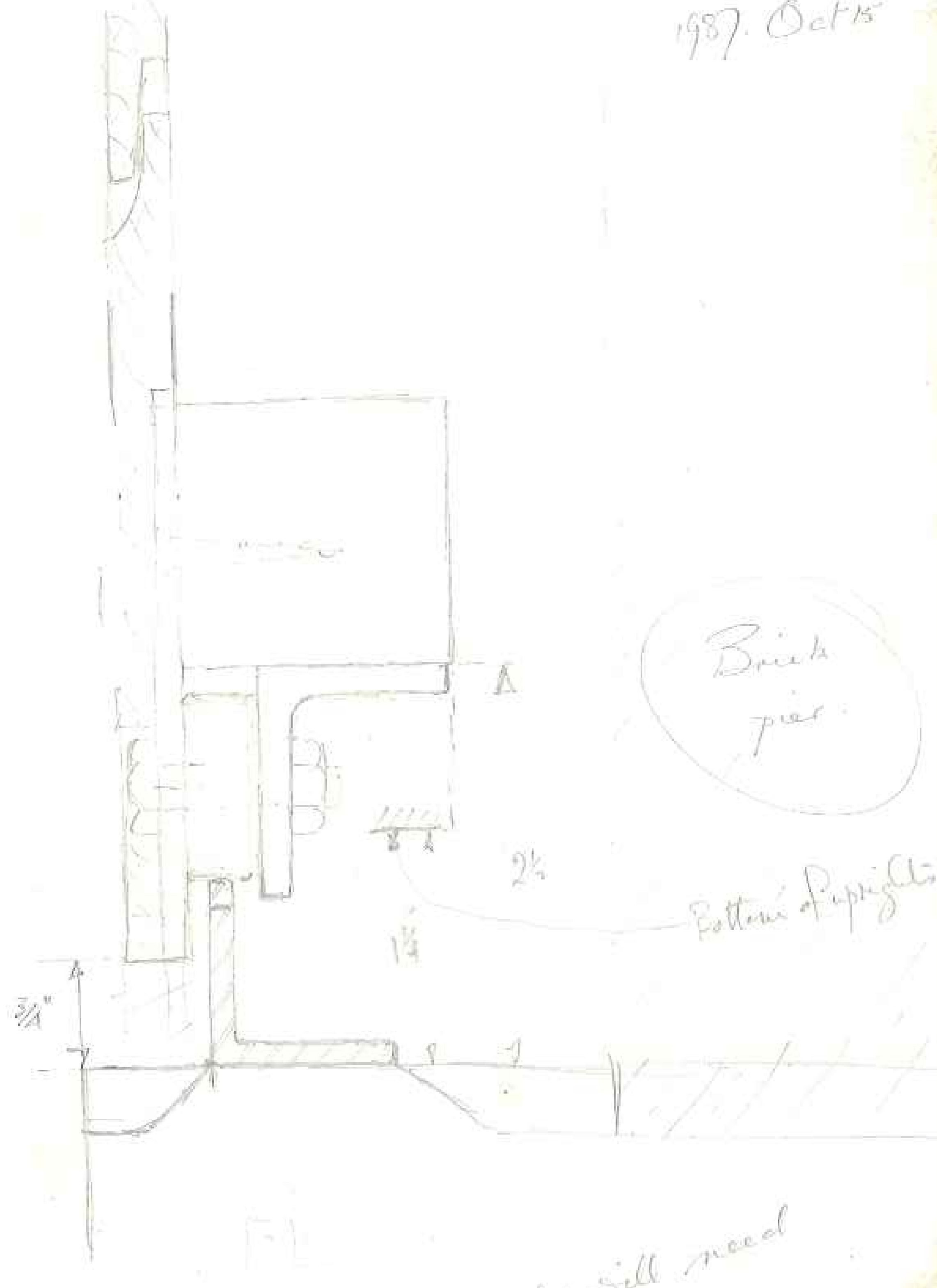
Telex No: London 885811
(A/B Seepeelond Lon)
Inland telegrams
Seepeelond Telex London

Foreign telegrams
Jesse and London EC2
Telephone (switchboard)
01-920 8000

Registered office:
Britannic House
Moor Lane
London EC2Y 9BU

Registered in
England
No: 856809

1987. Oct 15

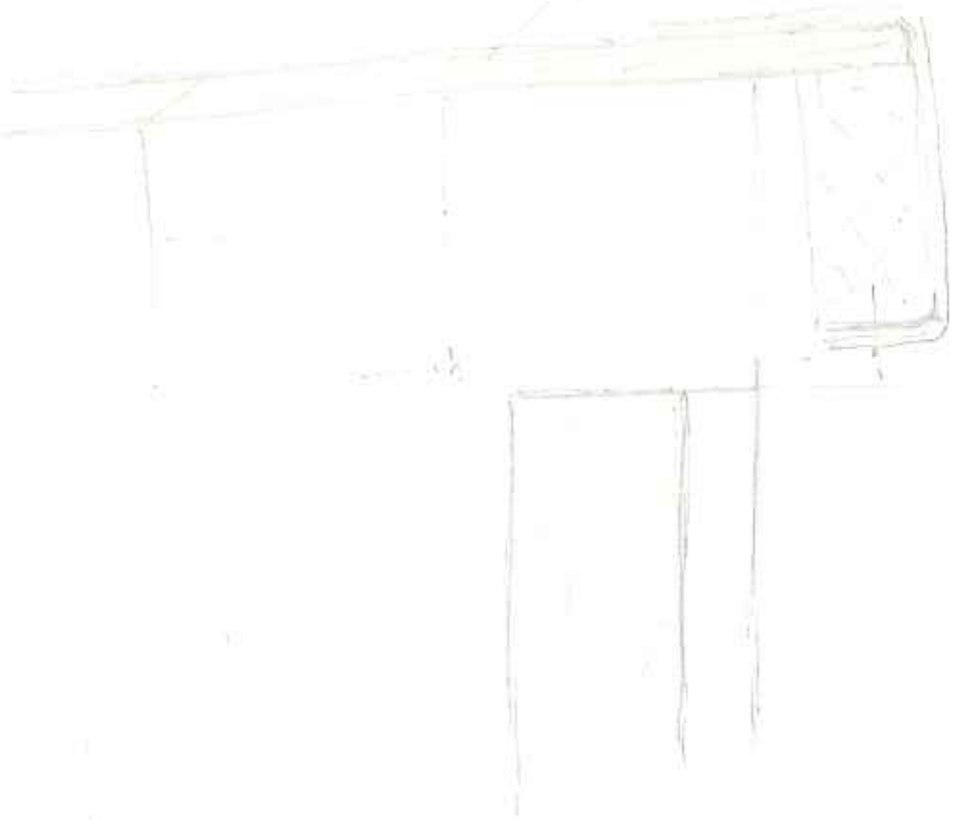


N.B Door 9 rear of hut will need small cut-out to clear L's.

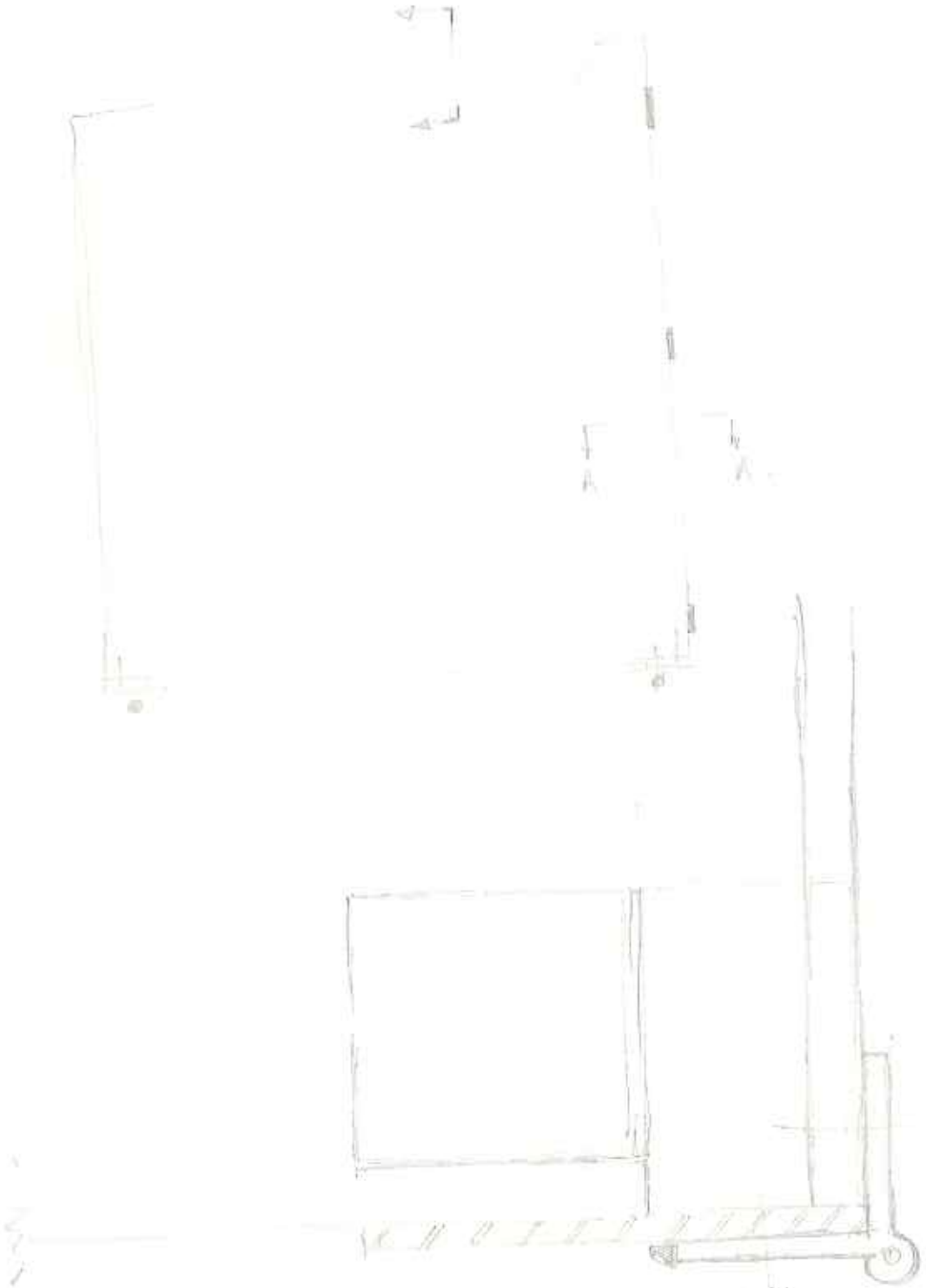
What is most straightforward of casting slab, & fixing angle Iron runners?

1987 Oct 15

½" ply roof + 2 layers roofing felt.

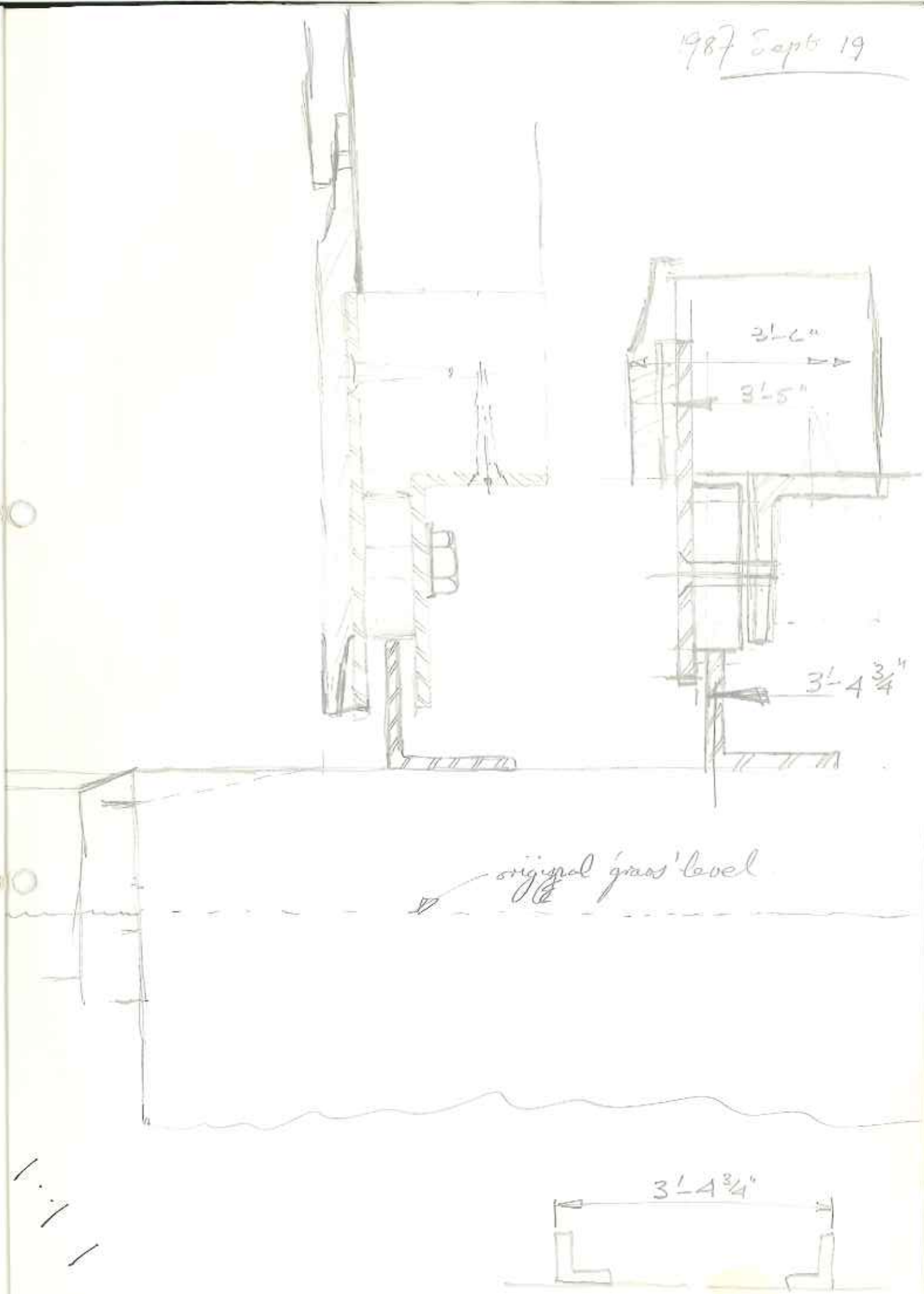


1987 Oct 15.

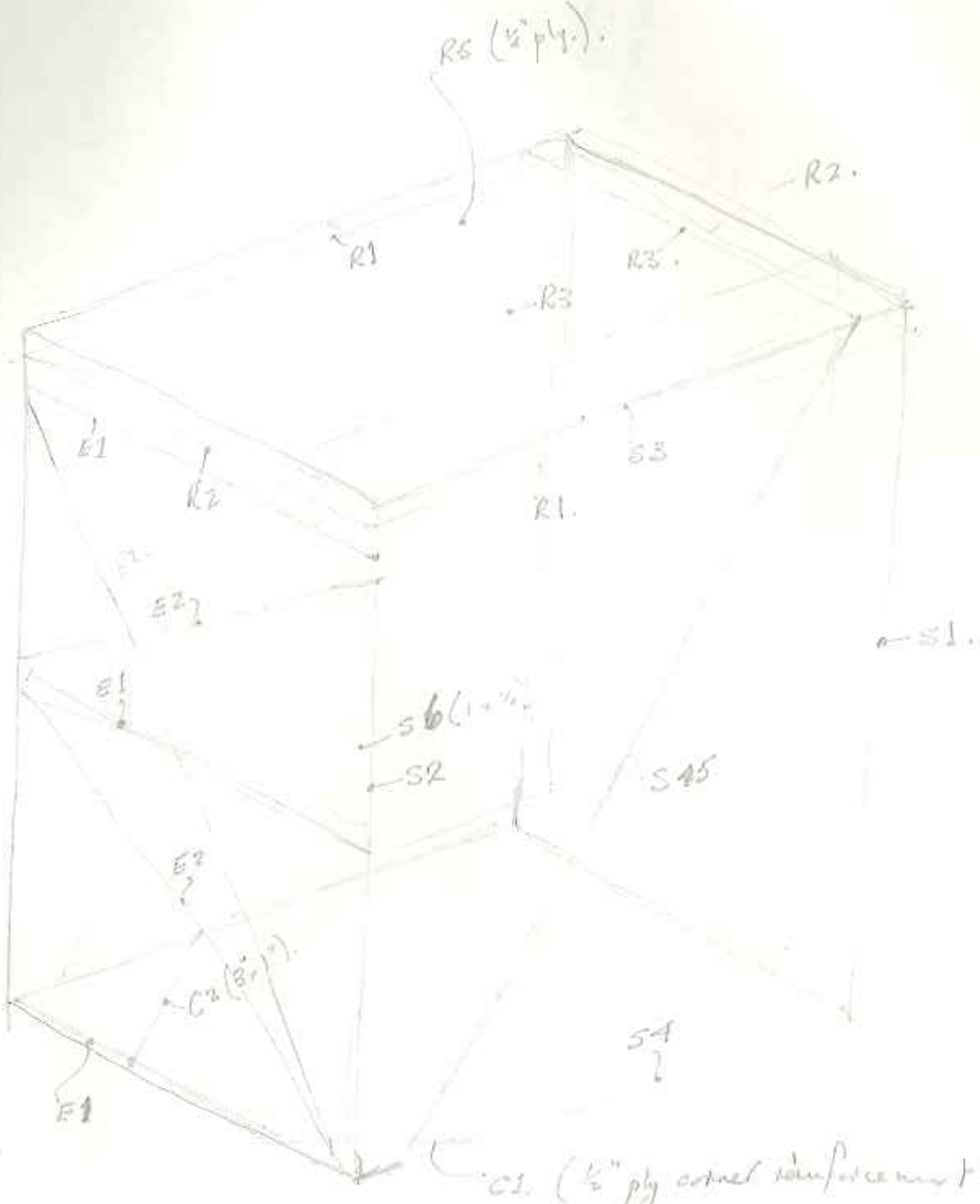


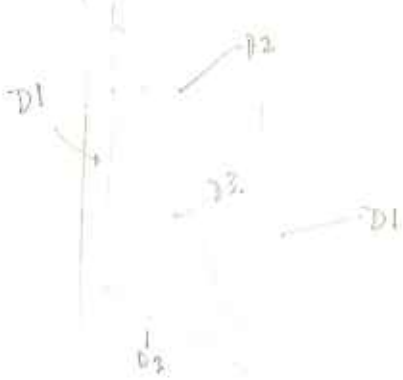
Nom. 1/4" plywood.

1987 Sept 19



1987 Oct 15


R5 (½" ply).
R2.
R1
R3.
R3
E1
R2
S3
R1.
E2
S1.
E1
S6 (1-½"
S2
S45
E2
C2 (3"x3").
S4
E1
C1. (½" ply corner reinforcement


D2
D1
D3.
D1
D3

A.P.T. ~~Sled~~ Run-off Sled.

1987 Oct 15

Timber mag to	No. off	Nom size	Finished Length	lbs (15 lbs/cu ft)
S1	2	2 x 2	5'-7"	1.8	10.7
S2	2	"	5'-4"	1.8	10.2
S3	2	"	4'-4"	1.5	8.3
S4	2	"	4'-3"	1.5	8.1
S5	2	3" x 1"	7'-0"	2.4	10.5
S6	2	1" x ⅓"	5'-4"	1.8	1.1
R5	1	¼" ply.	4'-6" x 3'-9"	1 SHEET EXT	15.8
R1	2	1" x 1½"	4'-6"	1.5	3.4
R2	2.	1" x 1½"	3'-9"	1.2	2.8
R3	2	2" x 2"	3'-6"	1.2	6.7
E1	2	2" x 2"	3'-6"	1.2	6.7
E2	1	3" x 1"	6'-3"	2.1	4.7
~~[illegible]~~	~~1~~	~~3" x 1"~~	~~2'-6"~~		
C1.		½" ply.	8" x 12"		1.6
C2.		3" x 1"	2'-6"	1M.	1.9
D1	2	3" x 1"	5'-6"	1.8	
D2.	2	3" x 1"	3'-6"	1.2	36.0
D3	1	3" x 1".	~~6'-0"~~	~~2.1~~	

Shiplap 3/8" finished Thickness

Door (D) 3'-6" wide x 5'-6" high — 27

Side (S) 2 off 4'-3" wide x ~5'-7" high. — 66.7

End (E) 1 off 3'-5" wide x 5'-4" high. — 25.6

Roofing felt - hinges etc. say — 12.8.

260 lbs.

DELIVERY NOTE

111523

VAT REG No 205 4347 90

Catford Timber Co.

TIMBER MERCHANTS

161 RUSHEY GREEN
CATFORD, SE6 4BD
Telephones 01-698 1271

TO William Smith DATE 29-10-87

ORDER No

Quantity	Description
	4 | 1-2 4 | 1-8) 2x2
	4 | 1-5) PAR
	2 | 1-8 2 | 1-2) 3x1
	2 | 1-5) PAR
	2 | 2-4 2 | 2-1
	2 | 1-0 2 | 1-2) 3x1
	2 | 1-8) PAR
	19 | 2-4) 5/8 x 4
	19 | 2-7) S | LAP
	7 AVENUE RD
	Bexley Heath

DELIVERY DUE THURS A-M

RECEIVED BY

All goods are sold subject to the following terms:- The goods are not tested and no warranty is given or shall be implied that the goods are suitable for any specific purpose. In the event of any claim seller's liability shall in no circumstances exceed the invoice price of the defective piece(s).

Q. Does J.W. use an end of side window PMT. 1987 No. 8.

PMH. (No eyepiece). ~ £150.

Fluid light guide (3M). + adapter (for PMH) ~ £150.
(3mm.)

Filter assembly + housing for PMT. ~ £250.

Tube £140 + vat 9924 EMI Bi-alkali photo-cathode.

Brass + divider chain ~£20

Purchase from N. Walker.

Does output signal cable from From filter assembly housing end in special socket – if so is this included in one of the above items.
[It surely must be if PMT housing is sealed for drying purposes.].

Pre-amplifier discriminator. As per J.W. design. 12V Supply reqd

Borrow J.W's & copy.

Parall interface & counters & Timers — a la' J.W. Timer part of system most likely not req'd.
Peter will prepare diagram & list of components.

HT supply } As per J.W. As yet we have no diagrams.
LT " } Could borrow & copy.

Andy H. IAPPP. No. 27 HV Power Supply not sure but thinks ~ 200/300 mA
Has Andy a printed circuit board.?
Power consumption on 12V power supply.

2½" × 2" "

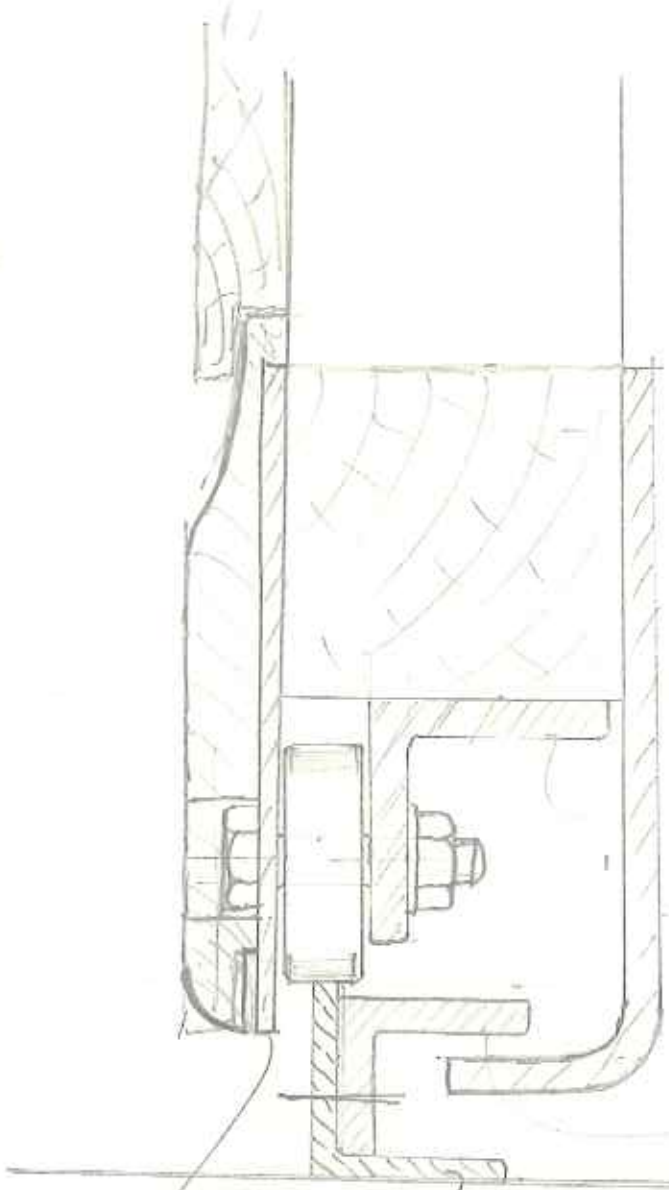
250 → 900 drawing "

Circuit Board Layout 72.26A £36

14/500

Copy of J. Watson discriminator circuit.
to Andy Hollis.

1987 No 19



1¼ x 1⅛" x 3/16" AA. (4)
(4" long)

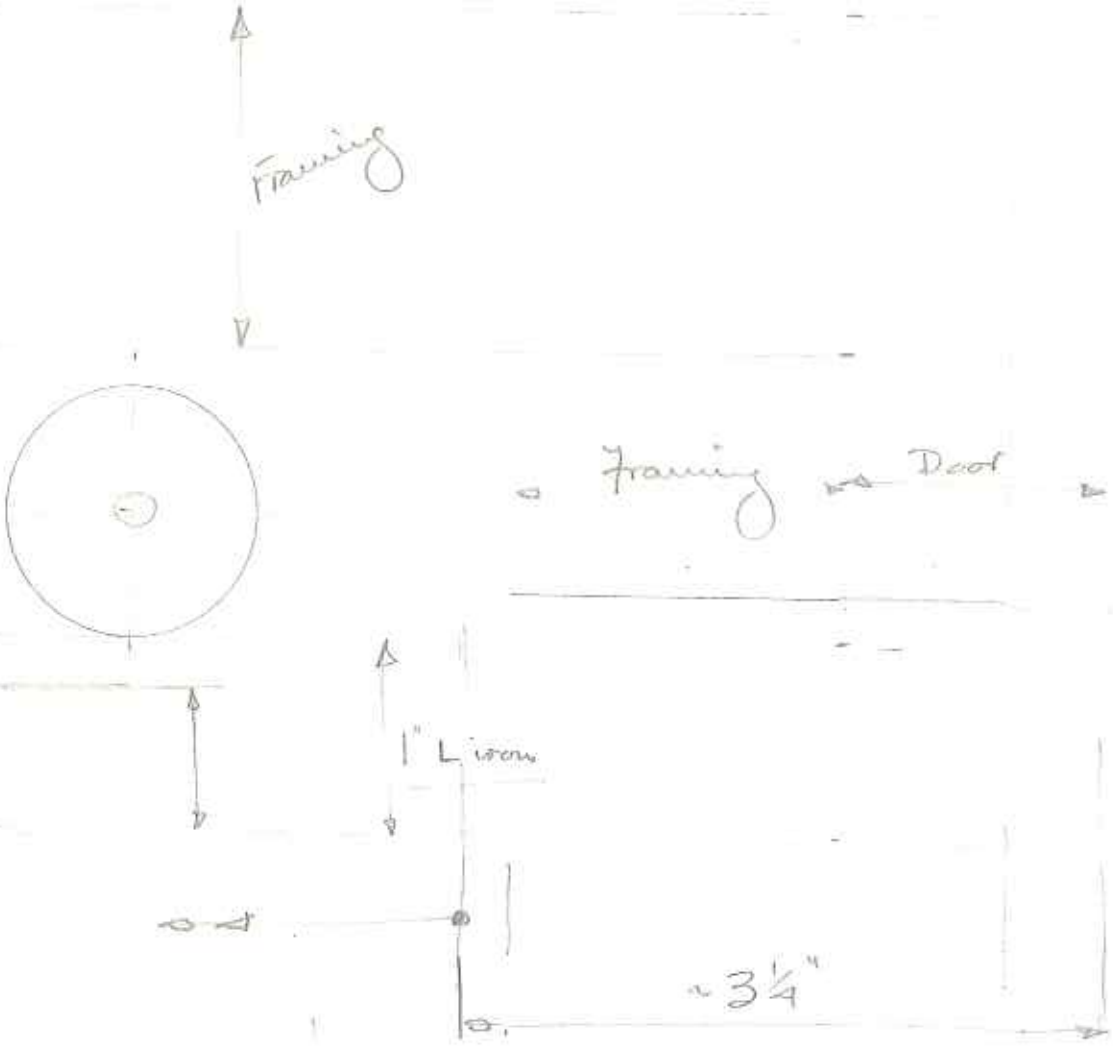
1⅛" x 3/16" AA (2)
(4½" long)

1" x 13/16" x 3/16" AA (4).
(3" long)

1" x 1" x ⅛" STEEL.

4" x 3½" x ⅛" (or 1/10") AA.
(4 off)

1987 Nov. 19.



1988 Feb. 22.

(A.)

Shutdown devices for the A.P.T.

If the P.M.T. is still switched on @ say ~7000V then if daylight arises the PMT could be completely written off.

The micro program could of course have the facility to switch off all power at or before nautical twilight.

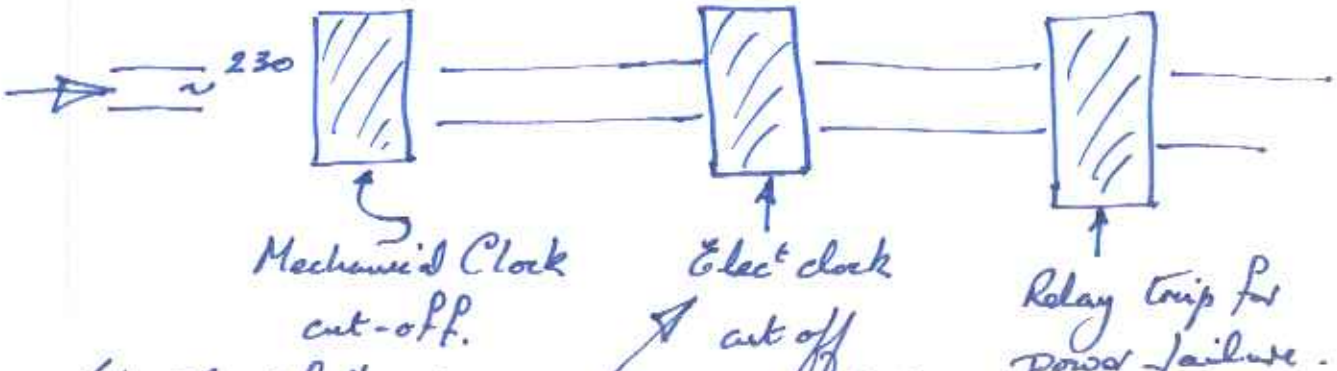
Assumptions.

4. There is a relay trip in the mains supply to all equipment. (N.b. This would of course cause the computer (& whole system) to crash but this is unavoidable without using an indep^{t} source for power supply.

If one were to rely solely on the computer to switch off at an appropriate time then if the computer should crash (due to some other unknown cause) then there would be no protection for the PMT.

This would seem to justify the need for a separate 'mechanical clock' switch on the mains power supply to the whole system.

Three in series could be used.



(Justified if there is no computer operated shut-down system)

$$\frac{1}{R} = \frac{1}{r_1} + \frac{1}{r_2}$$

$$= \frac{1}{3/2} + \frac{1}{5} = \frac{2}{3} + \cdot 2 = \cdot 87.$$

$R = 1 \cdot 15$

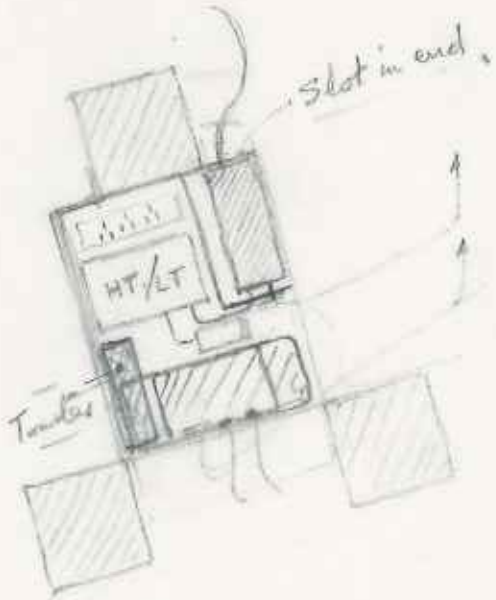
$= \frac{1}{\cdot 7}$

$= \cdot 7$

$= \frac{1}{2} + \frac{1}{5} = \cdot 7.$

$\frac{1}{3} + \frac{1}{5} = \cdot 33$

$\frac{1}{\cdot 533}.$

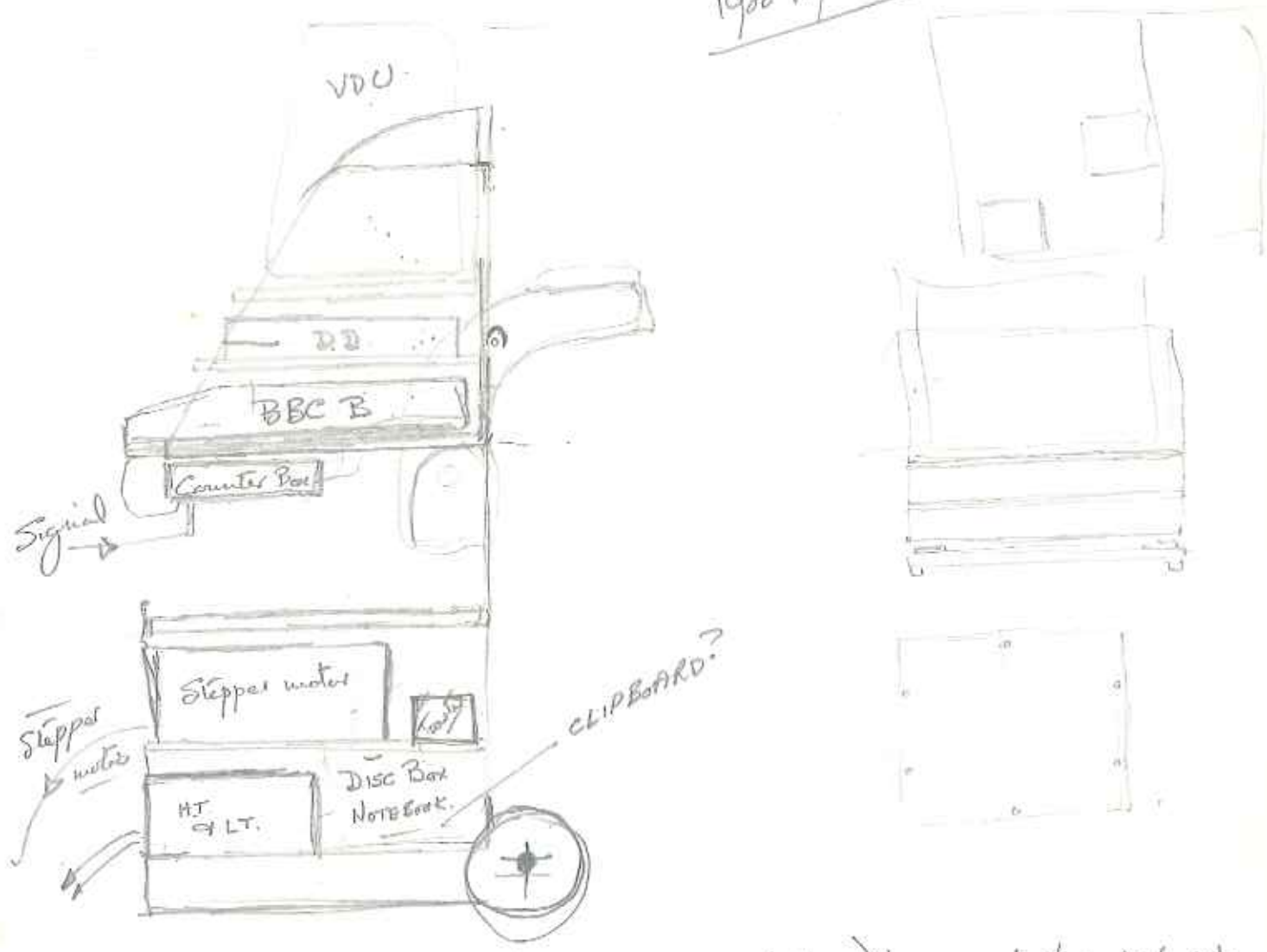


Q. How Amp/. discriminator need to be near PMT unit? If not Amp/Discr & counter could be with computer?

Q. How much power (watts) dissipated at back in HT unit

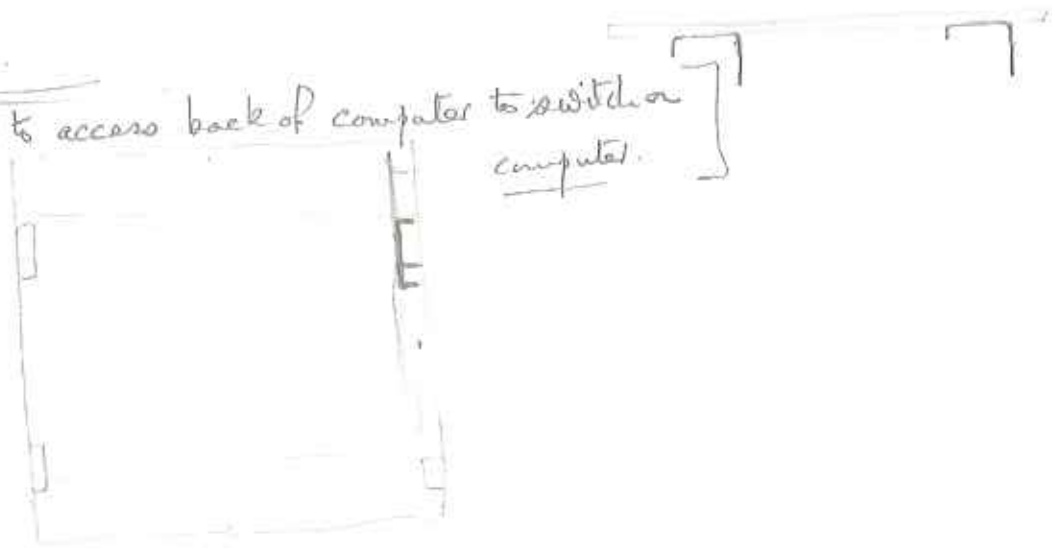
Q Which face of HT unit will indicator be on.

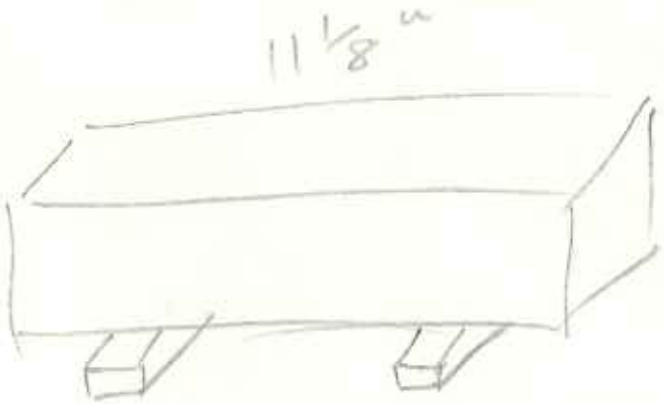
1988 April 9

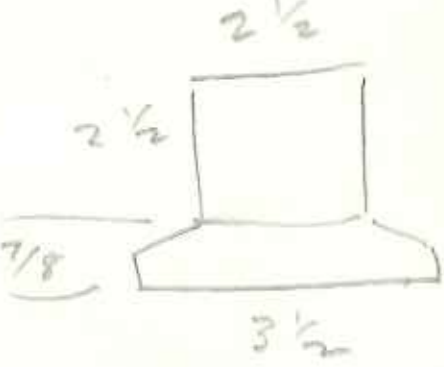


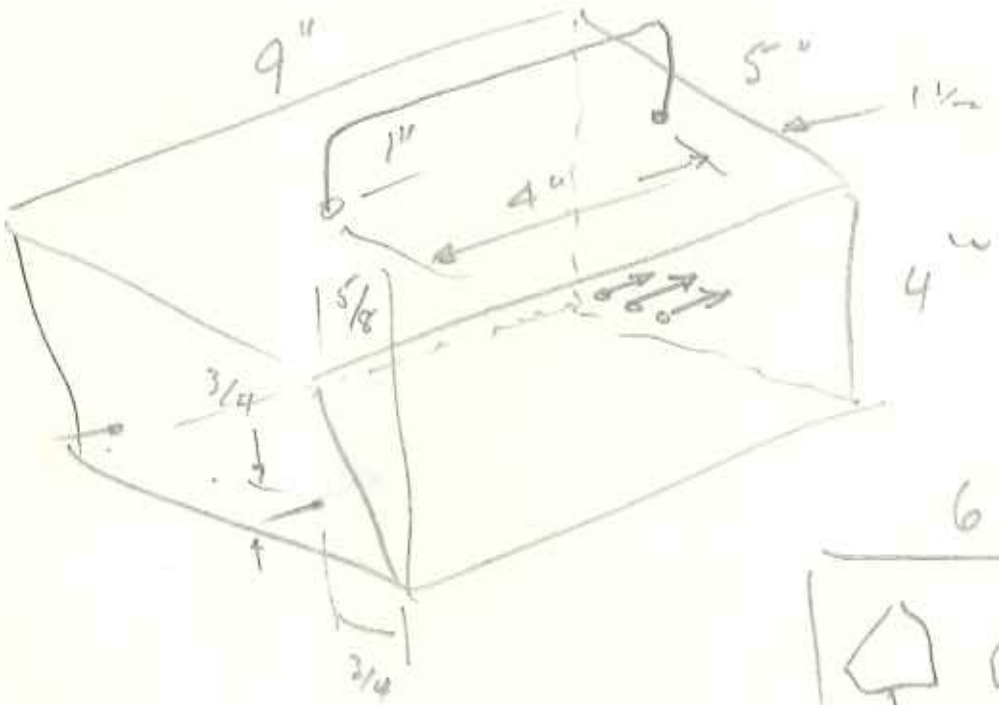
N.b. Will need later (i.e. when back indoors) to connect & power up printer.

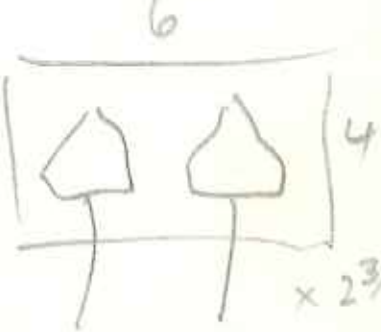
Need to access back of computer to switch on computer.



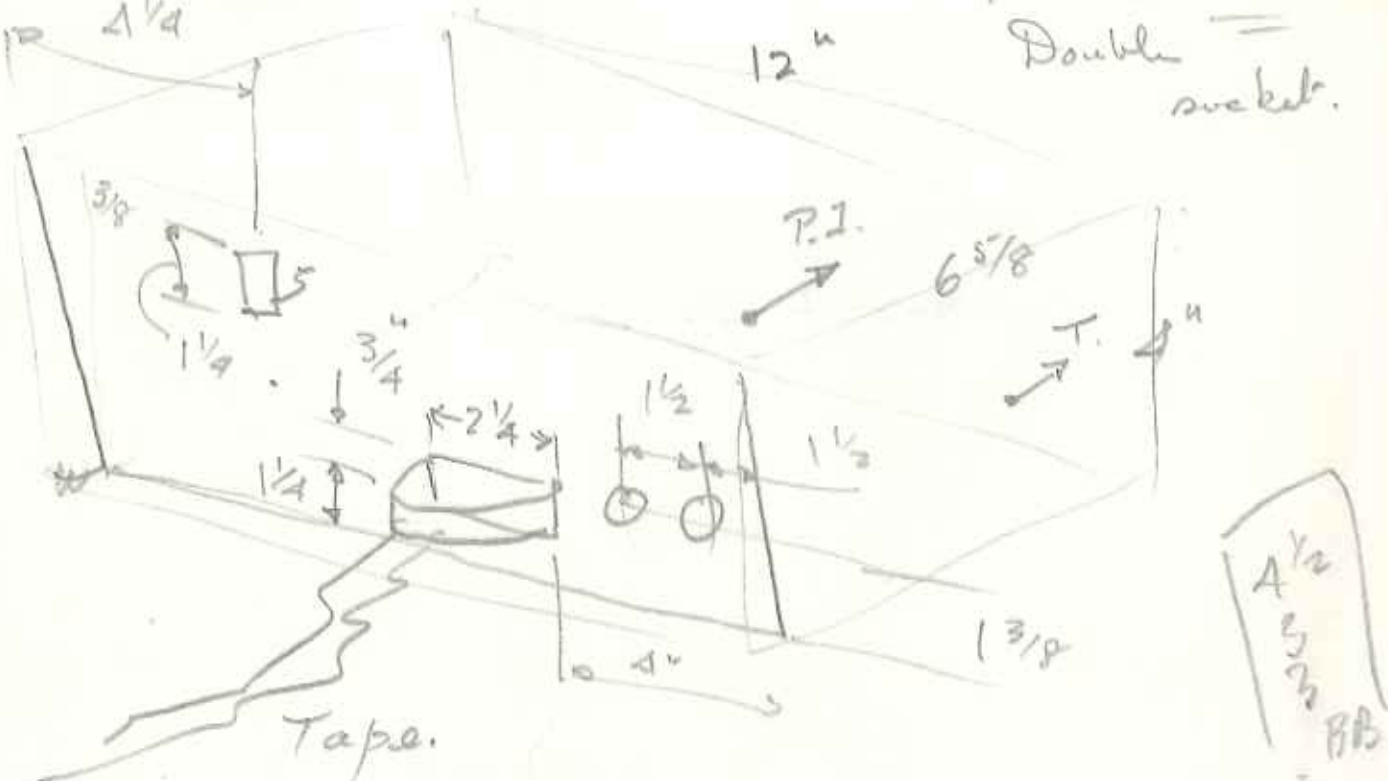


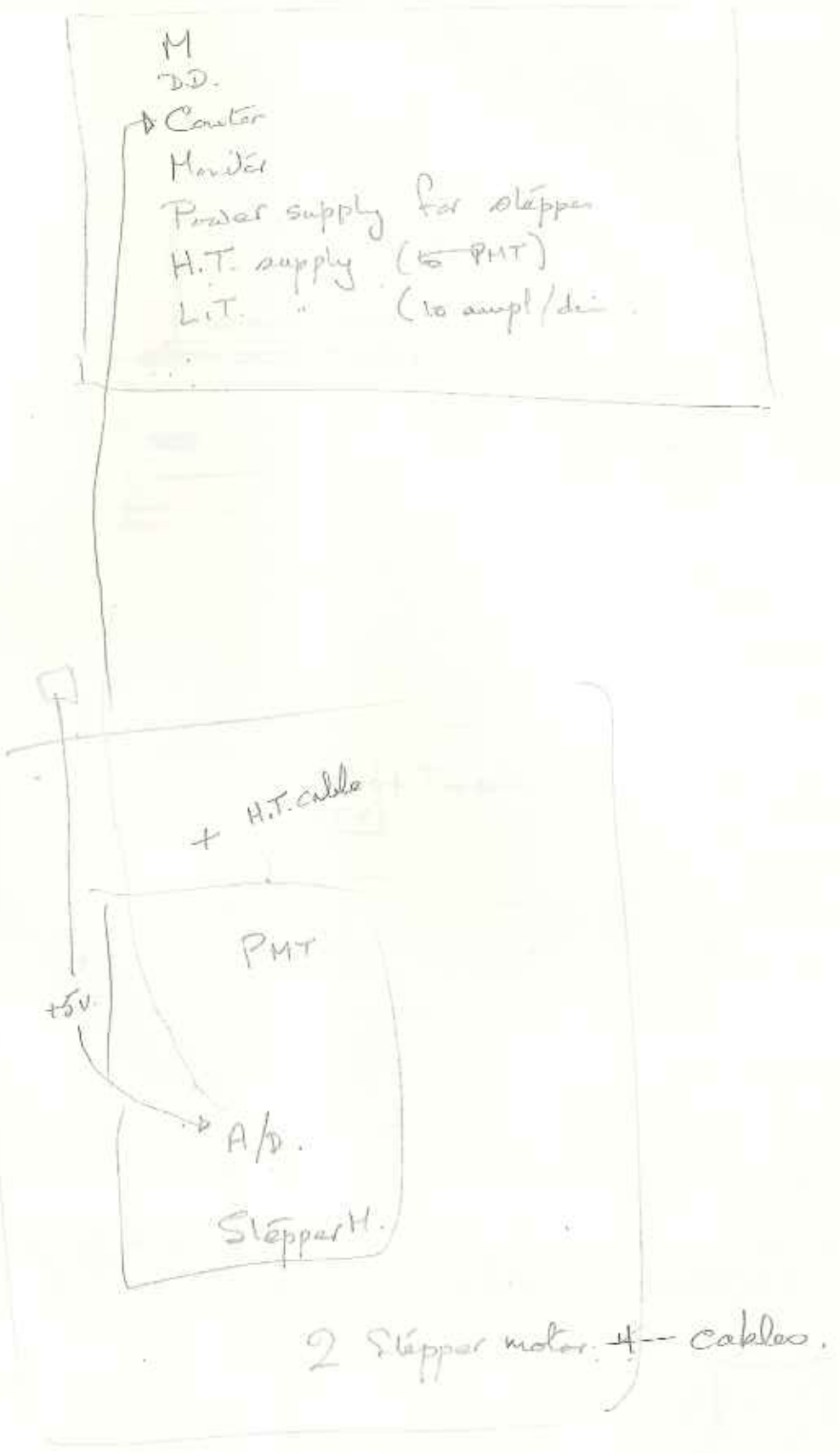




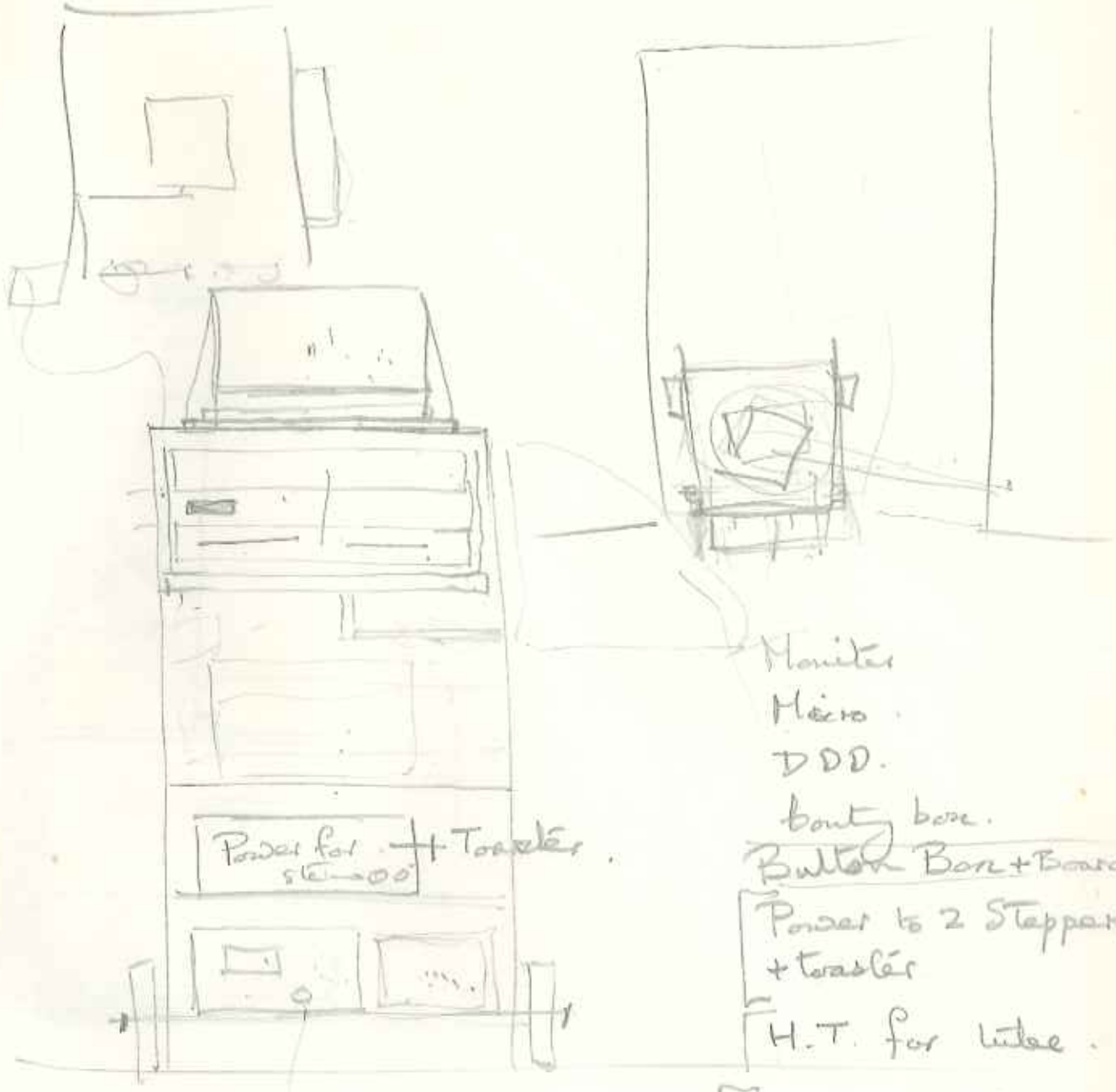


Double socket.





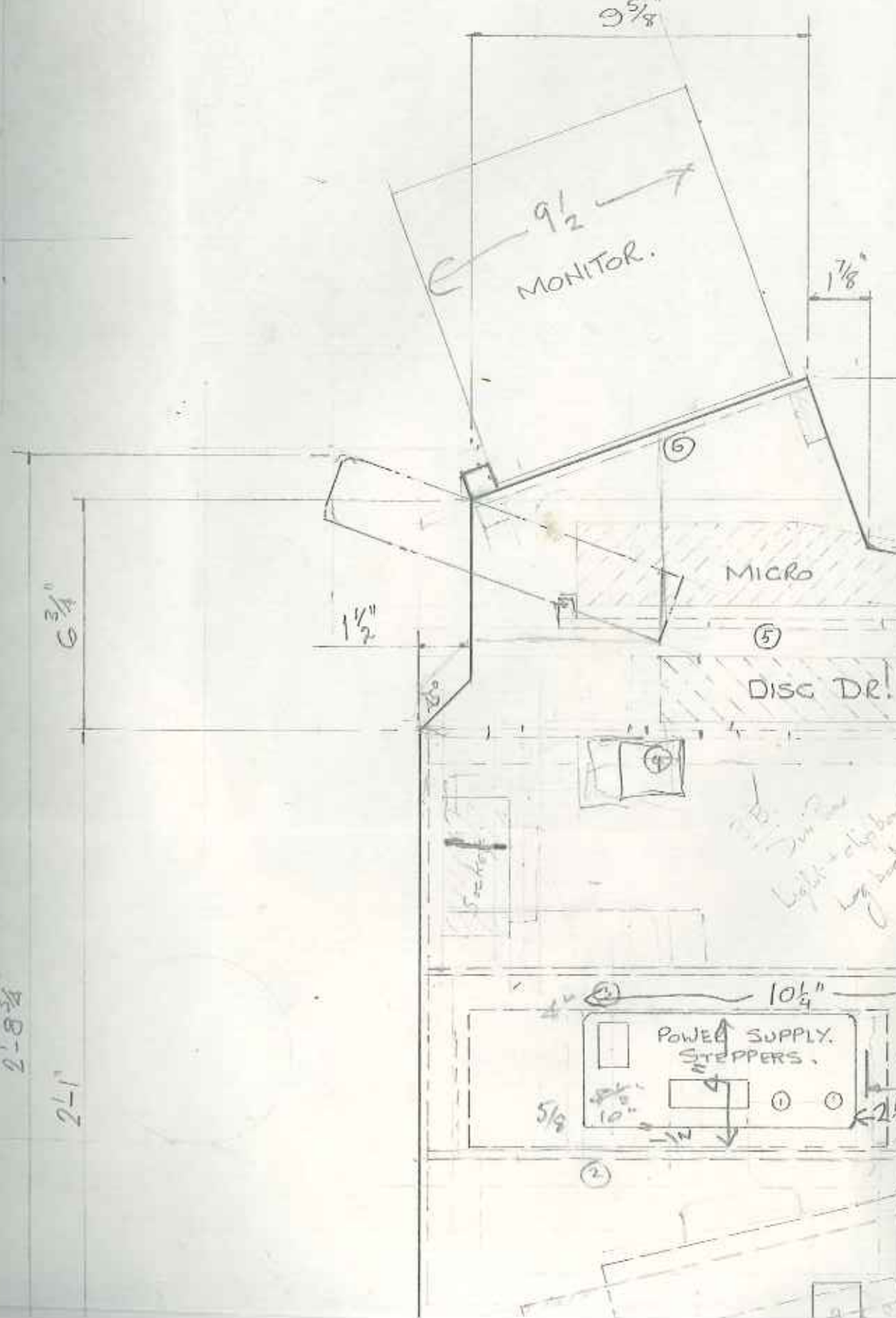
2 Stepper motor +-- cables.

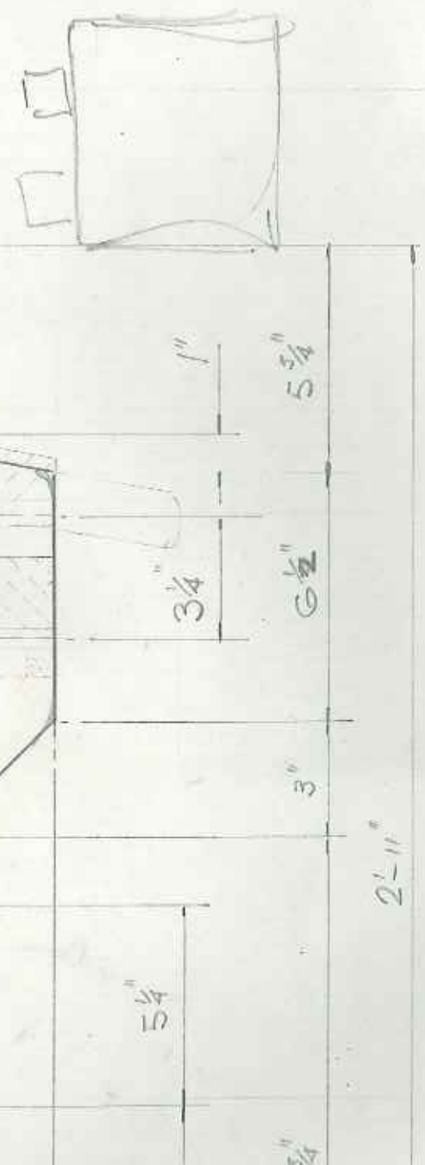


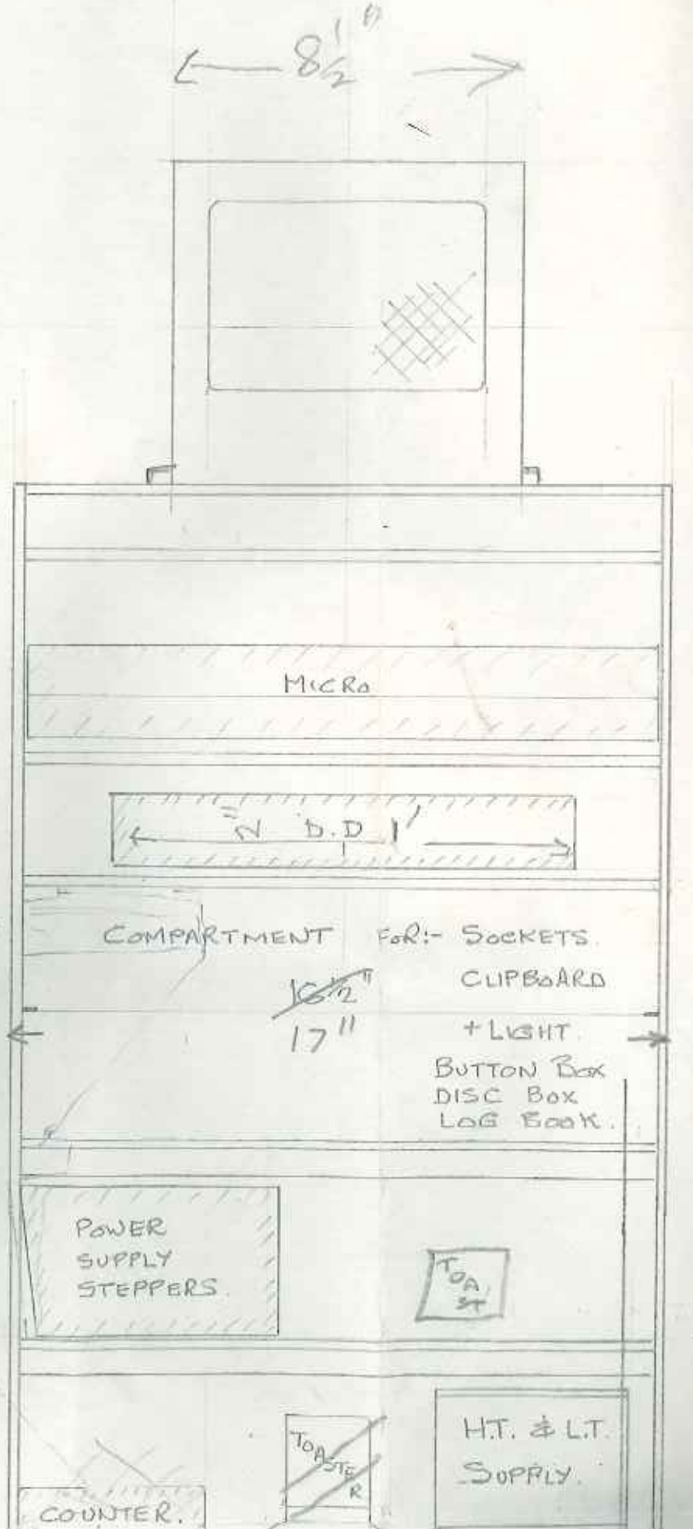
Clipboard light for computer keyboard.

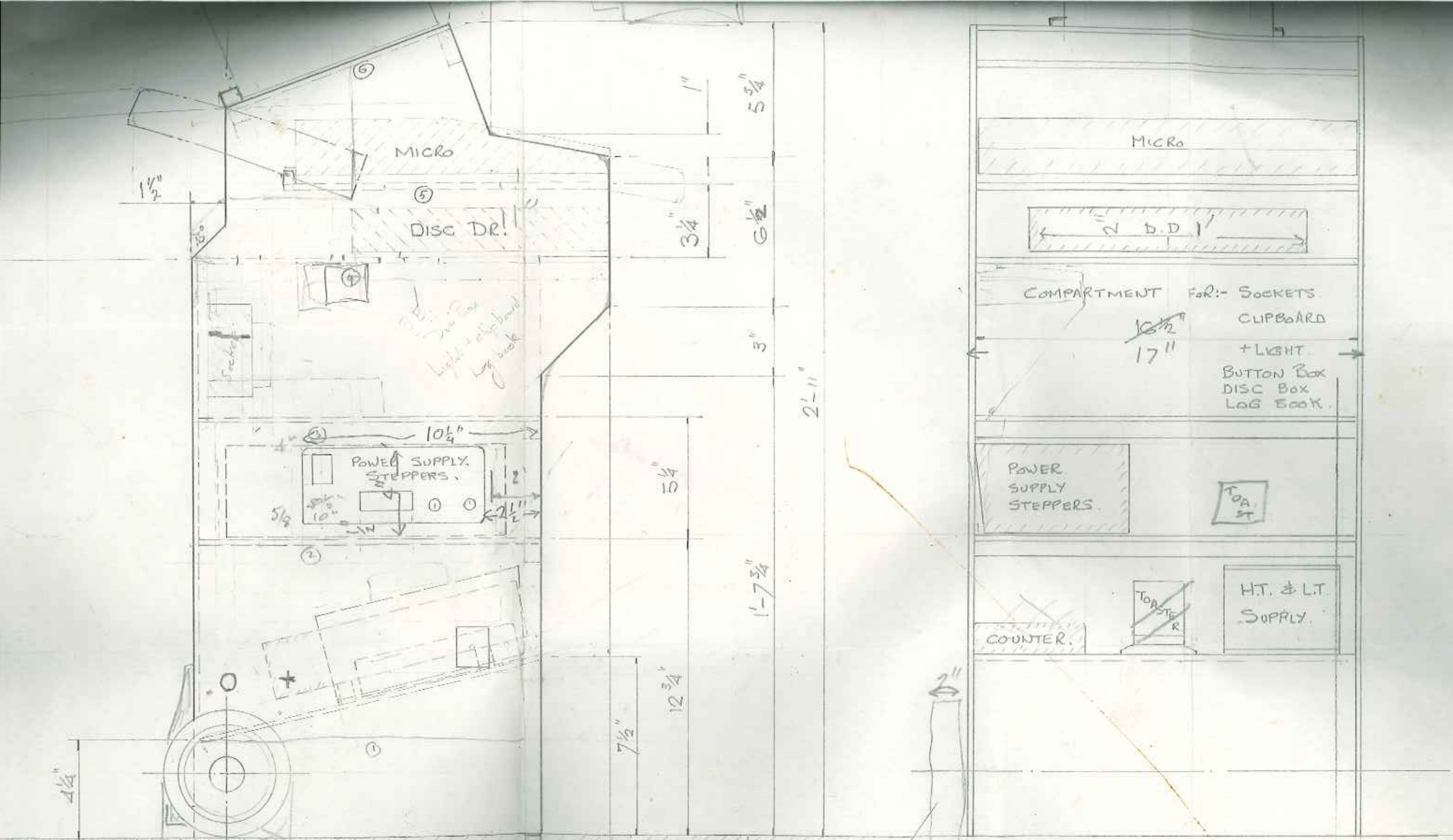
1988 Aug 25.

TROLLEY FOR A.P.T.









1/4 scale

11" 2¾" 2"

4¾" 7" 1½"

6"

4"

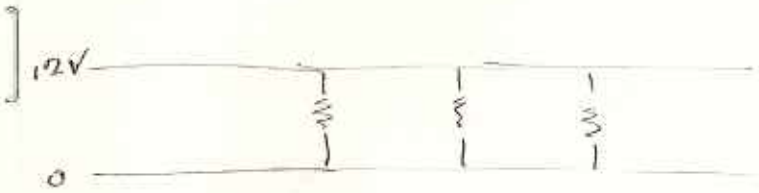
2" sq. x 7" long

1½

1989 Jan 29.

Simple heating system to prevent clouding-up of main mirror & flat on A.P.T.

Heating requirement 2W beneath main mirror — Say 8 units each .25
& 1W for diagonal. — " 2 " "

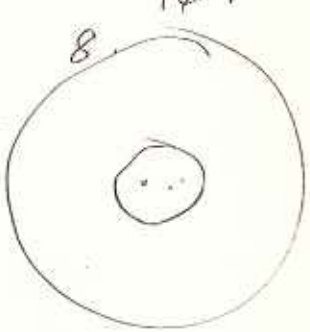


.6 W.
2.4 W.

If resistors are connected in parallel.

Then $\frac{1}{R_T} = \frac{1}{R} + \frac{1}{R}$ ..... $\frac{1}{R} = \frac{10}{R}$.

$\therefore R_T = \frac{R}{10}$.



$W = IV$. $V = IR$.

$= \frac{V^2}{R_T}$. $\therefore R_T = \frac{V^2}{W} = \frac{144}{3} = 48$.

$\therefore R = 480\ \Omega$

Use 145-210 0.5W thick film metal glaze.

$R = 470\ \Omega$. $\therefore R_T = 47\ \Omega$.

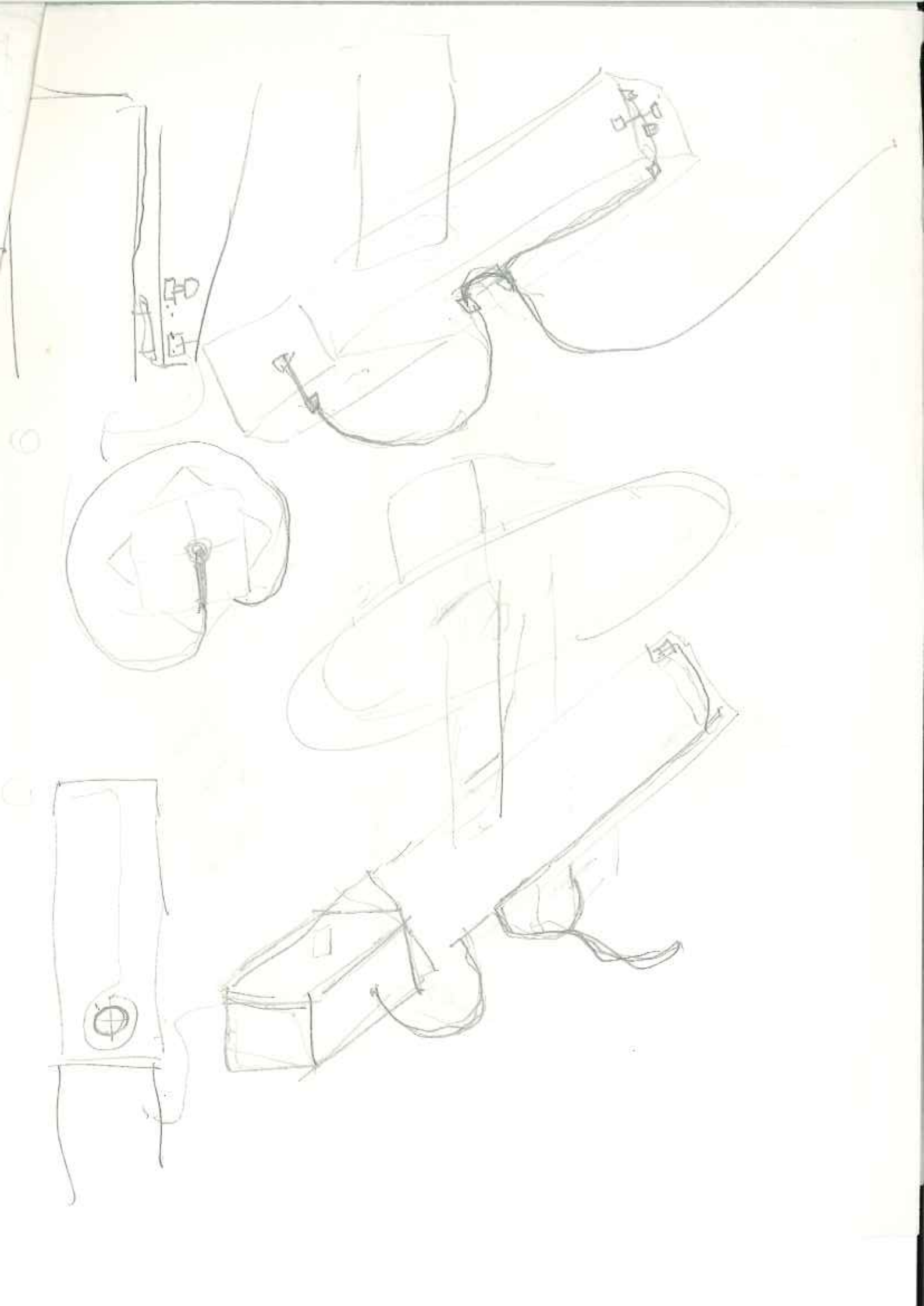
Small light in the circuit will probably supply the remaining 2.4W main mirror
0.6W flat.

If we use 12 resistors $\frac{1}{R_T} = \frac{12}{R}$. $R_T = \frac{R}{12}$.

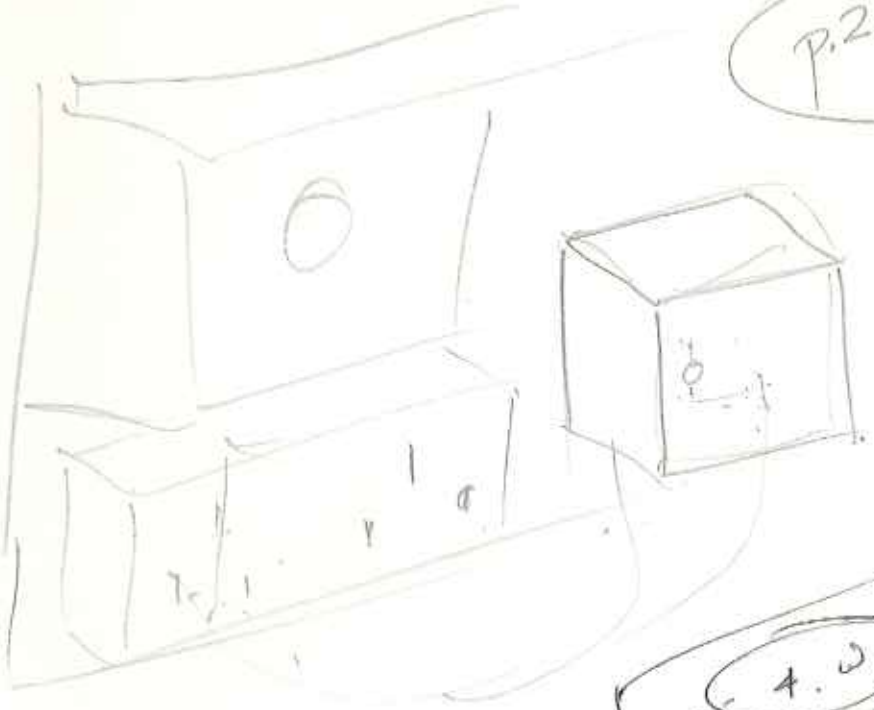
$R_T = 48$. $\therefore R = 48 \times 12$
$= 576$.

560

145-226. — 2 pkts.



P. 218



$= 2.5 - 4.0$

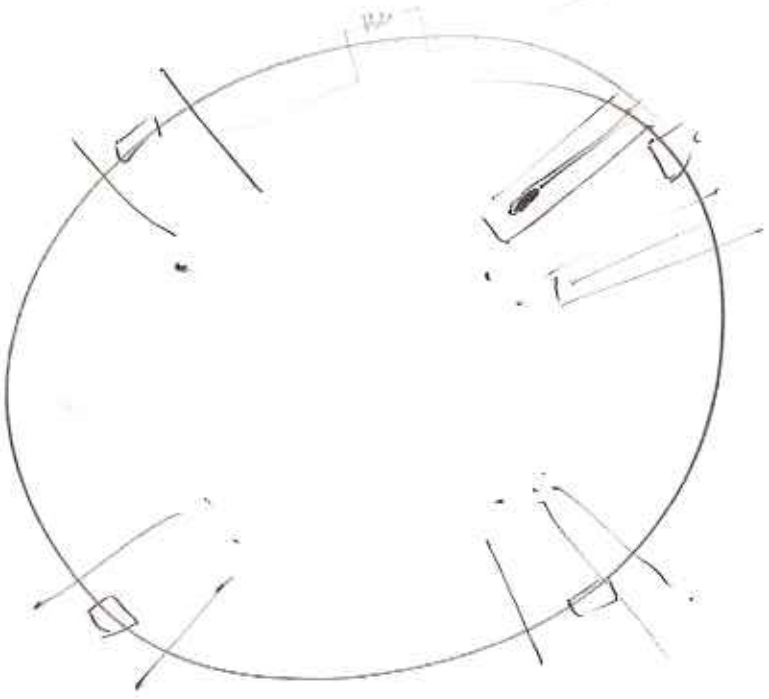
$\frac{v^2}{R}$.

$V = IR$.

$W = IV$.

$W = \frac{V^2}{R}$.

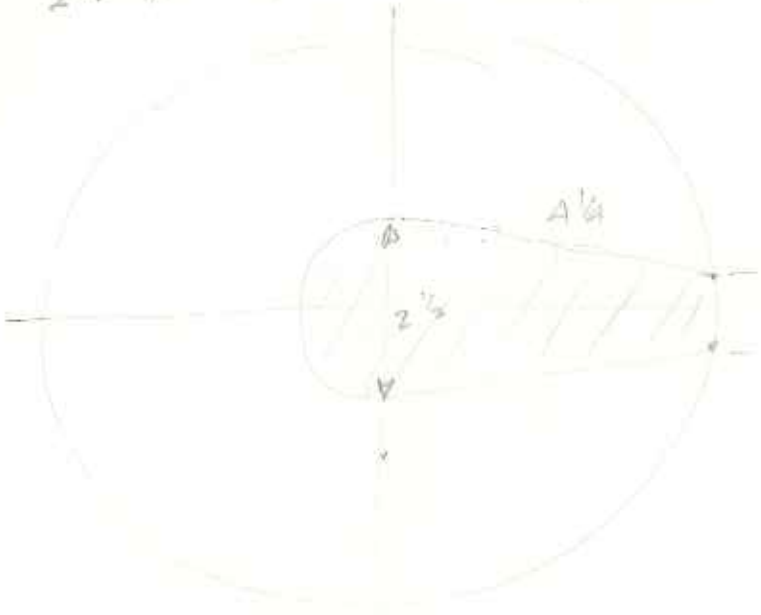
$W = I^2R$.



1989 Feb. 11.

$8\frac{1}{2}$" ϕ metal . 56.75 in²

$2\frac{1}{2}$" ϕ " 4.9 in².



Shaded area

$\sim 2.45 + 4.25 \times \left(\frac{4.5 + 1.5}{2}\right)$

$= 2.45 + 8.5.$

$= 10.95.$

Without conical shield effective area = 51.85 in²

With " = 45.8 in²

2.5 1.0965

2.5

·2 1.202

1.32

·4 1.445

·5 1.58

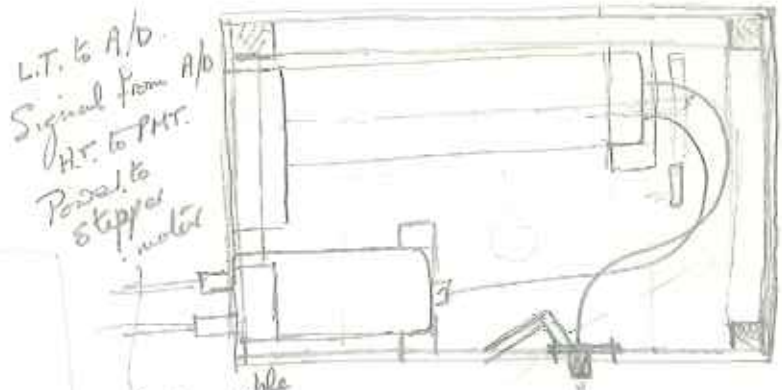
·6 1.74

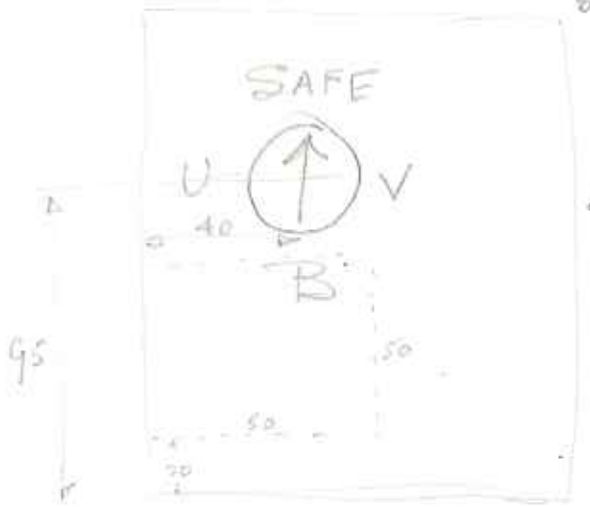
·7 1.90

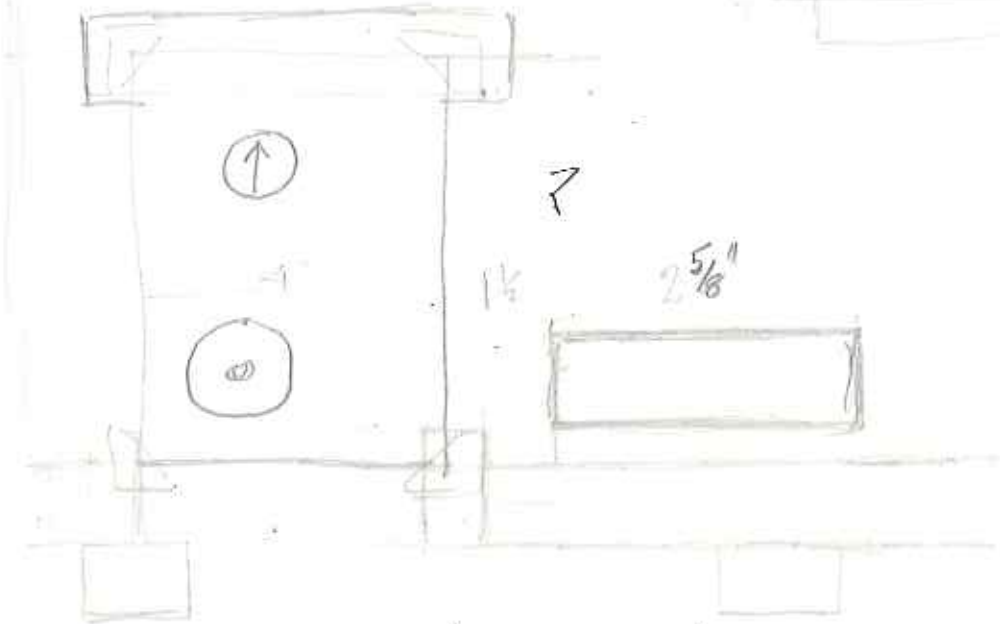
·8 2.09

·9 2.29

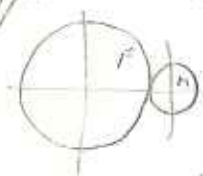
1.0 2.51







N.b. Filter wheel shaft ⌀ 6mm ϕ (for large gear)
Stepper motor shaft is ¼" ϕ, (for small gear)



Let F = no. of teeth on large
& M = " " small

Then if motor is fed n pulses shaft will rotate $n \cdot \frac{M}{F}$ 1.8 degrees = α

If $\alpha = 90°$ then $n \cdot \frac{M}{F} = \frac{90}{1.8} = 50$

$n = 50\left(1 + \frac{a}{b}\right)$; then $50\frac{a}{b}$ must be integer

$\therefore n = 50 \cdot \frac{F}{M}$

10 50 42
3. 15.