RFR

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Attn: Humbert Camerlo

cc:

From: Andy Sedgwick / Lorraine Lin

Subject: Moon Theatre

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Date: 17/5/91

Ref/Job no: .....

Total Pages: 11
(including this page)

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Message

Hello Humbert!

Attached is the design of Kepler.
The construction steps are the same as with "Catapult" (refer to fax sent 24/4/91).

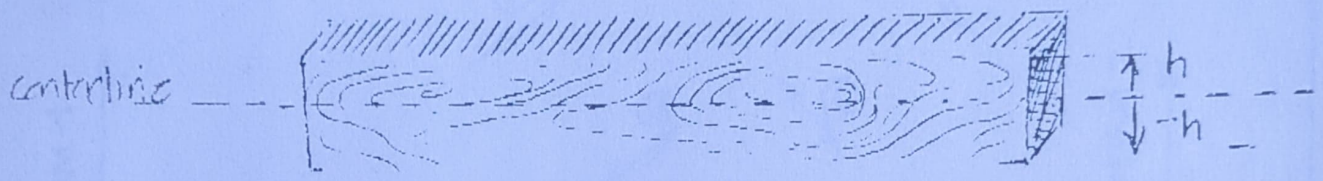
The difference is:

1) Use 1½ × 1½ cm timber sections, thus notching dimensions change as well.

2) Use cables as shown in the diagram to keep the bent beams from moving during construction. Use more if necessary, and in two directions if desired. ↔↕
These cables can be removed after the plywood surface is secured to the beams.

(cont'd) -->

3) The information on how the beams attach to the edge beams is in a slightly different format from "catapult." The heights given are the deviation from the centerline of the beam.

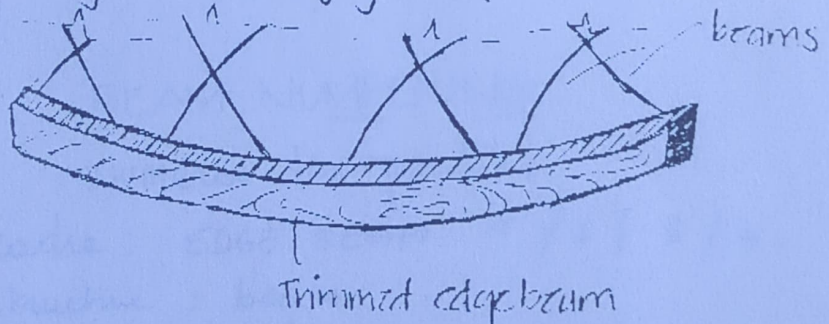


The maximum positive value is 0.040m and the minimum value is -0.041m. (h_{max} / h_{min})

Thus, we'll need an edge of at least 0.081m

⇒ Try <u>10cm</u> in depth.

After assembling the reflector, the edge beams can be trimmed to reduce the weight using a hand jig-saw.



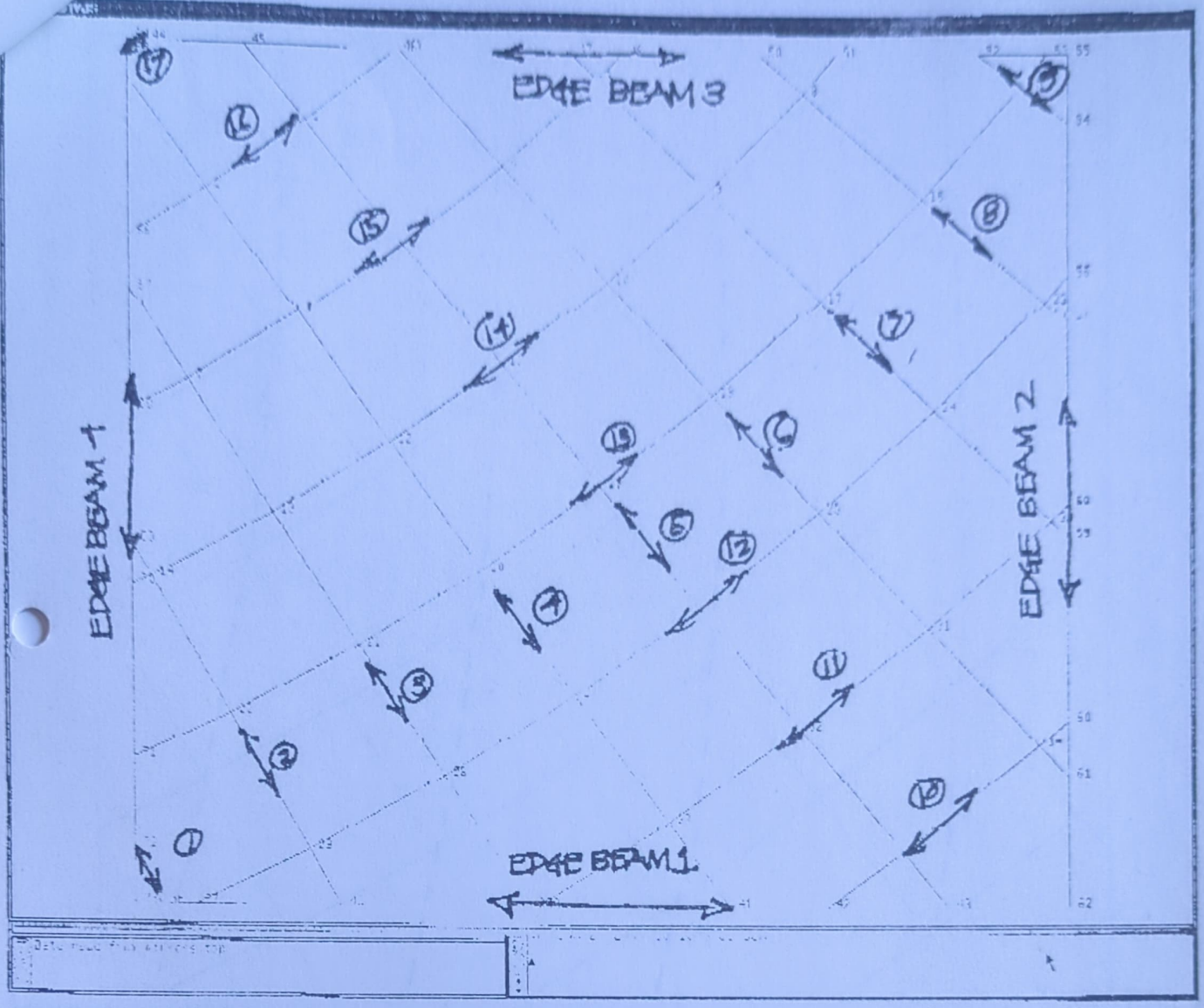
4) The image in plan forms a concave shape. This is very important; disregarding this point runs the risk of constructing the reflector's mirror image.

Best of Luck constructing!

Cheers,

Jon

If you want cutting patterns for the plywood let me know



PLAN

BEAM NUMBERING

Numeros des poutres

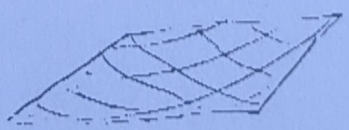
cadre : EDGE BEAM 1 / 2 / 3 / 4.

structure : beam

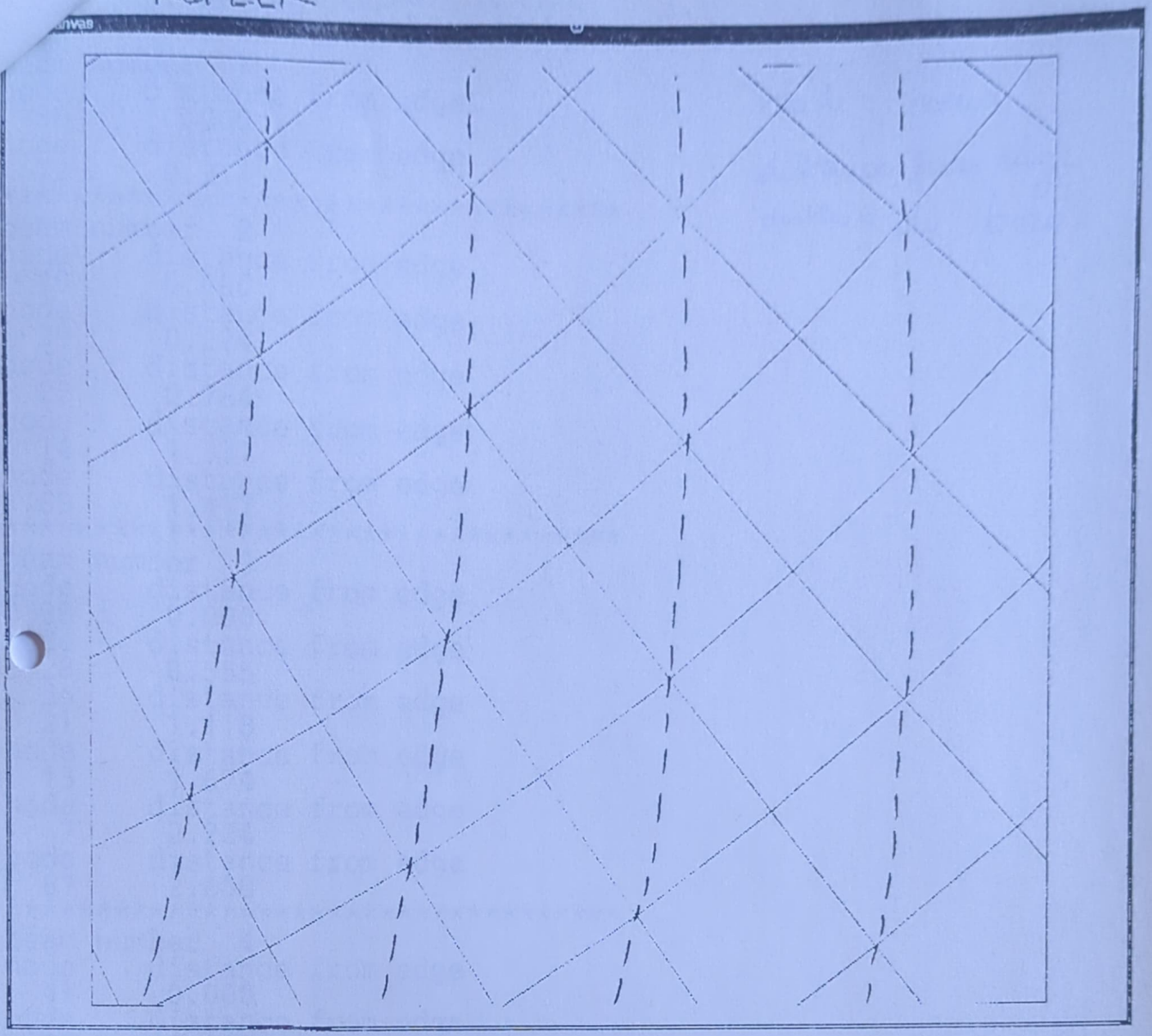
numero des noeuds.

CONCAVE

↓VIEWPOINT



KEPLER



CABLE PATTERN

PLAN VIEW

tension des cables pour montage

ECTOR: KEPLER BEAM DATA

node : noeud
distance from edge
distance du bord.

```
**********************************
beam number  1
node     distance from edge
  36      0.000
node     distance from edge
  72      0.211
**********************************
beam number  2
node     distance from edge
  40      0.000
node     distance from edge
  29      0.224
node     distance from edge
  22      0.784
node     distance from edge
  14      1.337
node     distance from edge
  69      1.477
**********************************
beam number  3
node     distance from edge
  38      0.000
node     distance from edge
  28      0.555
node     distance from edge
  21      1.118
node     distance from edge
  13      1.674
node     distance from edge
   7      2.224
node     distance from edge
  67      2.600
**********************************
beam number  4
node     distance from edge
  41      0.000
node     distance from edge
  33      0.375
node     distance from edge
  27      0.948
node     distance from edge
  20      1.514
node     distance from edge
  12      2.074
node     distance from edge
   6      2.627
node     distance from edge
   2      3.174
node     distance from edge
  65      3.641
**********************************
beam number  5
node     distance from edge
  43      0.000
node     distance from edge
  35      0.254
node     distance from edge
  32      0.838
node     distance from edge
  26      1.414
node     distance from edge
  19      1.984
node     distance from edge
  11      2.546
node     distance from edge
   5      3.103
node     distance from edge
```

```
   1      3.653
node     distance from edge
  45      3.992
**********************************
beam number  6
node     distance from edge
  61      0.000
node     distance from edge
  34      0.154
node     distance from edge
  31      0.741
node     distance from edge
  25      1.321
node     distance from edge
  18      1.894
node     distance from edge
  10      2.461
node     distance from edge
   4      3.020
node     distance from edge
  49      3.565
**********************************
beam number  7
node     distance from edge
  59      0.000
node     distance from edge
  30      0.084
node     distance from edge
  24      0.667
node     distance from edge
  17      1.244
node     distance from edge
   9      1.813
node     distance from edge
   3      2.377
node     distance from edge
  47      2.509
**********************************
beam number  8
node     distance from edge
  57      0.000
node     distance from edge
  23      0.110
node     distance from edge
  16      0.690
node     distance from edge
   8      1.263
node     distance from edge
  50      1.468
**********************************
beam number  9
node     distance from edge
  54      0.000
node     distance from edge
  15      0.217
node     distance from edge
  52      0.408
**********************************
beam number  10
node     distance from edge
  42      0.000
node     distance from edge
  35      0.344
node     distance from edge
  34      0.975
node     distance from edge
  60      1.115
**********************************
```

beam number 11
node distance from edge
39 0.000
node distance from edge
33 0.582
node distance from edge
32 1.184
node distance from edge
31 1.783
node distance from edge
30 2.378
node distance from edge
58 2.463
****
beam number 12
node distance from edge
37 0.000
node distance from edge
29 0.466
node distance from edge
28 1.041
node distance from edge
27 1.613
node distance from edge
26 2.183
node distance from edge
25 2.749
node distance from edge
24 3.312
node distance from edge
23 3.871
node distance from edge
56 3.995
****
beam number 13
node distance from edge
71 0.000
node distance from edge
22 0.394
node distance from edge
21 0.936
node distance from edge
20 1.475
node distance from edge
19 2.012
node distance from edge
18 2.545
node distance from edge
17 3.076
node distance from edge
16 3.603
node distance from edge
15 4.126
node distance from edge
53 4.274
****
beam number 14
node distance from edge
70 0.000
node distance from edge
14 0.079
node distance from edge
13 0.588
node distance from edge
12 1.094
node distance from edge
11 1.598
node distance from edge

BEAM DATA

2.099
node distance from edge
9 2.597
node distance from edge
8 3.091
node distance from edge
51 3.270
****
beam number 15
node distance from edge
68 0.000
node distance from edge
7 0.239
node distance from edge
6 0.713
node distance from edge
5 1.183
node distance from edge
4 1.652
node distance from edge
3 2.117
node distance from edge
48 2.247
****
beam number 16
node distance from edge
66 0.000
node distance from edge
2 0.331
node distance from edge
1 0.769
node distance from edge
46 1.193
****
beam number 17
node distance from edge
63 0.000
node distance from edge
44 0.073

EDGE BEAM DATA

9

(meters)

EDGE BEAM number 1

node	distance from edge
73	0.000
node	distance from edge
36	0.009
node	distance from edge
37	0.226
node	distance from edge
40	0.765
node	distance from edge
38	1.474
node	distance from edge
39	1.503
node	distance from edge
41	2.234
node	distance from edge
42	2.503
node	distance from edge
43	3.056
node	distance from edge
4	3.503

← TOTAL LENGTH

EDGE BEAM number 2

node	distance from edge
62	0.000
node	distance from edge
61	0.459
node	distance from edge
60	0.659
node	distance from edge
59	1.314
node	distance from edge
58	1.428
node	distance from edge
57	2.076
node	distance from edge
56	2.235
node	distance from edge
54	2.763
node	distance from edge
55	3.003

EDGE BEAM number 3

node	distance from edge
55	0.000
node	distance from edge
53	0.081
node	distance from edge
52	0.331
node	distance from edge
51	0.659
node	distance from edge
50	1.141
node	distance from edge
48	1.665
node	distance from edge
47	1.857
node	distance from edge
49	2.497
node	distance from edge
46	2.512
node	distance from edge
45	3.075
node	distance from edge

EDGE BEAM DATA (CONTD).

3.443

distance from edge

64 3.503

FIXX BEAM number 4

node	distance from edge
64	0.000
node	distance from edge
03	0.040
node	distance from edge
65	0.129
node	distance from edge
66	0.666
node	distance from edge
67	0.859
node	distance from edge
68	1.280
node	distance from edge
69	1.738
node	distance from edge
70	1.890
[illegible]	distance from edge
	2.493
[illegible]	distance from edge
	2.875
node	distance from edge
73	3.003

OR: KEPLER
****
BEAM number 1 (m/ms)
node height
73 0.040 ← max
node height
36 0.031
node height
37 0.022
node height
40 -0.011
node height
38 -0.038
node height
39 -0.038
node height
41 -0.041 ← min
node height
42 -0.034
node height
43 -0.019
node height
62 0.005
****
EDGE BEAM number 2
node height
62 0.005
node height
61 -0.020
node height
60 -0.027
node height
59 -0.038
node height
58 -0.038
node height
57 -0.024
node height
56 -0.018
node height
54 0.013
node height
55 0.032
****
EDGE BEAM number 3
node height
55 0.032
node height
53 0.025
node height
52 0.009
node height
51 -0.019
node height
50 -0.029
node height
48 -0.039
node height
47 -0.040
node height
49 -0.032
node height
46 -0.032
node height
45 -0.007
node height
44 0.014
node height
64 0.019
****
EDGE BEAM number 4
node height
64 0.019
node height
63 0.016
node height
65 0.010
node height
66 -0.016
node height
67 -0.021
node height
68 -0.027
node height
69 -0.023
node height
70 -0.020
node height
71 0.005
node height
72 0.026
node height
73 0.040