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STAN A. HUBER CONSULTANTS, INC. ☐ 200 NORTH CEDAR ROAD ☐ NEW LENOX, IL 60451 ☐ (815) 485-6161

November 26, 1985

Aubrey Smith
Environmental Health
ARCO
Harvey Technical Center
400 East Sibley Boulevard
Harvey, Illinois

Dear Aubrey:

Enclosed is the close-out radiation survey report and test results for the radiation pool, as performed by John Hollinden of our firm.

Please review the report and call us if you have any questions. Then, you may wish to write a cover letter to Don Sreniawski at the same NRC address indicated on the enclosed letter, to advise him that you are now the contact person at ARCO - Harvey. Otherwise, you may simply wish to add your name, title and signature at the end of John Hollinden's letter, to indicate you have reviewed the report.

Then, please forward the report to the NRC. An addressed label is enclosed for your convenience. The extra copy is for your records.

We appreciated this opportunity to be of additional service.

Sincerely,

Stan A Huber / J.J.H.

Stan A. Huber
President

SAH:jms

cc: Bob Bassett
ADCO Services

A/112

ARCO
Harvey Technical Center
400 East Sibley Boulevard
Harvey, Illinois

November 19, 1985

Don Sreniawski
Materials Section Chief
U. S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Re: Termination of NRC Radioactive Materials License #12-00140-04.

Decontamination of Hot Cell Water Pool.

Original Termination Request Sent To U. S. Nuclear Regulatory Commission (Bill Adams) on July 30, 1985.

Dear Mr. Sreniawski:

This is the summary report of the "Closeout Radiation Survey" performed at the Harvey Technical Center located at 400 East Sibley Boulevard in Harvey, Illinois, regarding the decontamination of the "hot cell" water pool.

SOURCE OF TRITIUM CONTAMINATION

1. The surface tile lining of the pool was removed by ADCO Services of Tinley Park and placed in drums for disposal by that firm. The source of the tritium contamination appeared to be water which had been trapped behind the surface tile from a level of approximately 5 feet above the surface of the floor to the bottom floor of the pool. The coloring of the cement was distinctly different at this level. After the tile was removed, the pool was revisited a week later, on November 5, 1985 when Bob Bassett and I returned to confirm that no further seepage of water had occurred. This indicates the seepage was due to water that had been previously trapped behind the surface tile. On that date, Bob and I conducted the final closeout survey of the water pool to determine any residual contamination.

2. The approximate dimensions of the pool are 8 feet by 6 feet (length and width) by approximately 25 feet deep. For the results of this survey please refer to Attachment 1 with the sketches Attachments 2 through 6.

The coding of the wipes is as follows:

The numbered wipes with circles on them represent 100 cm surface wipe test samples. The numbers that do not have circles represent cement samples of approximately .5 to 1.5 grams each.

3. Although the wipes and cement samples indicated all levels were below 200 dpm/cm and 200 dpm/gram, we did notice there was some tritium present on the floor of the pool.

4. The floor of the pool was then wire brushed and all loose samples were removed and another set of readings obtained (Attachment 7).

5. The results obtained after the floors were all wire brushed were considerably higher with the readings ranging from 66 dpm/gram to 135 dpm/gram. We then "jackhammered" approximately two inches of the concrete floor and removed the rubble. Another set of samples were then taken and the results are listed on Attachment 8. The final results show the range of tritium remaining in the cement to be between 31 and 38 dpm/gram, which we consider to be as low as reasonably achievable (ALARA).

SUMMARY

The final results of the floor of the pool indicates that tritium is present on the order of 31 to 38 dpm/gram at the two inch level of concrete. This is far below the level of 0.05 microcurie per gram of H-3 which is permitted for routine disposal pursuant to 10 CFR 20.306. We request authorization for filling the pool with sand and capping the pool with a concrete lid at least one foot thick. This will assure that no one will again be able to enter the pool. We wait your approval of this closeout before any further action will be taken. We trust the license termination document can be issued to ARCO - Harvey in accordance with the terms of this letter, or with other conditions as the NRC may deem appropriate.

Sincerely,

John J. Hollinden
Senior Nuclear Consultant
Stan A. Huber Consultants, Inc.

JJH:jms

Enclosures

Sample Number	1.	1.1 grams
	2.	3.26 grams
	3.	3.12 grams
	4.	2.04 grams
	5.	1.1 grams
	6.	1.2 grams
	7.	0.23 grams
	11.	0.42 grams
	12.	0.17 grams
	15.	2.48 grams
	16.	0.07 grams
	17.	0.31 grams
	21.	1.91 grams
	22.	0.84 grams
	25.	1.48 grams
	26.	1.1 grams
	29.	3.25 grams
	30.	1.88 grams
	33.	3.42 grams
	34.	1.65 grams
	37.	1.15 grams
	38.	1.5 grams
	41.	0.75 grams
	42.	1.49 grams
	45.	1.55 grams
	46.	1.43 grams
	49.	1.89 grams
	50.	2.43 grams
	53.	1.72 grams
	54.	2.02 grams
	57.	1.69 grams
	58.	1.42 grams
	61.	1.35 grams
	62.	1.06 grams
	65.	1.47 grams
	66.	1.36 grams
	69.	1.26 grams
	70.	1.12 grams

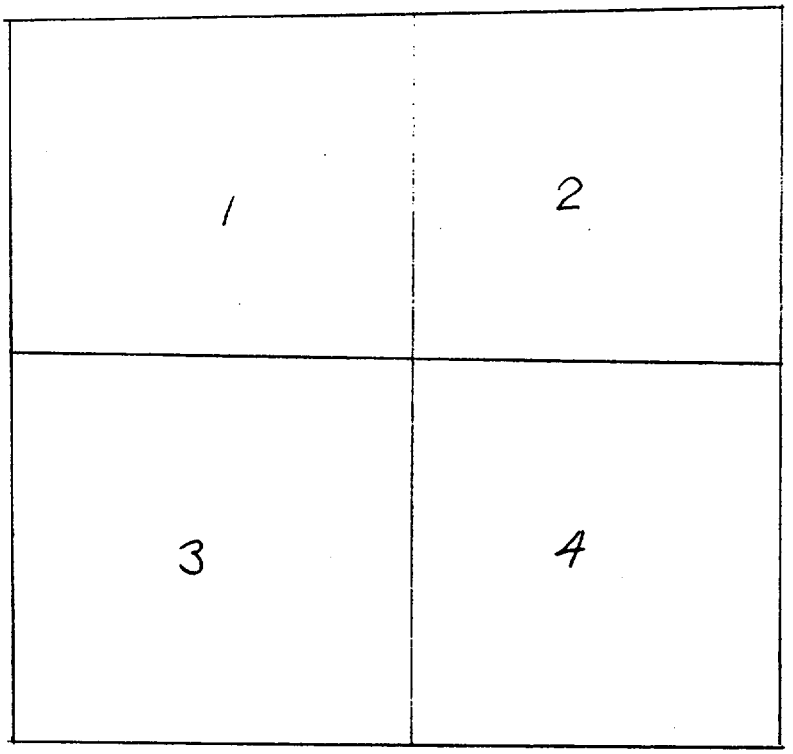
Sample Number	1wb.	4.79 grams
	2wb.	4.47 grams
	3wb.	5.8 grams
	4wb.	4.41 grams
	1F.	5.39 grams
	2F.	8.52 grams
	3F.	7.4 grams
	4F.	5.14 grams

Sample Number	1.	17 dpm	15 dpm/gram
	2.	175 dpm	54 dpm/gran
	3.	98 dpm	31 dpm/gram
	4.	85 dpm	42 dpm/gram
	5.	23 dpm	96 dpm/gram
	6.	48 dpm	44 dpm/gram
	7.	10 dpm	45 dpm/gram
	8.	0 dpm	0 dpm/100 cm^2
	9.	0 dpm	0 dpm/100 cm^2
	10.	0 dpm	0 dpm/100 cm^2
	11.	0 dpm	0 dpm/gram
	12.	17 dpm	98 dpm/gram
	13.	6 dpm	6 dpm/100 cm^2
	14.	0 dpm	0 dpm/100 cm^2
	15.	8 dpm	3 dpm/gram
	16.	4 dpm	60 dpm/gram
	17.	10 dpm	34 dpm/gram
	18.	2 dpm	2 dpm/100 cm^2
	19.	0 dpm	0 dpm/100 cm^2
	20.	0 dpm	0 dpm/100 cm^2
	21.	2 dpm	1 dpm/gram
	22.	0 dpm	0 dpm/gram
	23.	2 dpm	2 dpm/100 cm^2
	24.	0 dpm	0 dpm/100 cm^2
	25.	0 dpm	0 dpm/gram
	26.	0 dpm	0 dpm/gram
	27.	0 dpm	0 dpm/100 cm^2
	28.	0 dpm	0 dpm/100 cm^2
	29.	2 dpm	<1 dpm/gram
	30.	25 dpm	13 dpm/gram
	31.	0 dpm	0 dpm/100 cm^2
	32.	10 dpm	10 dpm/100 cm^2
	33.	15 dpm	4 dpm/100 cm^2
	34.	0 dpm	0 dpm/gram
	35.	6 dpm	6 dpm/100 cm^2
	36.	0 dpm	0 dpm/100 cm^2
	37.	0 dpm	0 dpm/gram
	38.	6 dpm	4 dpm/gram

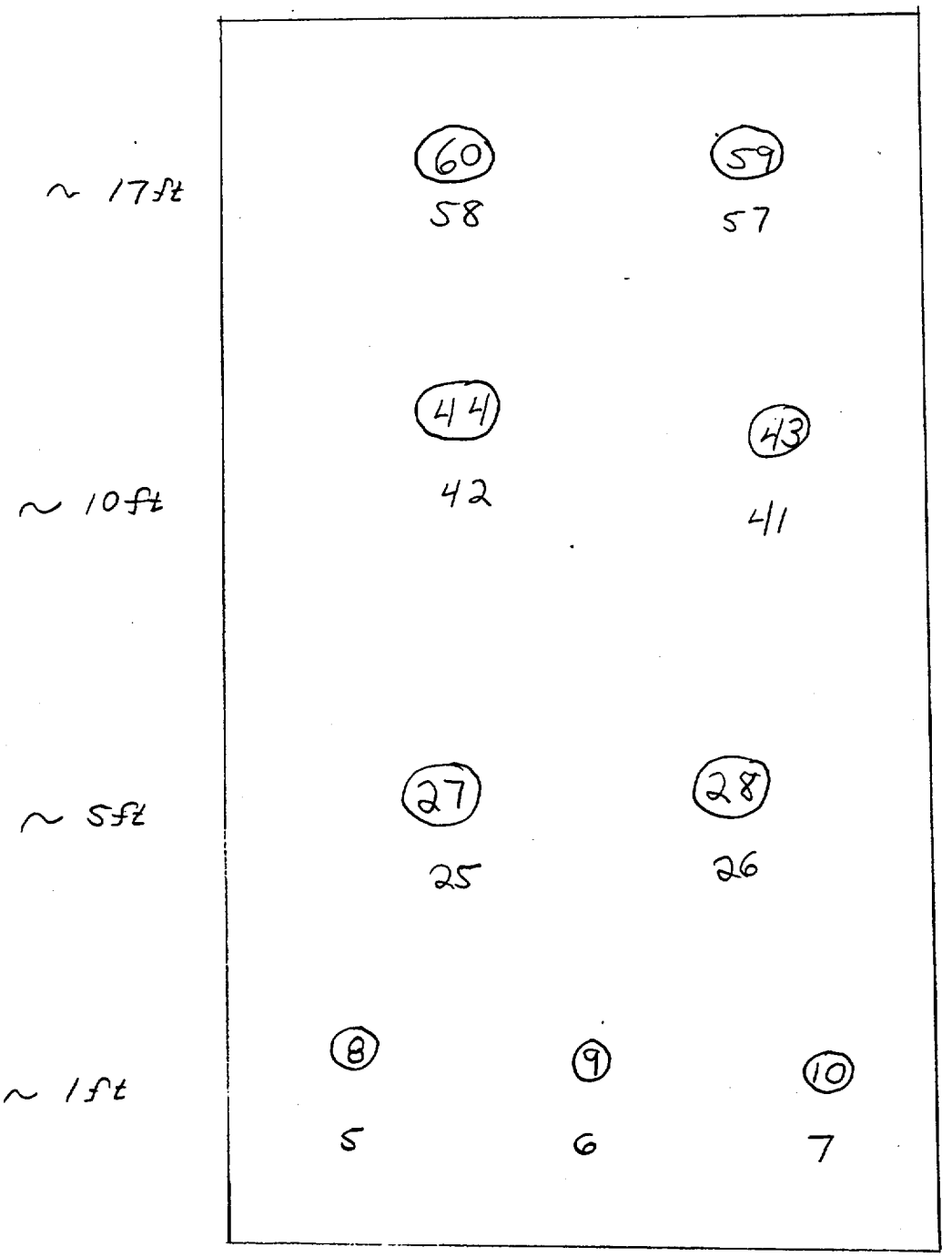
39.	0 dpm	0 dpm/100 cm^2
40.	0 dpm	0 dpm/100 cm^2
41.	0 dpm	0 dpm/gram
42.	10 dpm	7 dpm/gram
43.	0 dpm	0 dpm/100 cm^2
44.	0 dpm	0 dpm/100 cm^2
45.	21 dpm	13 dpm/gram
46.	8 dpm	6 dpm/gram
47.	0 dpm	0 dpm/100 cm^2
48.	13 dpm	13 dpm/100 cm^2
49.	48 dpm	25 dpm/gram
50.	46 dpm	19 dpm/gram
51.	0 dpm	0 dpm/100 cm^2
52.	33 dpm	69 dpm/100 cm^2
53.	4 dpm	2.4 dpm/gram
54.	12 dpm	6 dpm/gram
55.	25 dpm	25 dpm/100 cm^2
56.	4 dpm	4 dpm/100 cm^2
57.	25 dpm	15 dpm/gram
58.	31 dpm	22 dpm/gram
59.	4 dpm	4 dpm/100 cm^2
60.	0 dpm	0 dpm/100 cm^2
61.	19 dpm	14 dpm/gram
62.	2 dpm	2 dpm/gram
63.	4 dpm	4 dpm/100 cm^2
64.	8 dpm	8 dpm/100 cm^2
65.	35 dpm	24 dpm/gram
66.	0 dpm	0 dpm/gram
67.	0 dpm	0 dpm/100 cm^2
68.	0 dpm	0 dpm/100 cm^2
69.	0 dpm	0 dpm/gram
70.	0 dpm	0 dpm/gram
71.	23 dpm	23 dpm/100 cm^2
72.	8 dpm	8 dpm/100 cm^2

1

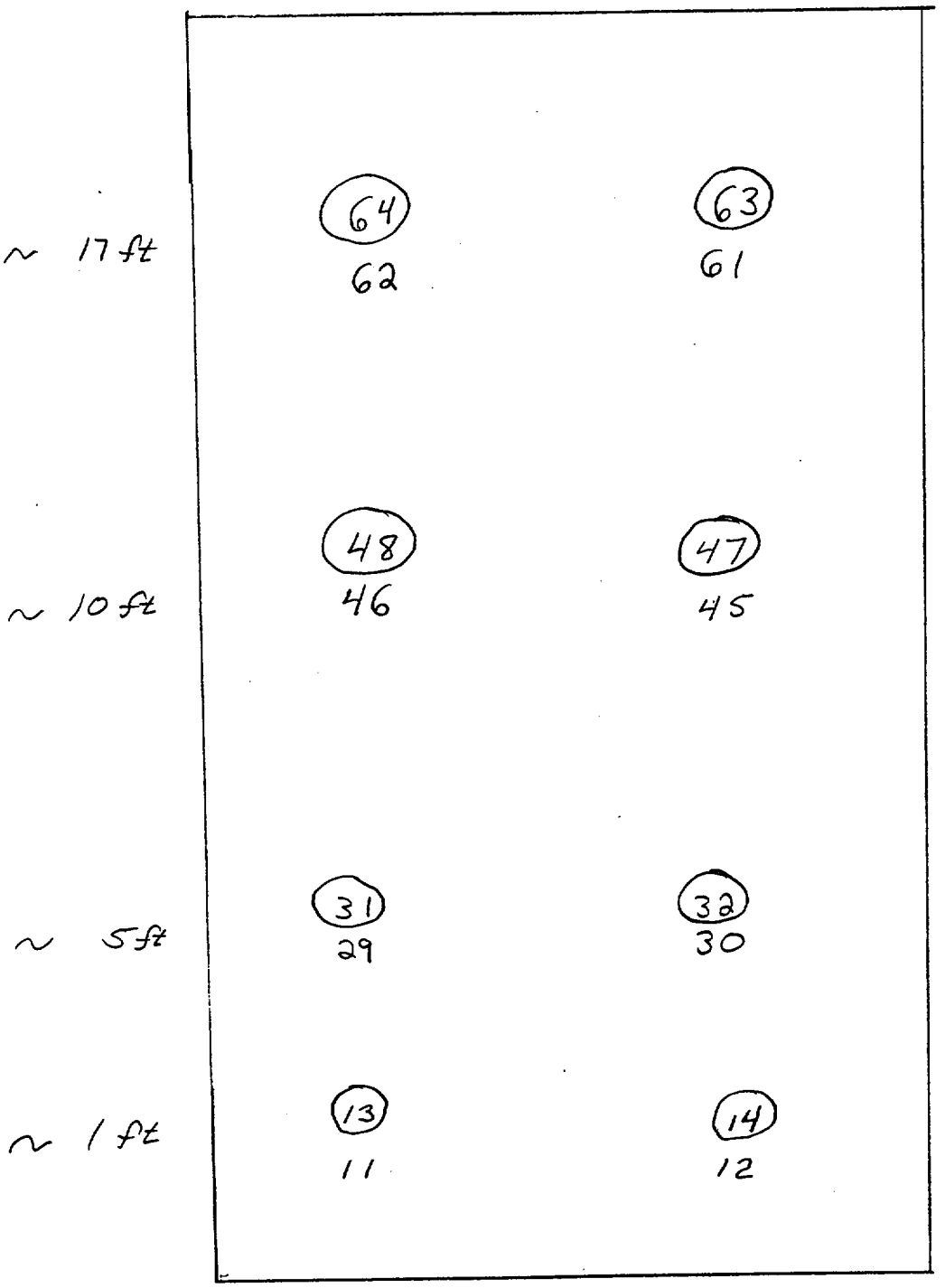
BOTTOM FLOOR

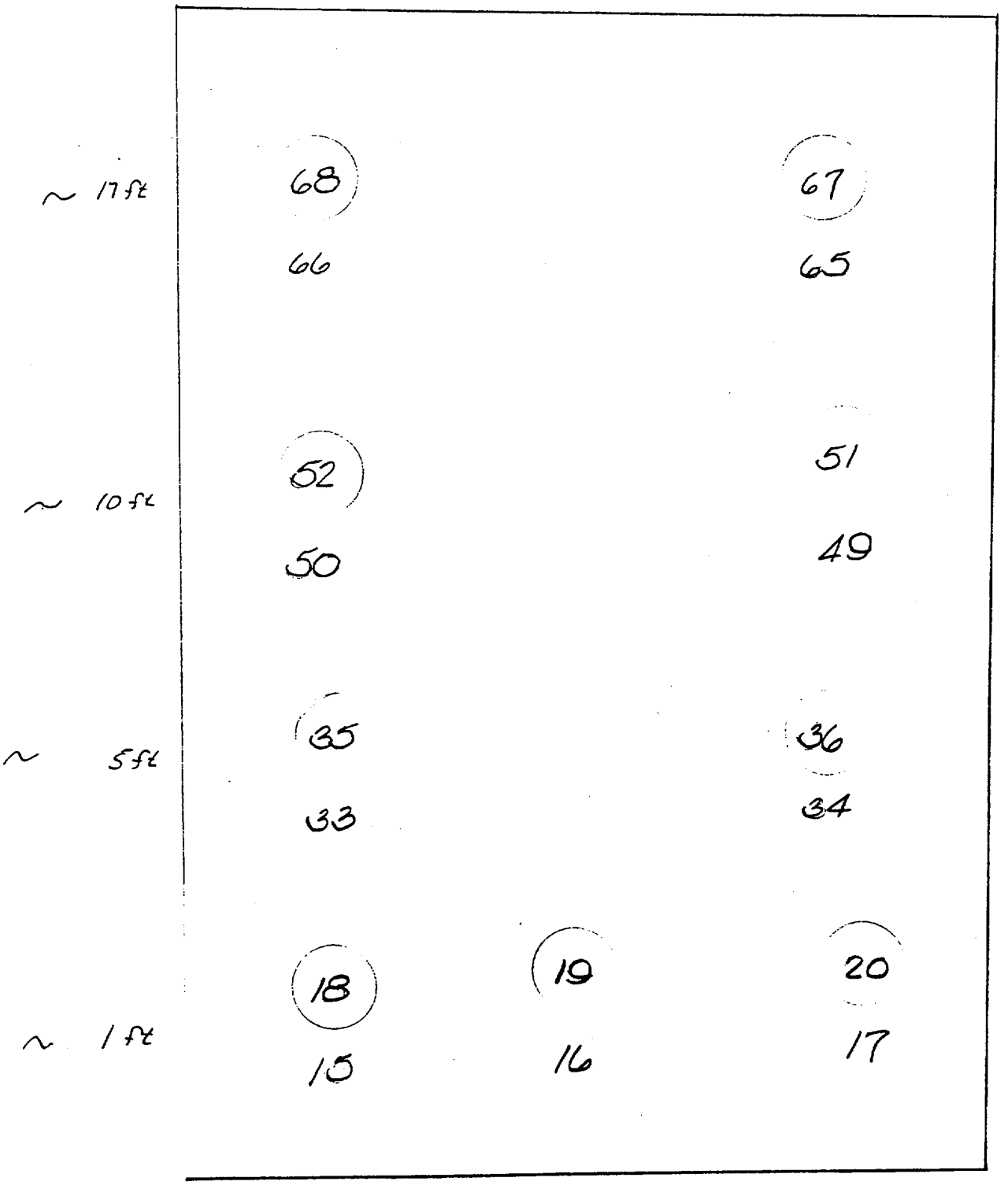


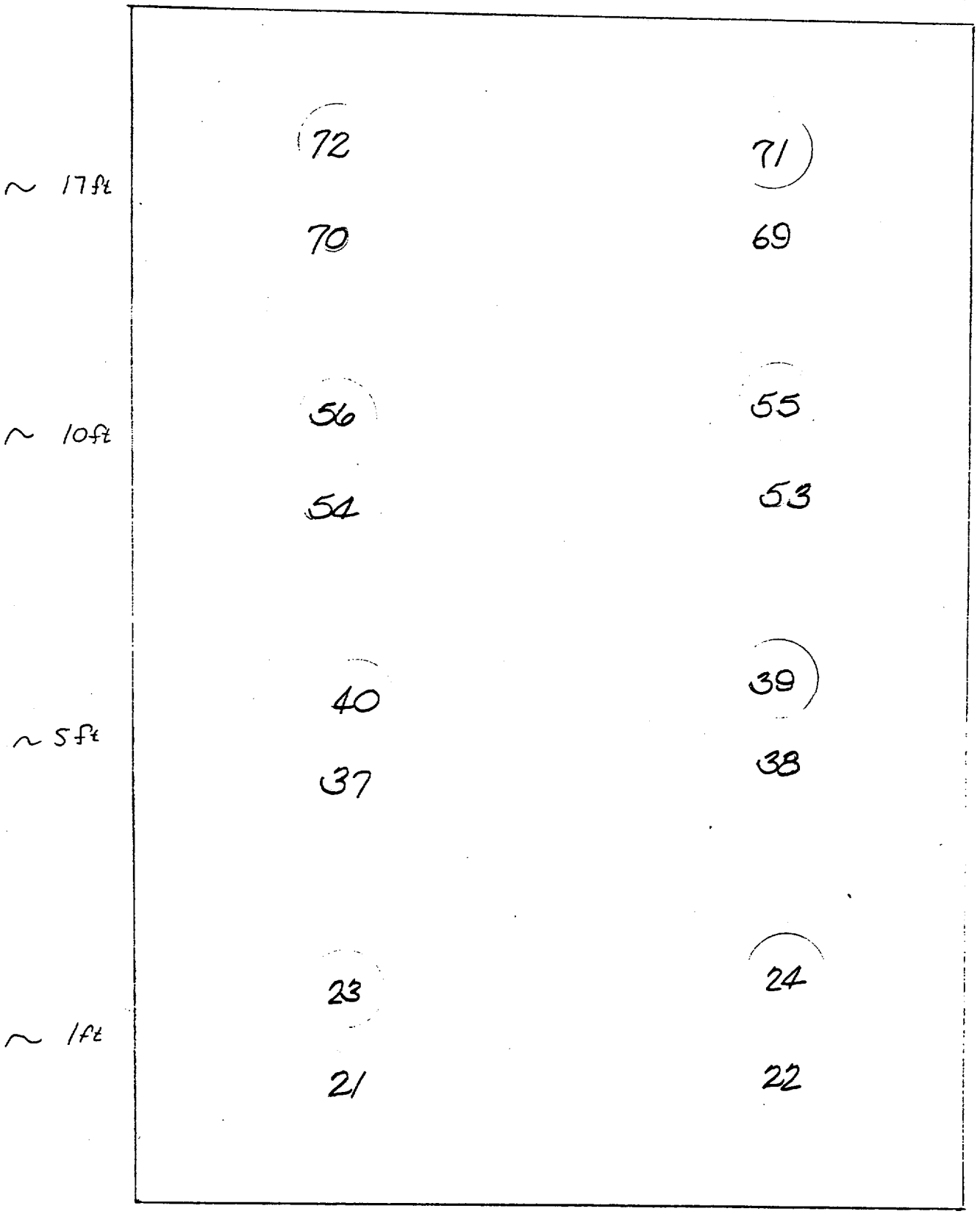
WEST WALL



SOUTH WALL

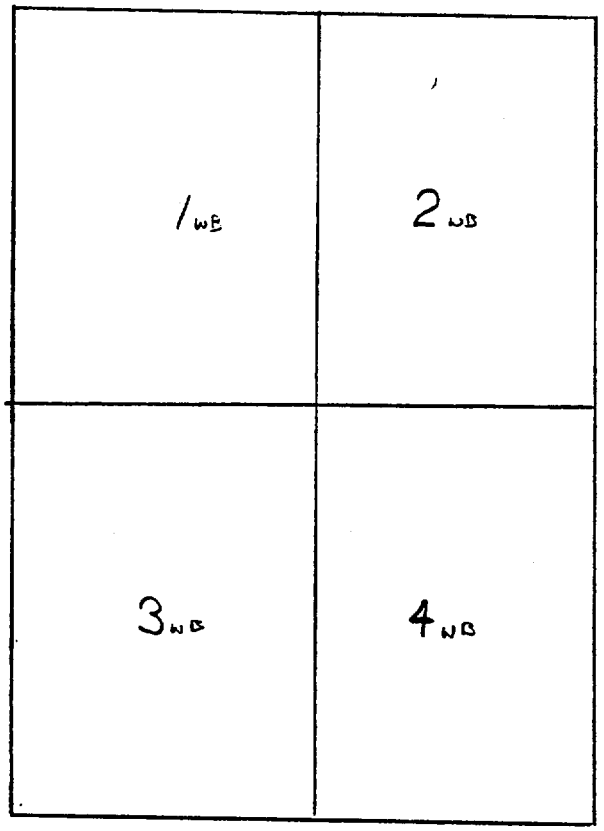



~ 17 ft
68
67
66
65
~ 10 ft
52
51
50
49
~ 5 ft
35
36
33
34
~ 1 ft
18
19
20
15
16
17


~ 17ft
72
71
70
69
~ 10ft
56
55
54
53
~ 5ft
40
39
37
38
~ 1ft
23
24
21
22

AFTER FLOOR WAS CLEANED AND WIRE BRUSHED

N



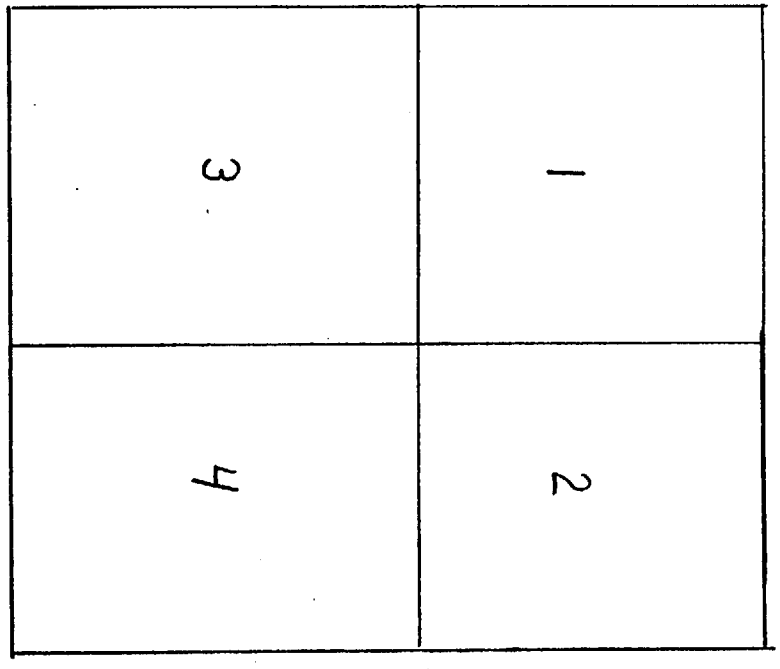
#			0.
#	36.		
#	100		
#	36		
#	36		
#	31		
#			0.
#	37		
#	100		
#	189		
#	27		153 NET
#	29		318 DPM
#			0.
#	38		
#	100		
#	304	2	
#	42		268 NET
#	31		558 DPM
#			0.
#	39		
#	100		
#	412	3	
#	23		376 NET
#	29		783 DPM
#			0.
#	40		
#	100		
#	249	4	213 NET
#	31		444 DPM
#	32		
#			0.

Attachment 8

2 INCHES LOWER THAN ORIGINAL FLOOR LEVEL

N

3	1
4	2



```
#                    0.
#   62
#   100   ←  BKGD   48%
#   24
#   36
#   38
#                    0.
#   63
#   100
#   113561   STANDARD
#   11519
#   64
#                    0.
#   64
#   100
#   108   #1
#   42   175 DPM
#   23
#                    0.
#   65
#   100
#   151   #2
#   25   265 DPM
#   24
#                    0.
#   66
#   100
#   136   #3
#   37   233 DPM
#   19
#                    0.
#   67
#   100
#   118   #4
#   49   196 DPM
#   22   ←
#                    0
```

Sample Number	1wb.	318 dpm	66 dpm/gram
	2wb.	558 dpm	125 dpm/gram
	3wb.	783 dpm	135 dpm/gram
	4wb.	444 dpm	101 dpm/gram
	1F.	175 dpm	32 dpm/gram
	2F.	265 dpm	31 dpm/gram
	3F.	233 dpm	31 dpm/gram
	4F.	196 dpm	38 dpm/gram