

RADIATION SURVEY OF THE
HARVARD AVENUE PROPERTY FOR
ALUMINUM COMPANY OF AMERICA

9707030143 890831
PDR ADOCK 04000501
C PDR

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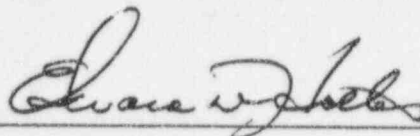
**FINAL REPORT
AUGUST 1989**

Prepared by:

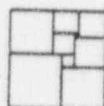


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RADIATION SURVEY
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1. INTRODUCTION

NUS Corporation was contracted by the Aluminum Company of America (ALCOA) in June 1989 to perform a radiation survey of an approximately 9.8 acre site at the Harvard Avenue Property. NUS Corporation performed direct gamma radiation measurements of the ground and buildings. This onsite survey was conducted between June 29 and July 21, 1989.

2. PROCEDURES

2.1 Objectives

The purpose of this radiation survey was two-fold:

- 1) to determine where additional radiation surveys and sampling is necessary and;
- 2) to provide data to aid in future decisions regarding the release of the site for unrestricted use

2.2 Gridding

A 20 foot grid system was established for all open areas surrounding buildings on the site. Each grid point was marked with paint on surfaces and identified with an alphanumeric code. The grid code begins with "A1" at the southeast corner of the site and continued to "EE52" at the northwest corner of the site. South of the property, between the property boundary and the railroad, an approximately 245 foot long section was marked and identified as RR1 through RR12. The grid maps for the site, included in this report as FIGURES 1 through 19, have been scaled to 1 inch equals 20 feet. The grid identification system is denoted on the border of each map.

To aid in future identification of the survey points inside buildings, the grid system selected for the ground floors of Buildings 22, 22A, 26, 26A, 26B, 26C, 53, 60, 65, 70, 70A, 70D, and 70E were based on existing column coordinates for each of these buildings. Building 25, divided into numerous office areas, was marked with an identification number and letter (from 1A through 1CC on the ground floor and from 2A through 2N on the second floor) in each of the rooms and hallways. The ground floor of Building 51 was not marked due to asbestos removal activities at the time of this onsite survey. The grid system, established for the open areas surrounding buildings, was

continued within Buildings 71 and 72. The ground floors of the remaining onsite buildings were marked with an independent grid system within each building at 20 feet intervals. Accessible upper floors, with the exception of Building 25, were marked with nine points consecutively numbered 1 through 9. Fourteen rooms on the second floor of Building 25 were marked and surveyed. Maps of the ground floors of Buildings 71 and 72 are included in FIGURES 1 through 4. FIGURES 20 through 34 are sketches denoting the grid system used in the remainder of the onsite buildings.

2.3 Direct Radiation Measurements

An intense survey was conducted at the southern end of the site including Buildings 71 and 72 and the open area south of Building 71 as shown on FIGURES 1 through 4. The intense survey was continued outside the south fence from the southeast corner for approximately 245 feet along the railway. In addition, the eastern edge of the site was included in the intense survey in an area along the east fence from Grid Square A6 up through Grid Square A41.

This intense survey was performed by making six parallel passes through each 20 x 20 grid square, holding a portable gamma survey instrument within three inches of the surface.

The highest survey reading in each grid square from the intense survey areas are included in TABLES 1 through 6. In addition, the boundary of areas with readings significantly above background are drawn on FIGURES 1 through 4, along with the associated instrument readings. For other areas within the intense survey area where instrument readings were fairly uniform, the highest instrument reading was marked within each Grid Square on FIGURES 1 through 4.

A point survey was conducted for the remainder of the site area. In the open areas surrounding buildings, at each of the grid marks, a reading was taken with the portable gamma survey instrument held within three inches of the surface (ground level). A second reading was taken at each of the grid marks by holding the instrument at waist level.

The point survey readings from the open areas are included in TABLES 7 through 14. Inside the remainder of the buildings, survey readings were taken at each identified point with the portable gamma survey instrument held within three inches of the surface (floor level). The point survey readings from inside the buildings (with the exception of the ground floors of Buildings 71 and 72 which were included in the intense survey area) are included in TABLES 15 through 31.

2.4 Survey Instrument Calibration and Source Checks

The survey instrument used for the onsite survey was a Ludlum Model 19 uR Meter, Serial Number 22529. Before beginning the onsite survey, the survey instrument was calibrated traceable to the National Bureau of Standards on June 28, 1989, by RSO, Incorporated. A copy of the certificate of calibration is attached to this report.

To verify that the survey instrument remained stable throughout the survey period, prior to and after each daily use, the survey instrument was source checked. This source check was performed by placing the survey instrument in a source holder where the distance between the instrument detector and the source was always exactly the same for each source check reading. The survey instrument reading of the check source remained within 18 ± 2 during the entire period that this survey instrument was used for surveying the site area.

3. SURVEY RESULTS

All survey readings are direct readings from the survey instrument which have not been converted into exposure rates in terms of uR/hr. These readings are intended to serve as an indication of relative levels of radioactivity and are not actual dose rates that are encountered in the areas.

3.1 Intense Survey Area Results

The survey results for the intense survey area are presented on FIGURES 1 through 4 and in TABLES 1 through 6.

(7-10) The survey readings in the open area south of Building 71, including the area up to the railroad, ranged from 7 to 370. While most of the area readings are above background (approximately 7), there are three small areas and one large area where the readings exceeded 15. Within this large area, located within Grid Squares B1 through F2 and RR4 through RR7, approximately half of the area reads over 50, with the highest reading at 370. The extent of this large area is shown on FIGURE 1.

The survey readings within Buildings 71 and 72 ranged from 7 to 20. Within these two buildings, as marked on FIGURES 1 through 4, there are twenty locations where the survey readings were 15 or higher. In most cases, these higher readings are associated with locations containing furnaces, fire brick or brick walls.

The survey readings in each grid square along the eastern boundary from Grid Squares A6 through A41, ranged from 7 to 14. Only two areas with readings of 13 and 14 were identified along the fence. The other areas with higher readings of 13 and 14 were found along the walls of buildings (Refer to TABLE 1).

3.2 Point Survey Results From Open Areas Surrounding Buildings

The survey results for the point survey of open areas surrounding buildings are presented on TABLES 7 through 14. The ground level point readings are indicative of potential radioactivity at or near the spot where the reading was obtained. The waist level readings, due to the larger area "observed" by the detector, may be indicative of potential radioactive materials in the surrounding area as well as from the surface below the detector.

The ground level readings at each survey point in the open areas surrounding the buildings ranged from 6 through 18. The waist level readings at each survey point ranged from 7 through 18. Many readings above 13 were along the walls of brick buildings. The highest readings at 16 to 18 were along the side of Building 53 over a casting materials dump area identified by ALCOA representatives.

3.3 Point Survey Results From Inside Buildings

The survey results for the point survey inside buildings are presented in TABLES 15 through 31. These ground and floor level point readings are indicative of potential radioactivity at the spot where the reading was obtained.

The floor level readings at each survey point in the buildings (not including Building 71 and 72) ranged from 6 through 24. Survey readings of 15 or higher were found in Buildings 22 (2nd Floor), 22B (Ground Floor), 22C (Ground Floor), 24 (Ground Floor and 2nd Floor), 25 (Ground and 2nd Floor), 26 (Ground and 2nd Floor), 26A (Ground Floor), 26B (Ground Floor), 26D (Ground Floor), 29 (Ground Floor), 29A (Ground Floor), 29B (Ground Floor), 29C (Ground Floor), 51 (2nd Floor and 5th Floor), 53 (All Floors), 60 (2nd Floor), and 65 (Ground and 2nd Floor). Survey readings of 20 or higher were found in Buildings 24 (2nd Floor) and Building 65 (Ground Floor).

4. FINDINGS AND RECOMMENDATIONS

4.1 Finding #1

Increased radiation levels were observed over a large area at the south end of the property. The area is roughly located within grid squares B1 through F2 and RR4 through RR7 and is outlined on Figure 1.

Recommendation #1

The area identified in Figure 1 as having higher readings should be the subject of further investigation to identify the radionuclides present, to determine the quantity of each nuclide present, and to locate the precise boundary of the area with increased activity.

The following steps are recommended to accomplish the identification and quantification of the nuclides present.

- 1) Obtain a soil sample from the point with the highest reading.
- 2) Obtain additional soil samples randomly from the area identified in Figure 1 as having higher readings.
- 3) Analyze all soil samples for radionuclide type and quantity.
- 4) Determine, based on the results of the analysis, if the area is "contaminated" and/or if official notification to the State of Ohio or the EPA is required.
- 5) Drill sufficient bore holes in order to define the extent of the contaminated area, for the purpose of estimating the level of effort required for potential remedial action.

4.2 Finding #2

Many of the readings above background throughout the onsite buildings were found to be along brick walls, furnaces, and five brick structures. The construction material used in the buildings for furnaces and walls including firebricks, bricks and mortar is a suspected cause of elevated readings at numerous locations within the buildings.

Recommendation #2

Samples should be obtained of the brick and mortar used to construct furnaces and walls which have been indicated on this survey as having elevated readings. All samples obtained (samples of mortar and brick must be maintained separately) should be analyzed for nuclide type and quantity. Analysis needs to be performed to determine if the bricks or mortar are the source of the increased levels of radiation, and if the source is representative of naturally occurring isotopes. Also, the determination needs to be made if the amount of radioactive material present warrants further action. Samples for analysis should be selected from the areas listed below.

Table 2	B-9	Figure 2
	B-12	Figure 2
	C-10	Figure 2
	C-12	Figure 2
	D-9	Figure 2
	D-11	Figure 2
Table 3	F-9-71	Figure 2
	G-7	Figure 2
	G-13	Figure 2
	H-10	Figure 2
Table 4	I-9 72	Figure 2
	J-6 71	Figure 3
	J-9-72	Figure 4
	K-7	Figure 4
	K-8 71	Figure 4
	K-13-72A	Figure 4
	L-9	Figure 4
	L-10	Figure 4
	M-9 72	Figure 4
	M-10	Figure 4
Table 5	O-6 71	Figure 3
	P-8	Figure 4
	P-13-72A	Figure 4
	Q-9 72	Figure 4
	Q-12	Figure 4
Table 7	D-20 22	Figure 5
	D-28 25	Figure 7
	F-24 22	Figure 6
Table 11	N-25 29	Figure 11

29

4.3 Finding #3

There are some onsite areas where higher level readings cannot be attributed to specific building materials. These areas are divided into three categories for investigation as described below:

Category #3a. Sample grid points identified as follows:

Table 2	B-10 72	Figure 2
Table 5	N-8 72	Figure 4
Table 5	P-7 71	Figure 4

~~These points in the intense survey area have been identified as relating to materials on the floor.~~

Recommendation #3a: Samples of the material on the floor at each of the three locations should be obtained and analyzed for nuclide type and quantity. The results of the analysis should be reviewed prior to making any further recommendations pertaining to these three areas.

Category #3b. Sample grids identified as follows:

Table 1	A-13	Fence	Figure 2
Table 1	A-20	Fence	Figure 5
Table 1	A-37	by Bldg 70D	Figure 8
Table 2	B-5	by Bldg 71	Figure 1

These sample grid points, located in the intense survey area have been identified as having high readings without any specific structures around them.

Recommendation #3b: Samples of soil (A-13, A-20) or samples of the surface concrete and soil directly underneath the concrete (A-37, B-5) should be obtained for analysis. The results of the analysis should be reviewed to determine any additional action required.

Category #3c. Approximately 83 points in the point survey area outside of buildings and 319 points inside buildings exhibit readings that are 13 and above. Most of these points also exhibit 13 and above waist level readings.

Recommendation #3c: The grid squares directly adjacent to all 13 and above readings should first be surveyed using the methodology used for the intense survey area. The intense survey methodology would enable some determination as to the specific location of the radioactivity. Additional sampling needs i.e., building material samples, dirt/soil samples, core drilling, etc., can be determined based on the results of the intense survey.

* NOTE: ¹² Particular attention should ¹⁰ be given to grid rows C-17 through Q-17, D-29 through O-29, and F-45 through Z-45 as these three rows exhibit almost one half of the readings above 13 in the point survey area outside of the buildings.

4.4 Finding #4

This survey should not be considered to have revealed all of the areas or the full extent of areas with increased levels of radioactivity higher than is normally present in the environment for Ohio.

The instrument used for this survey detects gamma and x-ray radiations emitted by the decay of radioactive materials. Any radioactive material that has been covered over with concrete, buried under rock or soil, or dispersed during past construction activities may not be revealed by this surface survey. A major portion of the site is covered by concrete which shields the radiation from the survey instrument.

Recommendation #4 Random core drillings at various locations around the 9.8 acre site should be performed. Some of the random core drillings should be performed at the areas previously identified by ALCOA as probable dump sites. Other core drillings should be done at random locations inside and outside the buildings throughout the site.

NOTE: Completion of recommendation 3c may result in the identification of additional areas requiring core drilling to determine the extent of the area. These areas should be excluded from random sample locations.

1.07
 2.54
 BLDG. 71 5 5 70
 72 5
 24 7
 22 7
 25 3
 TABLE 1

SURVEY RESULTS FROM INTENSE SURVEY AREAS

GRID
 I.D. SURVEY
 READING NOTE:

GRID SURVEY
 I.D. READING NOTE:

All readings below apply to
 the partial grid east of the
 A columns up to the East Fence

A5 Fence - 9.4	A1 1539 13.77
A6 Fence - 11 10.34	A2 1539 13.77
A7 Fence - 11 10.34	A3 1537 10.71 Large boxes
A8 Fence - 12 11.28	A4 1538 12.24
A9 Fence - 13 12.22	A5 1538 12.24
A10 Fence - 10 9.4	A6 9411 10.34 Toward Fence
A11 Fence - 12 11.28	A7 - 8 7.52
A12 Fence - 13 12.22	A8 - 11 10.34 Toward Fence
A13 Fence - 14 13.16	A9 - 11 10.34 By Bldg. 72
A14 Fence - 14 13.16	A10 - 13 12.22 By Bldg. 72
A15 Fence - 13 12.22	A11 - 13 12.22 By Bldg. 72
	A12 - 13 12.22 By Bldg. 72
A16 Fence - 9411 10.34	A13 - 13 12.22 By Bldg. 72
A17 Fence - 9 8.46	A14 - 13 12.22 Toward Fence
A18 Fence - 9 8.46	A15 - 14 13.16 Toward Fence & by Bldg. 72A
A19 Fence - 8 7.52	A16 - 14 13.16 By Bldg. 24
A20 Fence - 14 13.16	A17 - 14 13.16 By Bldg. 24
A21 Fence - 13 12.22	A18 - 11 10.34
A22 Fence - 8 7.52	A19 - 11 10.34
A23 Fence - 8 7.52	A20 - 11 10.34
A24 Fence - 8 7.52	A21 - 9 8.46 Toward Fence
A25 Fence - 8 7.52	A22 - 8 7.52
A26 Fence - 10 9.4 Drums to East	A23 - 8 7.52
A27 Fence - 12 11.28 Drums to East	A24 - 8 7.52
A28 Fence - 12 11.28	A25 - 9 8.46
A29 Fence - 12 11.28	A26 - 10 9.4
A30 Fence - 10 9.4	A27 - 11 10.34
A31 Fence - 9 8.46	A28 - 11 10.34 Toward Fence
A32 Fence - 10 9.4	A29 - 11 10.34 Toward Fence
A33 Fence - 11 10.34	A30 - 10 9.4 Toward Fence
A34 Fence - 10 9.4	A31 - 12 11.28 By Bldg. 70C
A35 Fence - 9 8.46	A32 - 11 10.34 By Bldg. 70C
A36 Fence - 9 8.46	A33 - 13 12.22 By Bldg. 70E
A37 Fence - 10 9.4	A34 - 13 12.22 By Bldg. 70E
A38 Fence - 10 9.4	A35 - 13 12.22 By Bldg. 70E
A39 Fence - 11 10.34	A36 - 13 12.22 By Bldg. 70D
A40 Fence - 9 8.46	A37 - 14 13.16 By Bldg. 70D
A41 Fence - 10 9.4	A38 - 12 11.28 By Bldg. 70D
	A39 - 10 9.4
	A40 - 10 9.4
	A41 - 10 9.4

The grid identifier is located in the northeast corner of the particular grid area.

1.07 (73)

2.54 (5)

TABLE 2
SURVEY RESULTS FROM INTENSE SURVEY AREAS

GRID I.D.	SURVEY READING	NOTE:	GRID I.D.	SURVEY READING	NOTE:
B1	1538 12.24		C1	153120 183.6	SE Corner by Fence
B2	1538 12.24		C2	1538 12.24	
B3	1537 10.71	Large Boxes	C3	1538 12.24	Large Boxes
B4	15312 18.36	NW Corner by Manhole	C4	15312 18.36	NE Corner by Manhole
B5	15314 21.42	By Bldg. 71	C5	15312 18.36	By Bldg. 71
B6	9410 9.4		C6	94 8 7.52	
B7	94 9 8.46		C7	- 10 9.4	Dirt on Floor
<u>1.05</u> B8	66 14 9.24	Fire Brick	C8	- 9 8.46	
B9	9419 17.86	Furnace	C9	- 15 14.1	Furnace
B10	- 12 11.28	6" Dirt	C10	- 18 16.92	In Oven
B11	- 15 14.1	By East Wall	C11	- 17 15.98	In Oven
B12	- 15 14.1	By East Wall	C12	- 18 16.92	By Brick Wall
B13	- 15 14.1	By East Wall	C13	- 16 15.04	By Brick Wall

GRID I.D.	SURVEY READING	NOTE:	GRID I.D.	SURVEY READING	NOTE:
D1	15370 566.1	NW Corner	E1	153240 367.2	NE Corner
D2	153310 474.3	SW Corner	E2	153300 459	SE Corner
D3	153 8 12.24		E3	153 8 12.24	
D4	153 8 12.24		E4	153 9 13.77	
D5	153 12 18.36	By Bldg. 71	E5	153 9 13.77	
D6	94 7 6.58		E6	94 8 7.52	
D7	- 19 17.86	Furnace	E7	- 9 8.46	
D8	- 19 17.86	Furnace	E8	- 8 7.52	
D9	- 14 13.76	By Brick Wall	E9	- 16 15.04	By Brick Wall
D10	- 18 16.92	By Oven	E10	14 13.16	By Brick Wall
D11	- 18 16.92	In Oven	E11	- 13 12.22	
D12	- 19 17.86	By Brick Wall	E12	- 13 12.22	
D13	- 19 17.86	By Brick Wall	E13	- 14 13.16	

The grid identifier is located in the northeast corner of the particular grid area.

2.54 (20)
1.05 (1)
1.07 (30)

TABLE 3
SURVEY RESULTS FROM INTENSE SURVEY AREAS

GRID I.D.	SURVEY READING	NOTE:	GRID I.D.	SURVEY READING	NOTE:
F1	15365	99.45 NE Corner	G2	15310	15.3
F2	15338	58.14 SE Corner	G3	1539	13.77
F3	1538	12.24	G4	1539	13.77
F4	1539	13.77	G5	15310	15.3
F5	1539	13.77	G6	6613	8.58 Fire Brick
F6	.949	8.46	G7	6615	9.9 Fire Brick
F7	-10	9.4	G8	6614	9.24 Fire Brick
F8	-9	8.46	G9	.948	7.52
F9	-17	15.98 By Brick Wall	G10	-14	13.16 By Brick Wall
F10	-12	11.28	G11	-13	12.22
F11	-12	11.28	G12	-12	11.28
F12	-12	11.28	G13	-18	16.92 By Brick Wall
F13	-12	11.28			

GRID I.D.	SURVEY READING	NOTE:	GRID I.D.	SURVEY READING	NOTE:
H2	15313	19.89 By Brick	I2	15211	16.83
H3	1538	12.24	I3	1538	12.24
H4	1538	12.24	I4	1538	12.24
H5	1539	13.77	I5	1539	13.77
H6	.9415	14.1 Fire Brick	I6	.669	5.94
H7	-15	14.1 Fire Brick	I7	.669	5.94
H8	-13	12.22 Fire Brick	I8	.669	5.94
H9	-8	7.52	I9	.9417	15.98 By Brick Wall
H10	-13	12.22 By Brick Wall	I10	-15	14.1 By Brick Wall
H11	-13	12.22	I11	-13	12.22
H12	-12	11.28	I12	-11	10.34
H13	-14	13.16	I13	-14	13.16

The grid identifier is located in the northeast corner of the particular grid area.

1.07 (26)
1.05 (6)
2.54 (17)

TABLE 4
SURVEY RESULTS FROM INTENSE SURVEY AREAS

GRID I.D.	SURVEY READING	NOTE:	GRID I.D.	SURVEY READING	NOTE:
J2	1.53 7 10.71		K3	1.53 12 18.36	By Dumpster
J3	1.53 13 19.89	By Foundation	K4	1.53 12 18.36	
J4	1.53 12 18.36	By Foundation	K5	1.53 11 16.83	
J5	1.53 9 12.77		K6	.94 8 7.52	
J6	.94 12 11.28	By South Wall	K7	- 13 12.22	In Furnace
J7	- 8 7.52		(.66) K8	.66 15 9.9	Fire Brick
J8	- 9 8.46		K9	.94 16 15.04	By Brick Wall
J9	- 17 15.98	By Brick Wall	K10	- 15 14.1	By Brick Wall
J10	- 15 14.1	By Brick Wall	K11	- 12 11.28	
J11	- 13 12.22		K12	- 13 12.22	
J12	- 11 10.34		K13	- 14 13.16	By Brick Wall
J13	- 13 12.22				

GRID I.D.	SURVEY READING	NOTE:	GRID I.D.	SURVEY READING	NOTE:
L3	1.53 11 16.83	Along Curb	M4	1.53 8 12.24	
L4	1.53 8 12.24		M5	1.53 7 10.71	
L5	1.53 12 18.36		M6	.94 11 10.34	Dirt
L6	.94 11 10.34	Dirt	M7	- 10 9.4	
L7	- 8 7.52		M8	- 14 13.16	By Wall
L8	- 9 8.46		M9	- 19 17.86	By Wall
L9	- 17 15.98	Brick Walls	M10	- 14 13.16	By Brick Wall
L10	- 15 14.1	By Brick Wall	M11	- 13 12.22	
L11	- 12 11.28		M12	- 12 11.28	
L12	- 12 11.28		M13	- 12 11.28	
L13	- 12 11.28				

The grid identifier is located in the northeast corner of the particular grid area.

1.07 (3)
2.54 (12)
1.05 (1)

TABLE 5
SURVEY RESULTS FROM INTENSE SURVEY AREAS

GRID SURVEY
I.D. READING NOTE:

N4 1538 12.24
N5 1538 12.24
N6 .9411 10.34
N7 -11 10.34 Dirt
N8 -12 11.28 Dirt
N9 -14 13.16 By Brick Wall
N10 -11 10.34
N11 -11 10.34
N12 -12 11.28
N13 -12 11.28

GRID SURVEY
I.D. READING NOTE:

~~15304~~ 1218.36 Spot By Curb
~~15305~~ 1218.36
(06) .6620 13.2 Fire Brick
(07) .6619 12.54 Fire Brick
(08) .6618 11.88 Fire Brick
O9 .9412 11.28
O10 -11 10.34
O11 -10 9.4
O12 -12 11.28
O13 -13 12.22 By Wall

GRID SURVEY
I.D. READING NOTE:

P4 15312 18.36 Along Crack
P5 15313 19.89
P6 Point Survey
P7 .9413 12.22 Broken
Fluorescent Bulb
P8 -17 15.98 By Brick Wall
P9 -15 14.1 By Brick Wall
P10 -11 10.34
P11 -11 10.34
P12 -11 10.34
P13 -13 12.22 By Brick Wall

GRID SURVEY
I.D. READING NOTE:

Q5 15313 19.89
Q6 Point Survey
Q7 Point Survey
Q8 Point Survey
Q9 .9415 14.1 By Wall
Q10 -15 14.1 By Brick Wall
Q11 -12 11.28 By Wall
Q12 -14 13.16 By Wall
Q13 Point Survey

GRID SURVEY
I.D. READING

R5 15312 18.36

The grid identifier is located in the northeast corner of the particular grid area.

1,07
2,54

1,07 - (24)
2,54 - (8)
1,05 - (3)

TABLE 6
SURVEY RESULTS FROM INTENSE SURVEY AREAS

GRID	SURVEY
I.D.	READING NOTE:

Survey Along Railroad and Siding, South of South Fence
Grid Numbers Increasing From East to West

RR1	15322 33.66 Spot
RR2	15312 18.36
RR3	15315 22.95 NW Corner
RR4	153100 153. NW Corner
RR5	153225 344.25 Middle North Edge
RR6	15390 137.7 NW Corner
RR7	15370 107.1 NE Corner
RR8	15314 21.42 Spot Toward NW Corner
RR9	15320 30.6 Middle North Edge
RR10	15315 22.8 Middle Between Fence and Railroad
RR11	15310 15.3
RR12	1539 13.77

The grid identifier is located in the northeast corner of the particular grid area.

2.54 → (12)

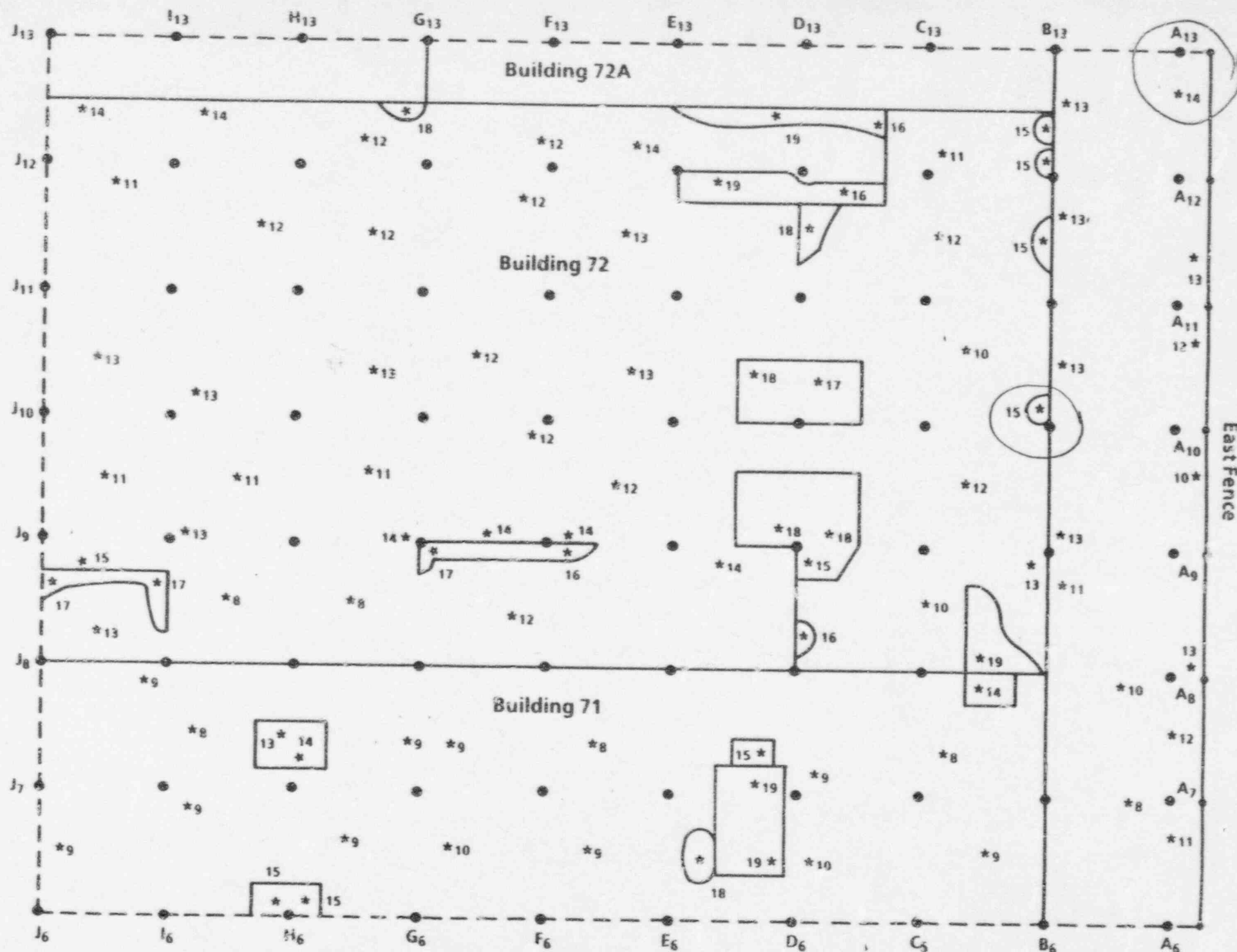


FIGURE 2 GRID MAP FOR INTENSE SURVEY

*Denotes Survey Reading

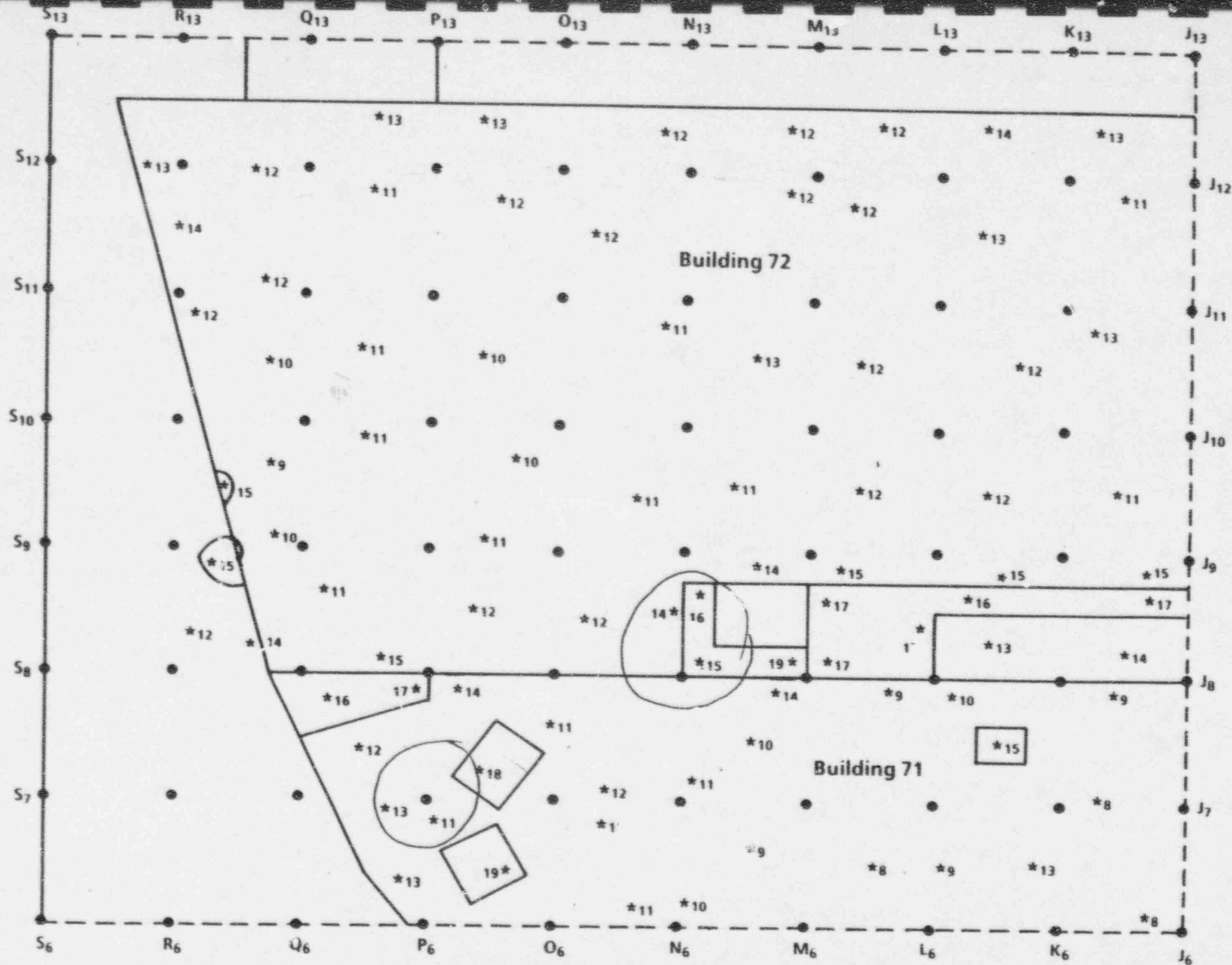


FIGURE 4 GRID MAP FOR INTENSE SURVEY

*Denotes Survey Reading

TABLE 5
SURVEY RESULTS FROM INTENSE SURVEY AREAS

GRID SURVEY
I.D. READING NOTE:

South Fence
N4 8
N5 8
N6 11
N7 11 Dirt
N8 12 Dirt
N9 14 By Brick Wall
N10 11
N11 11
N12 12
N13 12
Point Survey

GRID SURVEY
I.D. READING NOTE:

South Fence
O4 12 Spot By Curb
O5 12
O6 20 Fire Brick
O7 19 Fire Brick
O8 18 Fire Brick
O9 12
O10 11
O11 10
O12 12
O13 13 By Wall
Point Survey

GRID SURVEY
I.D. READING NOTE:

South Fence
P4 12 Along Crack
P5 13
P6 Point Survey
P7 13 Broken
Fluorescent Bulb
P8 17 By Brick Wall
P9 15 By Brick Wall
P10 11
P11 11
P12 11
P13 13 By Brick Wall
Point Survey

GRID SURVEY
I.D. READING NOTE:

South Fence
Q5 13
Q6 Point Survey
Q7 Point Survey
Q8 Point Survey
Q9 15 By Wall
Q10 15 By Brick Wall
Q11 12 By Wall
Q12 14 By Wall
Q13 Point Survey
Point Survey

GRID SURVEY
I.D. READING

South Fence
R5 12
Point Survey

1,07 - (35)

TABLE 6
SURVEY RESULTS FROM INTENSE SURVEY AREAS

GRID	SURVEY
<u>I.D.</u>	<u>READING</u> <u>NOTE:</u>

Survey Along Railroad and Siding, South of South Fence
Grid Numbers Increasing From East to West

RR1	1.53	22	33.7	Spot
RR2		12	18.4	
RR3		15	22.95	NW Corner
RR4		100	153	NW Corner
RR5		225	344.25	Middle North Edge
RR6		90	137.7	NW Corner
RR7		70	107.1	NE Corner
RR8		14	21.42	Spot Toward NW Corner
RR9		20	30.6	Middle North Edge
RR10		15	22.15	Middle Between Fence and Railroad
RR11		10	15.3	
RR12		9	13.77	

TABLE 7
POINT SURVEY RESULTS FROM OPEN AREAS SURROUNDING BUILDINGS

GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL
B15	Bldg.24		C15	Bldg.24		D15	Bldg.24	
B16	Bldg.24		C16	Bldg.24		D16	Bldg.24	
B17	0.949 8.46	8	C17	0.9413 12.22	15	D17	.9413 12.22	16
B18	.947 6.58	7	C18	- 10 9.4	9	D18	- 10 9.4	9
B19	.948 7.52	7	C19	- 9 8.46	9	D19	- 9 8.46	11
B20	.947 6.58	7	C20	- 9 8.46	8	D20	- 12 11.58	12
B21	.948 7.52	9	C21	- 10 9.4	8	D21	- 11 10.34	13
B22	- 7 6.58	8	C22	- 9 8.46	8	D22	- 9 8.46	10
B23	- 8 7.52	10	C23	- 8 7.52	8	D23	- 11 10.34	14
B24	- 11 10.34	9	C24	- 7 6.58	7	D24	- 10 9.4	11
B25	- 10 9.4	8	C25	- 8 7.52	10	D25	- 14 13.16	12
B26	- 8 7.52	9	C26	- 11 10.34	9	D26	- 11 10.34	12
B27	- 9 8.46	8	C27	- 9 8.46	9	D27	- 11 10.34	12
B28	- 10 9.4	9	C28	- 9 8.46	11	D28	- 13 12.22	13
B29	- 9 8.46	8	C29	- 11 10.34	8	D29	- 16 15.04	16
B30	- 10 9.4	10	C30	- 9 8.46	11	D30	- 14 13.16	13
B31	Bldg.70C		C31	Bldg.70C		D31	Bldg.70C	
B32	Bldg.70E		C32	Bldg.70E		D32	Bldg.70E	
B33	Bldg.70E		C33	Bldg.70E		D33	Bldg.70E	
B34	Bldg.70E		C34	Bldg.70E		D34	Bldg.70E	
B35	Bldg.70D		C35	Bldg.70D		D35	Bldg.70D	
B36	Bldg.70D		C36	Bldg.70D		D36	Bldg.70D	
B37	Bldg.70D		C37	Bldg.70D		D37	Bldg.70D	
B38	- 9 8.46	7	C38	- 10 9.4	11	D38	- 10 9.4	9
B39	- 7 6.58	7	C39	- 8 7.52	8	D39	- 11 10.34	11
B40	- 8 7.52	7	C40	- 9 8.46	9	D40	- 9 8.46	9
B41	- 7 6.58	7	C41	- 10 9.4	8	D41	- 9 8.46	9
Outside Gate			C42	- 11 10.34	10	D42	- 12 11.28	11
			C43	- 11 10.34	10	D43	- 11 10.34	12
			C44	- 10 9.4	10	D44	- 11 10.34	11
			C45	- 10 9.4	10	D45	- 10 9.4	10
			C46	- 10 9.4	10	D46	- 10 9.4	10
			North Fence			North Fence		

1,07 → 64

1,11 - 64

TABLE 8
POINT SURVEY RESULTS FROM OPEN AREAS SURROUNDING BUILDINGS

GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL
E15	Bldg.24		F15	Bldg.24		G15	Bldg.24	
E16	Bldg.24		F16	Bldg.24		G16	Bldg.24	
E17	.941514.1	14	F17	.941312.22	15	G17	.941312.22	13
E18	-11 10.34	11	F18	-10 9.4	10	G18	-9 8.46	9
E19	-12 11.28	13	F19	-8 7.52	10	G19	-12 11.28	14
E20	Bldg.22B		F20	Bldg.22B		G20	Bldg.22B	
E21	Bldg.22B		F21	Bldg.22B		G21	Bldg.22B	
E22	Bldg.21		F22	Bldg.21		G22	Bldg.22	
E23	Bldg.21		F23	Bldg.21		G23	Bldg.22	
E24	Bldg.21		F24	-14 13.16	13	G24	-11 10.34	11
E25	-9 8.46	13	F25	-10 9.4	12	G25	-10 9.4	10
E26	-12 11.28	13	F26	-12 11.28	11	G26	-10 9.4	10
E27	Bldg.25		F27	Bldg.25		G27	Bldg.25	
E28	Bldg.25		F28	Bldg.25		G28	Bldg.25	
E29	-15 14.1	14	F29	-11 10.34	13	G29	-16 15.04	15
E30	-10 9.4	12	F30	-14 13.16	13	G30	-13 12.22	13
E31	Bldg.70B		F31	Bldg.70B		G31	Bldg.70B	
E32	Bldg.70E		F32	Bldg.70E		G32	Bldg.70E	
E33	Bldg.70E		F33	Bldg.70E		G33	Bldg.70E	
E34	Bldg.70E		F34	Bldg.70E		G34	Bldg.70E	
E35	Bldg.70D		F35	Bldg.70D		G35	Bldg.70D	
E36	Bldg.70D		F36	Bldg.70D		G36	Bldg.70D	
E37	Bldg.70D		F37	Bldg.70D		G37	Bldg.70L	
E38	-9 8.46	8	F38	-10 9.4	9	G38	-10 9.4	8
E39	-11 10.34	10	F39	-9 8.46	10	G39	-10 9.4	11
E40	-13 12.22	15	F40	Bldg.65		G40	Bldg.65	
E41	-11 10.34	11	F41	Bldg.65		G41	Bldg.65	
E42	-11 10.34	12	F42	Bldg.65		G42	Bldg.65	
E43	-15 14.1	12	F43	Bldg.65		G43	Bldg.65	
E44	-15 14.1	14	F44	Bldg.65		G44	Bldg.65	
E45	-13 12.22	8	F45	-14 13.16	13	G45	-15 14.1	12
E46	-11 10.34	10	F46	-11 10.34	10	G46	-11 10.34	11
North Fence			F47	-9 8.46	10	G47	-11 10.34	11
			North Fence			North Fence		

1.11, 1.07
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TABLE 9
POINT SURVEY RESULTS FROM OPEN AREAS SURROUNDING BUILDINGS

GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL
H15	Bldg.24		I15	Bldg.24		J15	Bldg.24	
H16	Bldg.24		I16	Bldg.24		J16	Bldg.24	
H17	.94 9 8.46 9		I17	.94 10 9.4 11		J17	.94 10 9.4 10	
H18	- 7 6.58 8		I18	10 9.4 10		J18	- 9 8.46 10	
H19	-11 10.34 13		I19	11 10.34 12		J19	-10 9.4 12	
H20	Bldg.22A		I20	Bldg.22A		J20	Bldg.22A	
H21	Bldg.22A		I21	Bldg.22A		J21	Bldg.22A	
H22	Bldg.22		I22	Bldg.22		J22	Bldg.22	
H23	Bldg.22		I23	Bldg.22		J23	Bldg.22	
H24	-11 10.34 11		I24	10 9.4 11		J24	- 8 7.51 9	
H25	- 8 7.52 8		I25	8 7.52 8		J25	- 9 8.46 10	
H26	-12 11.28 12		I26	10 9.4 12		J26	- 9 8.46 11	
H27	Bldg.25		I27	Bldg.25		J27	Bldg.25	
H28	Bldg.25		I28	Bldg.25		J28	Bldg.25	
H29	-14 13.16 13		I29	13 12.22 12		J29	-13 12.22 12	
H30	-12 11.28 12		I30	12 11.28 12		J30	-12 11.28 11	
H31	Bldg.70B		I31	Bldg.70B		J31	Bldg.70B	
H32	Bldg.70E		I32	Bldg.70E		J32	Bldg.70E	
H33	Bldg.70E		I33	Bldg.70E		J33	Bldg.70E	
H34	Bldg.70E		I34	Bldg.70E		J34	Bldg.70E	
H35	Bldg.70D		I35	Bldg.70D		J35	Bldg.70D	
H36	Bldg.70D		I36	Bldg.70D		J36	Bldg.70D	
H37	Bldg.70D		I37	Bldg.70D		J37	Bldg.70D	
H38	-10 9.4 9		I38	9 8.46 9		J38	-11 10.34 10	
H39	-10 9.4 9		I39	8 7.52 9		J39	- 9 8.46 8	
H40	Bldg.65		I40	Bldg.65		J40	Bldg.65	
H41	Bldg.65		I41	Bldg.65		J41	Bldg.65	
H42	Bldg.65		I42	Bldg.65		J42	Bldg.65	
H43	Bldg.65		I43	Bldg.65		J43	Bldg.65	
H44	Bldg.65		I44	Bldg.65		J44	Bldg.65	
H45	-11 13.66 14		I45	15 14.1 13		J45	-15 14.1 13	
H46	-11 10.34 11		I46	13 12.22 10		J46	-10 9.4 10	
H47	-10 9.4 11		I47	12 11.28 10		J47	-10 9.4 10	
North Fence			I48	10 9.4 9		J48	-10 9.4 9	
			North Fence			North Fence		

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TABLE 10
POINT SURVEY RESULTS FROM OPEN AREAS SURROUNDING BUILDINGS

GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL
K15	Bldg.24		L15	Bldg.24		M15	Bldg.24	
K16	Bldg.24		L16	Bldg.24		M16	Bldg.24	
K17	.9412 11.28	10	L17	.9413 12.22	12	M17	.9412 11.28	11
K18	-10 9.4	10	L18	-12 11.28	13	M18	10 9.4	11
K19	-13 12.22	13	L19	-10 9.4	12	M19	13 12.22	13
K20	Bldg.22A		L20	Bldg.22A		M20	Bldg.22A	
K21	Bldg.22A		L21	Bldg.22A		M21	Bldg.22A	
K22	Bldg.22		L22	Bldg.22		M22	Bldg.22	
K23	Bldg.22		L23	Bldg.22		M23	Bldg.22	
K24	-13 12.22	13	L24	Bldg.22		M24	Bldg.22	
K25	Bldg.29B		L25	-14 13.16	15	M25	14 13.16	15
K26	-13 12.22	14	L26	-13 12.22	14	M26	12 11.28	14
K27	Bldg.25A		L27	Bldg.25A		M27	Bldg.25A	
K28	Bldg.25A		L28	Bldg.25A		M28	Bldg.25A	
K29	-14 13.86	13	L29	-13 12.22	11	M29	12 11.28	12
K30	-11 10.34	12	L30	-11 10.34	11	M30	12 11.28	11
K31	Bldg.70A		L31	Bldg.70A		M31	Bldg.70A	
K32	Bldg.70		L32	Bldg.70		M32	Bldg.70	
K33	Bldg.70		L33	Bldg.70		M33	Bldg.70	
K34	Bldg.70		L34	Bldg.70		M34	Bldg.70	
K35	Bldg.70X		L35	Bldg.70		M35	Bldg.70	
K36	-14 13.16	12	L36	-11 10.34	12	M36	14 13.16	13
K37	-11 10.34	10	L37	-12 11.28	10	M37	11 10.34	9
K38	-9 8.46	10	L38	-10 9.4	10	M38	10 9.4	9
K39	-12 11.28	12	L39	-11 10.34	10	M39	10 9.4	8
K40	Bldg.65		L40	Bldg.65		M40	Bldg.65	
K41	Bldg.65		L41	Bldg.65		M41	Bldg.65	
K42	Bldg.65		L42	Bldg.65		M42	Bldg.65	
K43	Bldg.65		L43	Bldg.65		M43	Bldg.65	
K44	Bldg.65		L44	Bldg.65		M44	Bldg.65	
K45	-14 13.16	13	L45	-14 13.16	13	M45	14 12.16	13
K46	-11 10.34	11	L46	-12 12.28	11	M46	10 9.4	11
K47	-11 10.34	11	L47	-11 10.34	10	M47	13 12.22	10
K48	-10 9.4	10	L48	-10 9.4	10	M48	10 9.4	9
North Fence			North Fence			M49	11 10.34	10
						North Fence		

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TABLE 11
POINT SURVEY RESULTS FROM OPEN AREAS SURROUNDING BUILDINGS

GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL
N15	Bldg.24		O15	Bldg.24		P15	Bldg.24	
N16	Bldg.24		O16	Bldg.24		P16	Bldg.24	
N17	.94 12 11.28 10		O17	.94 13 12.22 14		P17	.94 15 14.1 14	
N18	- 10 9.4 10		O18	.94 13 12.22 14		P18	- 12 11.28 13	
N19	- 11 10.34 12		O19	Bldg.22A		P19	Bldg.22A	
N20	Bldg.22A		O20	Bldg.22A		P20	Bldg.22A	
N21	Bldg.22A		O21	Bldg.22A		P21	Bldg.22A	
N22	Bldg.22		O22	Bldg.22		P22	Bldg.22	
N23	Bldg.22		O23	Bldg.22		P23	Bldg.22	
N24	Bldg.22		O24	Bldg.22		P24	Bldg.22	
N25	- 15 14.1 15		O25	Bldg.29		P25	Bldg.26C	
N26	- 13 12.22 16		O26	Bldg.26C		P26	Bldg.26C	
N27	Bldg.25A		O27	Bldg.25A		P27	Bldg.26C	
N28	Bldg.25A		O28	Bldg.25A		P28	Bldg.26C	
N29	- 12 11.28 12		O29	- 15 14.1 15		P29	Bldg.26D	
N30	- 11 10.34 12		O30	- 14 13.16 15		P30	Bldg.26D	
N31	Bldg.70A		O31	Bldg.70A		P31	Bldg.70A	
N32	Bldg.70		O32	Bldg.70		P32	Bldg.70	
N33	Bldg.70		O33	Bldg.70		P33	Bldg.70	
N34	Bldg.70		O34	Bldg.70		P34	Bldg.70	
N35	Bldg.70		O35	Bldg.70		P35	Bldg.70	
N36	- 11 10.34 10		O36	- 8 7.52 7		P36	- 14 13.16 12	
N37	- 10 9.4 11		O37	- 8 7.52 8		P37	- 8 7.52 10	
N38	- 9 8.46 10		O38	- 10 9.4 8		P38	- 11 10.34 9	
N39	- 8 7.52 8		O39	- 10 9.4 11		P39	- 10 9.4 11	
N40	Bldg.65		O40	Bldg.65		P40	Bldg.65	
N41	Bldg.65		O41	Bldg.65		P41	Bldg.65	
N42	Bldg.65		O42	Bldg.65		P42	Bldg.65	
N43	Bldg.65		O43	Bldg.65		P43	Bldg.65	
N44	Bldg.65		O44	Bldg.65		P44	Bldg.65	
N45	- 13 12.22 11		O45	- 14 13.16 13		P45	- 11 10.34 10	
N46	- 11 10.34 11		O46	- 11 10.34 11		P46	- 10 9.4 10	
N47	- 11 10.34 10		O47	- 11 10.34 11		P47	- 10 9.4 11	
N48	- 10 9.4 11		O48	- 10 9.4 10		P48	- 9 8.46 9	
N49	- 11 10.34 11		O49	- 10 9.4 11		P49	- 10 9.4 9	
North Fence			O50	- 9 8.46 11		P50	- 11 10.34 10	
			North Fence			North Fence		

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TABLE 12
POINT SURVEY RESULTS FROM OPEN AREAS SURROUNDING BUILDINGS

GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL
Q5	.94 10 9.4	11	R5	.94 11 10.34	10	S5	.948 7.52	10
Q6	- 13 12.22	12	R6	- 9 8.46	9	S6	- 9 8.46	9
Q7	- 12 11.28	13	R7	- 11 10.34	11	S7	- 10 9.4	10
Q8	- 11 10.34	12	R8	- 11 10.34	11	S8	- 12 11.28	10
Intense Survey			R9	- 11 10.34	10	S9	- 8 7.52	10
			R10	- 10 9.4	9	S10	- 7 5.64	9
			R11	- 11 10.34	10	S11	- 10 9.4	12
			R12	- 10 9.4	10	S12	- 10 9.4	9
			R13	- 10 9.4	10	S13	- 9 8.46	9
						West Boundary		
Q15	Bldg. 24		R15	Bldg. 26A				
Q16	Bldg. 24		R16	Bldg. 26A				
Q17	.94 14 13.16	14	R17	Bldg. 26A				
Q18	- 11 10.34	12	R18	Bldg. 26A				
Q19	Bldg. 22A		R19	Bldg. 26A				
Q20	Bldg. 22A		R20	Bldg. 26				
Q21	Bldg. 22A		R21	Bldg. 26				
Q22	Bldg. 22		R22	Bldg. 26				
Q23	Bldg. 22		R23	Bldg. 26				
Q24	Bldg. 22		R24	Bldg. 26				
Q25	Bldg. 26C		R25	Bldg. 26				
Q26	Bldg. 26C		R26	Bldg. 26				
Q27	Bldg. 26C		R27	Bldg. 26				
Q28	Bldg. 26C		R28	Bldg. 26				
Q29	Bldg. 26D		R29	Bldg. 26D				
Q30	Bldg. 26D		R30	Bldg. 26D				
Q31	Bldg. 70A		R31	Bldg. 70A		South Boundary		
Q32	Bldg. 26B		R32	Bldg. 26B		S32	.94 14 13.22	15
Q33	Bldg. 26B		R33	Bldg. 26B		S33	- 15 14.1	14
Q34	Bldg. 26B		R34	Bldg. 26E		S34	- 17 15.98	15
Q35	Bldg. 26B		R35	Bldg. 26B		S35	- 13 12.22	12
Q36	- 13 12.22	12	R36	.94 12 11.28	12	S36	- 13 12.22	11
Q37	- 9 8.46	9	R37	- 10 9.4	11	S37	- 11 10.34	11
Q38	- 10 9.4	10	R38	- 14 13.16	9	S38	- 10 9.4	9
Q39	- 10 9.4	9	R39	- 9 8.46	10	S39	- 12 11.28	10
Q40	Bldg. 65		R40	Bldg. 65		S40	- 11 10.34	12
Q41	Bldg. 65		R41	Bldg. 65		S41	- 12 11.28	12
Q42	Bldg. 65		R42	Bldg. 65		S42	- 11 10.34	11
Q43	Bldg. 65		R43	Bldg. 65		S43	- 9 8.46	10
Q44	Bldg. 65		R44	Bldg. 65		S44	- 11 10.34	9
Q45	- 12 11.28	12	R45	- 15 14.1	12	S45	- 9 8.46	10
Q46	- 10 9.4	11	R46	- 11 10.34	11	S46	- 10 9.4	10
Q47	- 11 10.34	10	R47	- 14 13.16	11	S47	- 11 10.34	11
Q48	- 9 8.46	9	R48	- 10 9.4	10	S48	- 11 10.34	10
Q49	- 10 9.4	10	R49	- 11 10.34	9	S49	- 10 9.4	10
Q50	- 11 10.34	10	R50	- 10 9.4	10	S50	- 10 9.4	11
North Fence			North Fence			North Fence		

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TABLE 13
POINT SURVEY RESULTS FROM OPEN AREAS SUPROUNDING BUILDINGS

GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL
South Boundary			South Boundary			South Boundary		
T32	.94 12 11.28	12	U32	13 12.22	11	V33	Bldg. 53	
T33	- 11 10.34	12	U33	16 15.04	18	V34	Bldg. 53	
T34	- 13 12.22	13	U34	16 15.04	16	V35	Bldg. 53	
T35	- 12 11.28	11	U35	18 16.92	14	V36	Bldg. 53	
T36	- 11 10.34	11	U36	15 14.1	15	V37	Bldg. 53	
T37	- 12 11.28	11	U37	14 13.16	14	V38	.94 11 10.34	12
T38	- 9 8.46	10	U38	10 9.4	10	V39	- 12 11.28	13
T39	- 10 9.4	9	U39	11 10.34	10	V40	Bldg. 51	
T40	- 13 12.22	9	U40	11 10.34	10	V41	Bldg. 51	
T41	- 11 10.34	10	U41	13 12.22	14	V42	Bldg. 51	
T42	- 8 7.52	10	U42	12 11.28	12	V43	Bldg. 51	
T43	- 10 9.4	11	U43	14 13.16	12	V44	Bldg. 51	
T44	- 9 8.46	10	U44	10 9.4	10	V45	Bldg. 51	
T45	- 10 9.4	9	U45	11 10.34	11	V46	Bldg. 51	
T46	- 10 9.4	11	U46	11 10.34	11	V47	Bldg. 51	
T47	- 10 9.4	10	U47	10 9.4	11	V48	Bldg. 51	
T48	- 8 7.52	10	U48	10 9.4	10	V49	- 11 10.34	10
T49	- 10 9.4	10	U49	11 10.34	11	V50	- 10 9.4	10
T50	- 11 10.34	9	U50	10 9.4	10	V51	- 9 8.46	8
North Fence			U51	10 9.4	9	North Fence		
			North Fence					
GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL
W37	Bldg. 53		X37	Bldg. 53		Y37	Bldg. 53	
W38	.94 14 13.16	14	X38	.94 13 12.22	12	Y38	.94 12 11.28	12
W39	- 12 11.28	12	X39	- 13 12.22	14	Y39	10 9.4	11
W40	Bldg. 51		X40	Bldg. 51		Y40	11 10.34	8
W41	Bldg. 51		X41	Bldg. 51		Y41	8 7.52	9
W42	Bldg. 51		X42	Bldg. 51		Y42	9 8.46	7
W43	Bldg. 51		X43	Bldg. 51		Y43	9 8.46	7
W44	Bldg. 51		X44	Bldg. 51		Y44	10 9.4	8
W45	Bldg. 51		X45	Bldg. 51		Y45	12 11.28	11
W46	Bldg. 51		X46	Bldg. 51		Y46	11 10.34	11
W47	Bldg. 51		X47	Bldg. 51		Y47	12 11.28	13
W48	Bldg. 51		X48	Bldg. 51		Y48	12 11.28	13
W49	- 11 10.34	11	X49	- 11 10.34	11	Y49	12 11.28	12
W50	- 11 10.34	11	X50	- 12 11.28	11	Y50	10 9.4	11
W51	- 10 9.4	10	X51	- 10 9.4	11	Y51	12 11.28	11
North Fence			X52	- 11 10.34	10	Y52	11 10.34	11
			North Fence			North Fence		

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TABLE 14
POINT SURVEY RESULTS FROM OPEN AREAS SURROUNDING BUILDINGS

GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL
Z37	Bldg. 53		AA37	Bldg. 53		BB37	Bldg. 53	
Z38	.94 10 9.4	12	AA38	13	13	BB38	13	12
Z39	- 8 7.52	10	AA39	10	8	BB39	10	7
Z40	- 10 9.4	10	AA40	11	10	BB40	7	7
Z41	- 8 7.52	8	AA41	7	8	BB41	7	8
Z42	- 8 7.52	8	AA42	9	9	BB42	8	8
Z43	- 9 8.46	9	AA43	10	10	BB43	9	9
Z44	- 9 8.46	10	AA44	11	10	BB44	10	9
Z45	- 13 12.22	12	AA45	Bldg. 60		BB45	Bldg. 60	
Z46	- 10 9.4	10	AA46	Bldg. 60		BB46	Bldg. 60	
Z47	- 14 13.16	12	AA47	Bldg. 60		BB47	Bldg. 60	
Z48	- 13 12.22	14	AA48	Bldg. 60		BB48	Bldg. 60	
Z49	- 14 13.16	14	AA49	Bldg. 60		BB49	Bldg. 60	
Z50	- 14 13.16	13	AA50	Bldg. 60		BB50	Bldg. 60	
Z51	- 12 11.28	14	AA51	Bldg. 60		BB51	Bldg. 60	
Z52	- 12 11.28	11	AA52	Bldg. 60		BB52	Bldg. 60	
North Fence			North Fence			North Fence		
GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL	GRID I.D.	GROUND LEVEL	WAIST LEVEL
CC37	Bldg. 53		South Boundary			South Boundary		
CC38	11	8	DD38	9	8	EE38	8	9
CC39	11	10	DD39	9	9	EE39	9	8
CC40	7	8	DD40	9	9	EE40	11	9
CC41	6	7	DD41	7	7	EE41	9	8
CC42	8	8	DD42	8	7	EE42	7	8
CC43	8	8	DD43	8	8	EE43	7	8
CC44	10	10	DD44	8	8	EE44	9	8
CC45	Bldg. 60		DD45	11	10	EE45	10	10
CC46	Bldg. 60		DD46	12	11	EE46	10	10
CC47	Bldg. 60		DD47	10	11	EE47	10	10
CC48	Bldg. 60		DD48	10	11	EE48	10	10
CC49	Bldg. 60		DD49	11	11	EE49	10	10
CC50	Bldg. 60		DD50	11	11	EE50	10	10
CC51	Bldg. 60		DD51	11	11	EE51	11	10
CC52	Bldg. 60		DD52	8	9	EE52	10	8
North Fence			North Fence			North Fence		

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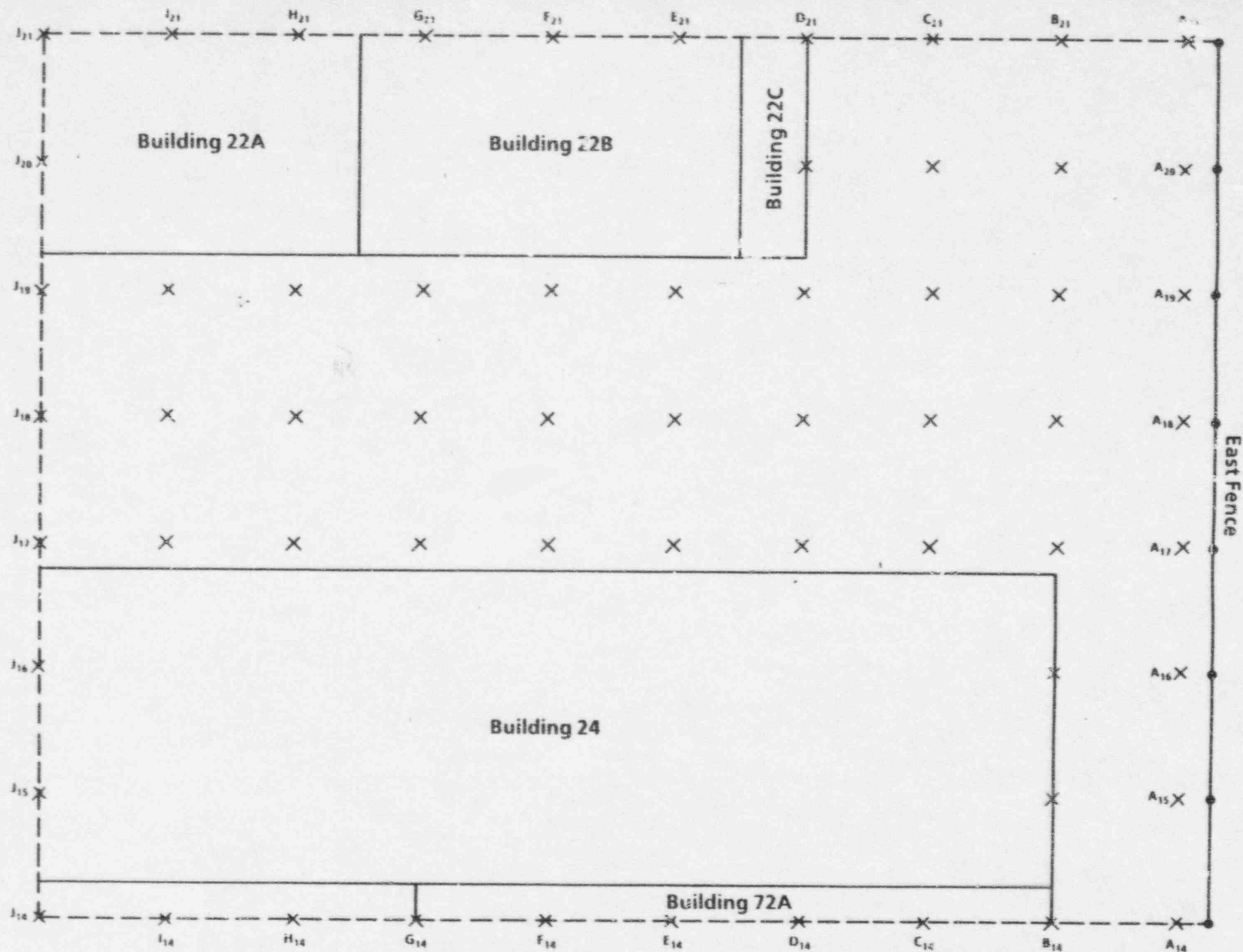


FIGURE 5 GRID MAP FOR POINT SURVEY

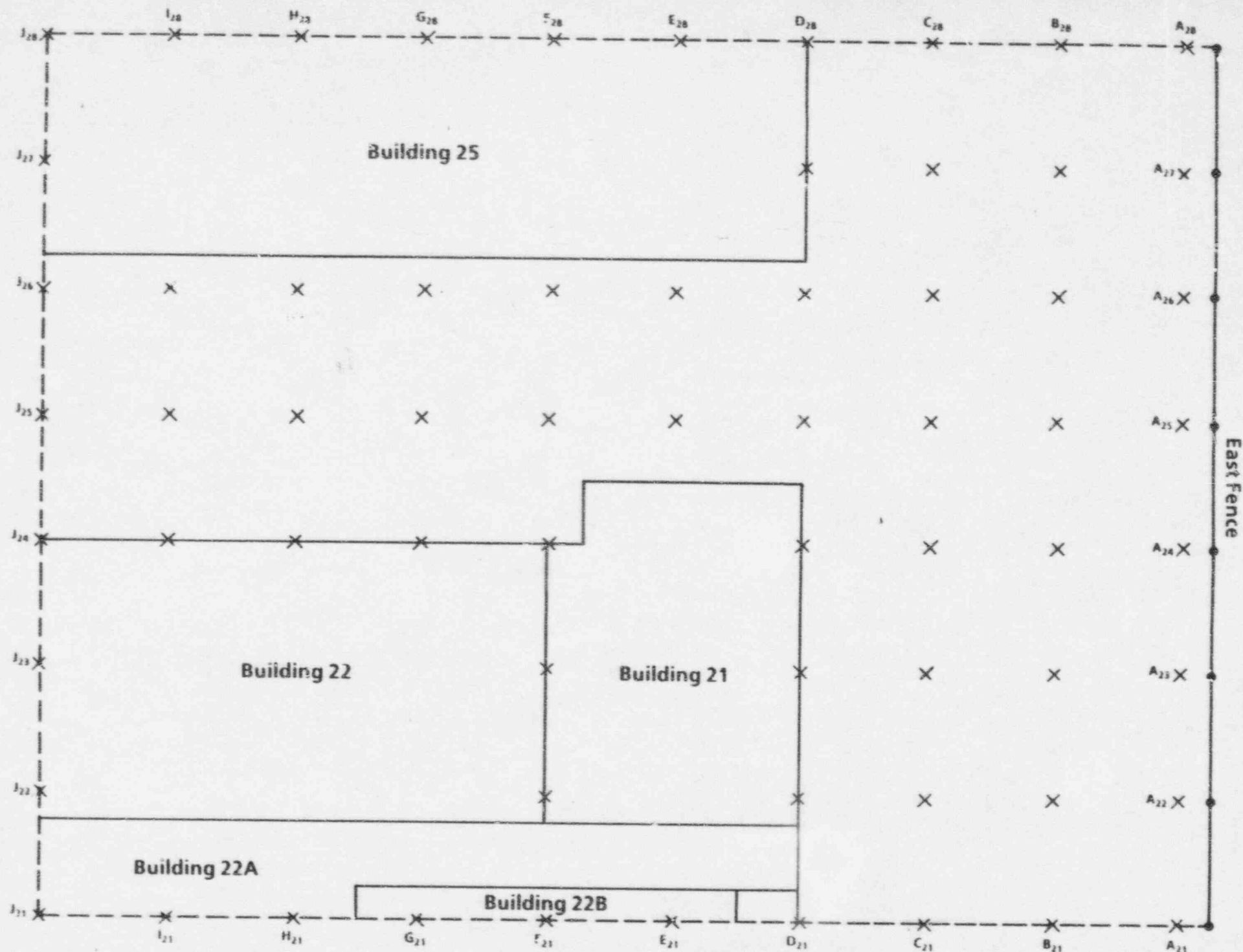


FIGURE 6 GRID MAP FOR POINT SURVEY

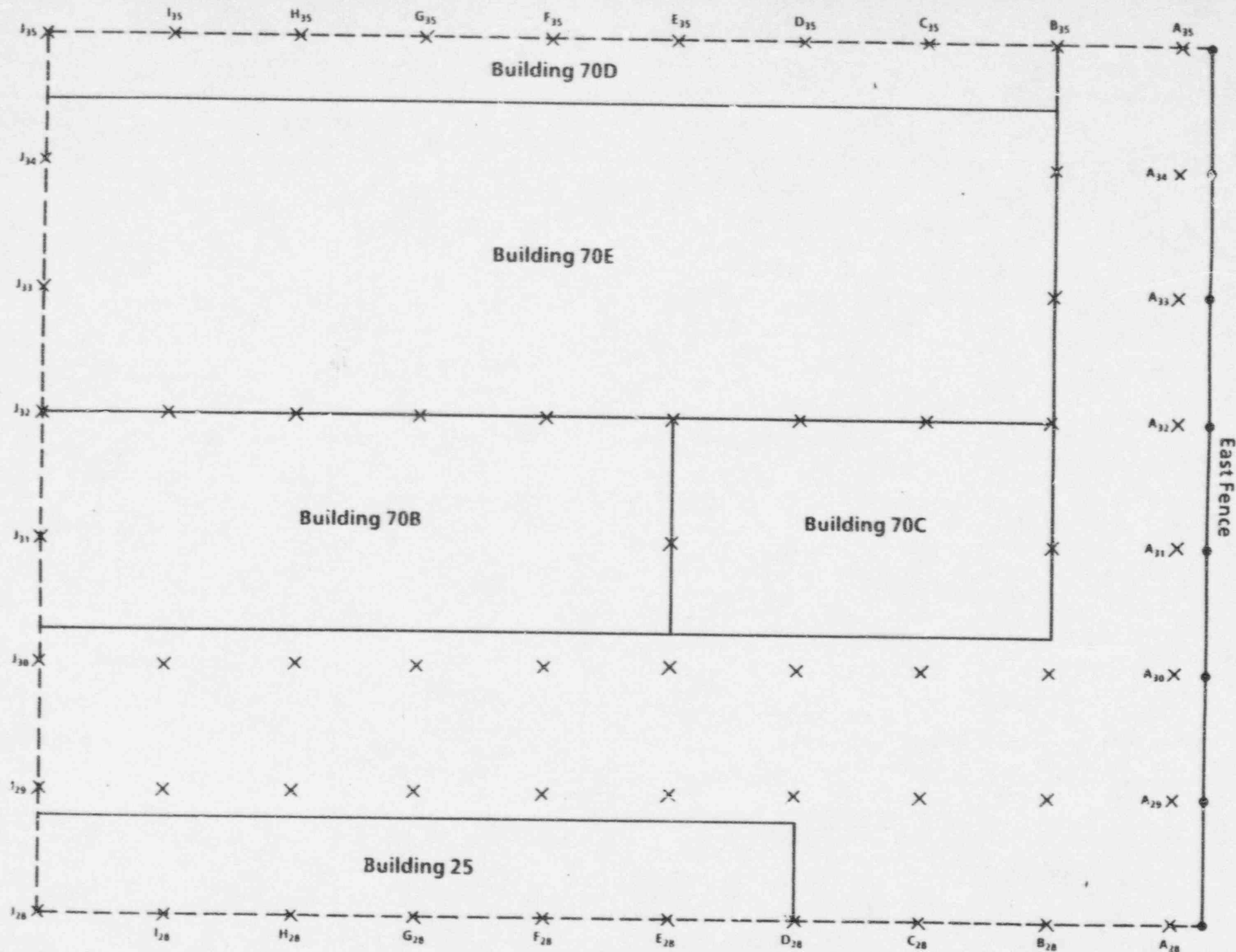


FIGURE 7 GRID MAP FOR POINT SURVEY

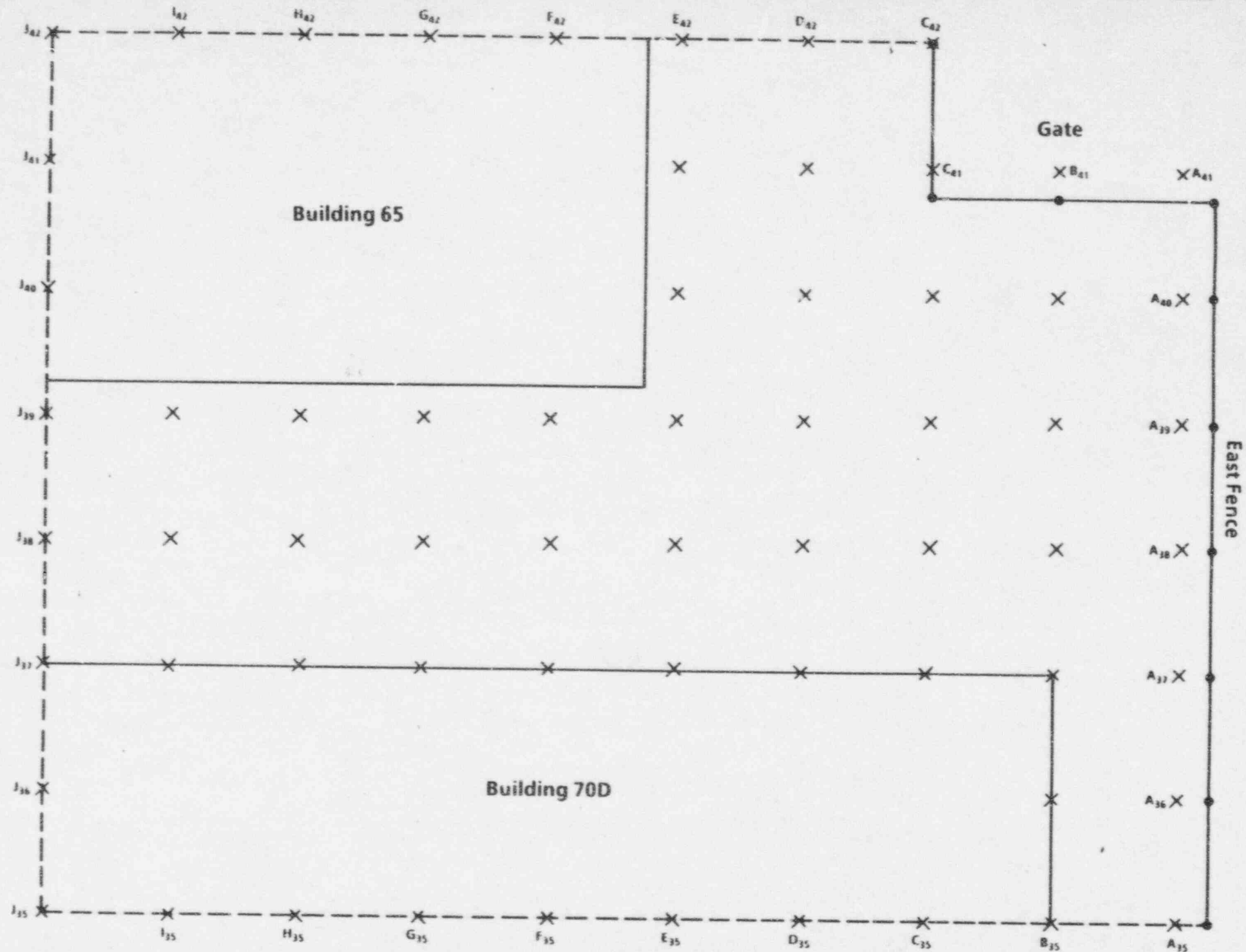


FIGURE 8 GRID MAP FOR POINT SURVEY

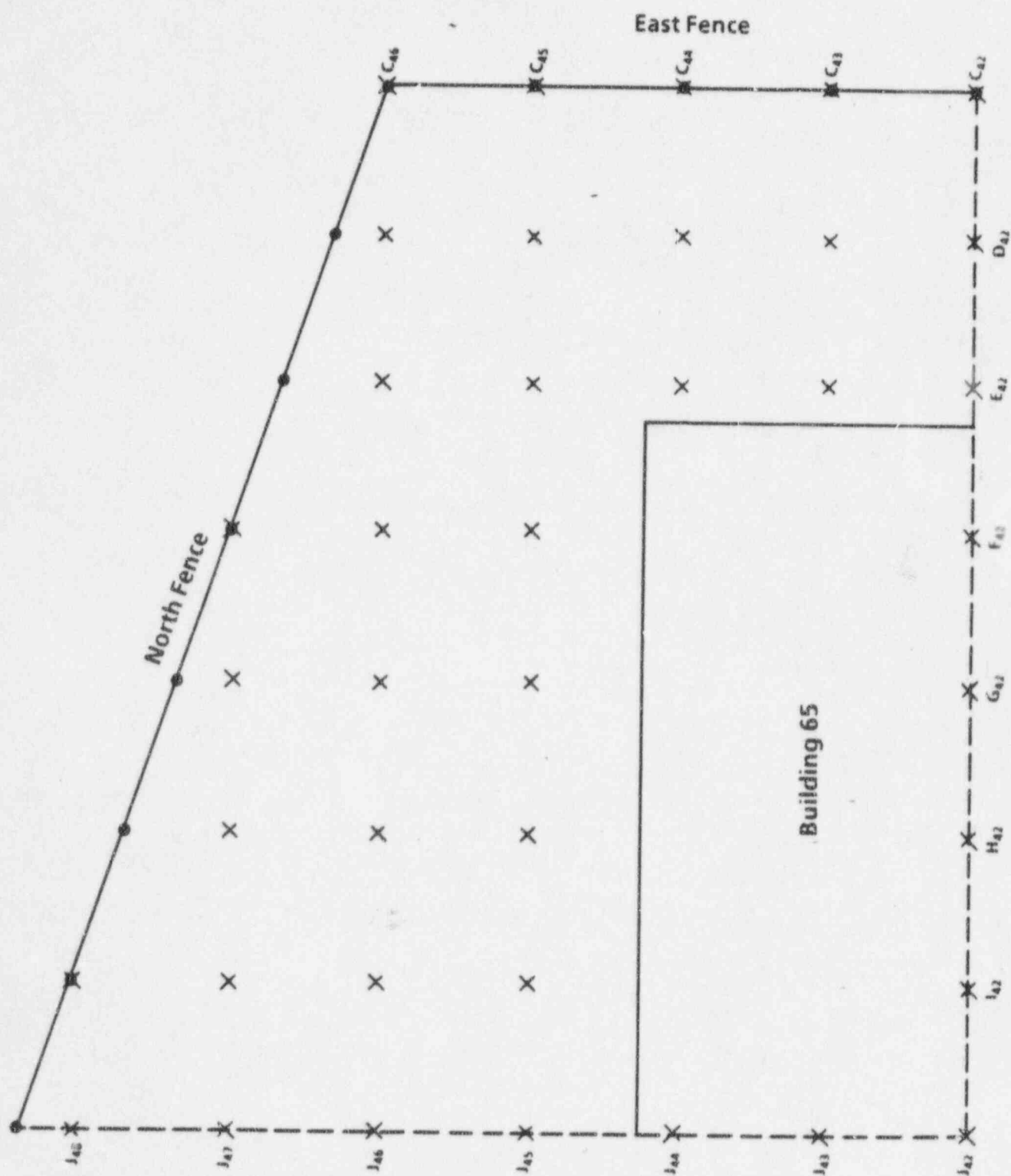


FIGURE 9
GRID MAP FOR POINT SURVEY

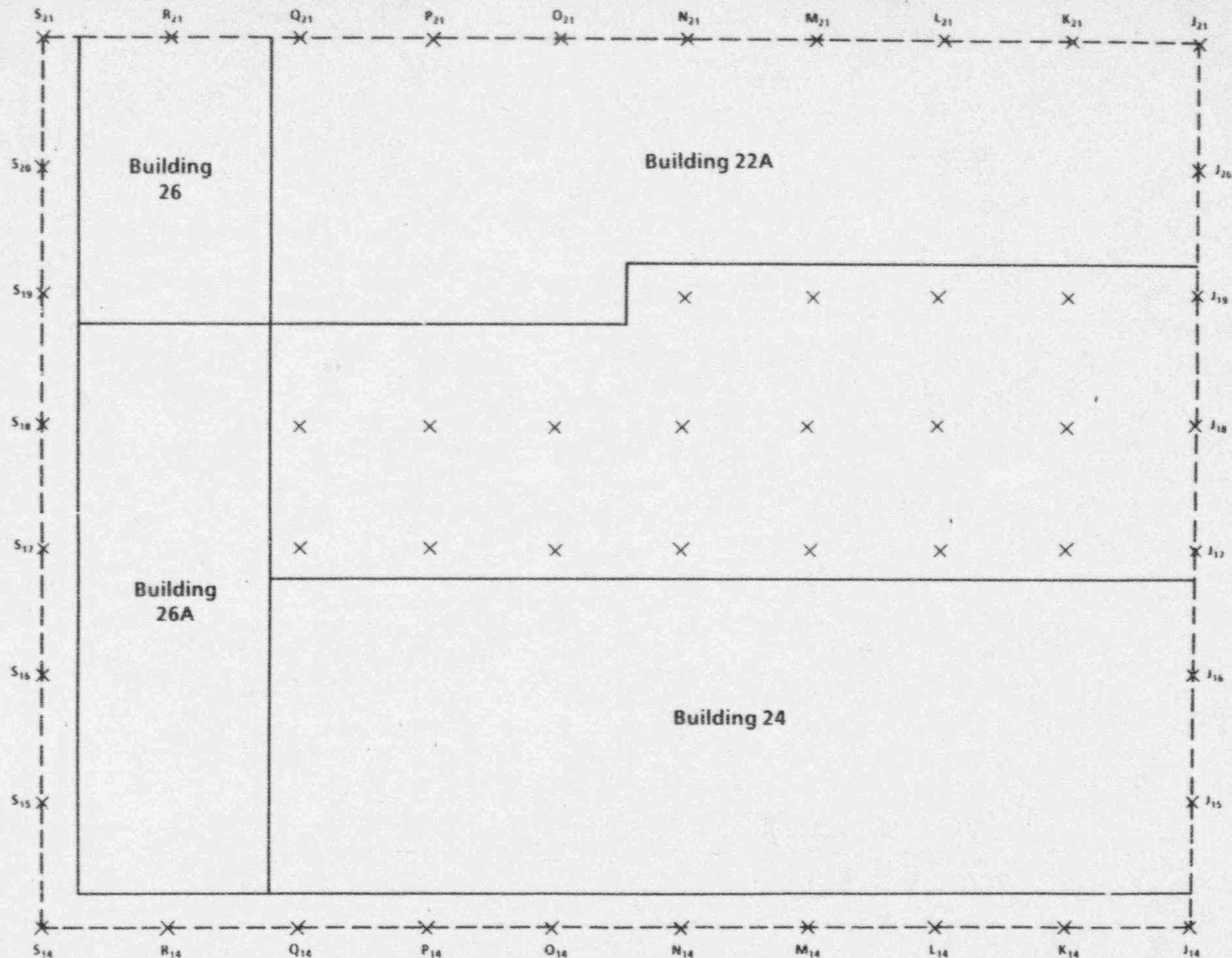


FIGURE 10 GRID MAP FOR POINT SURVEY

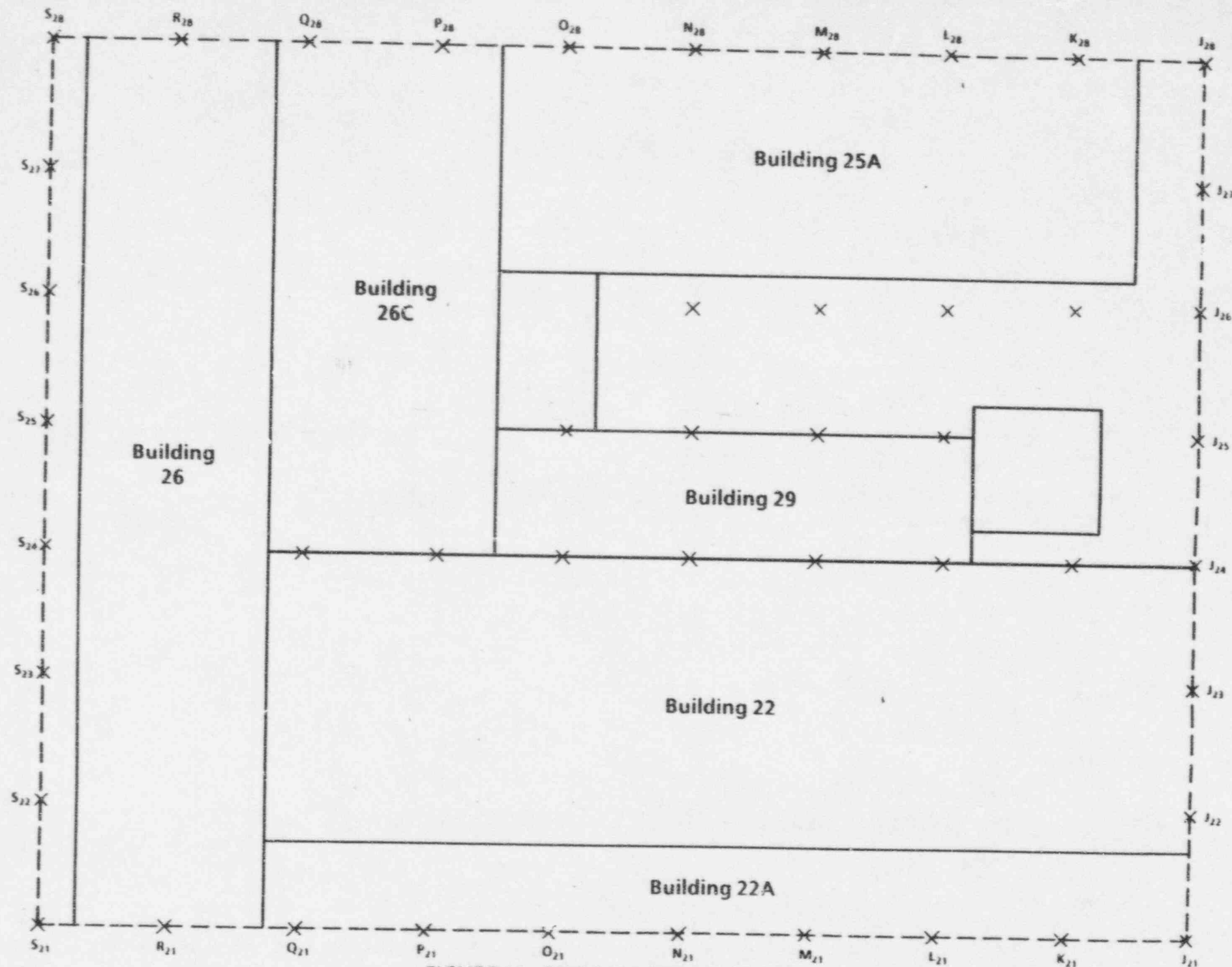


FIGURE 11 GRID MAP FOR POINT SURVEY

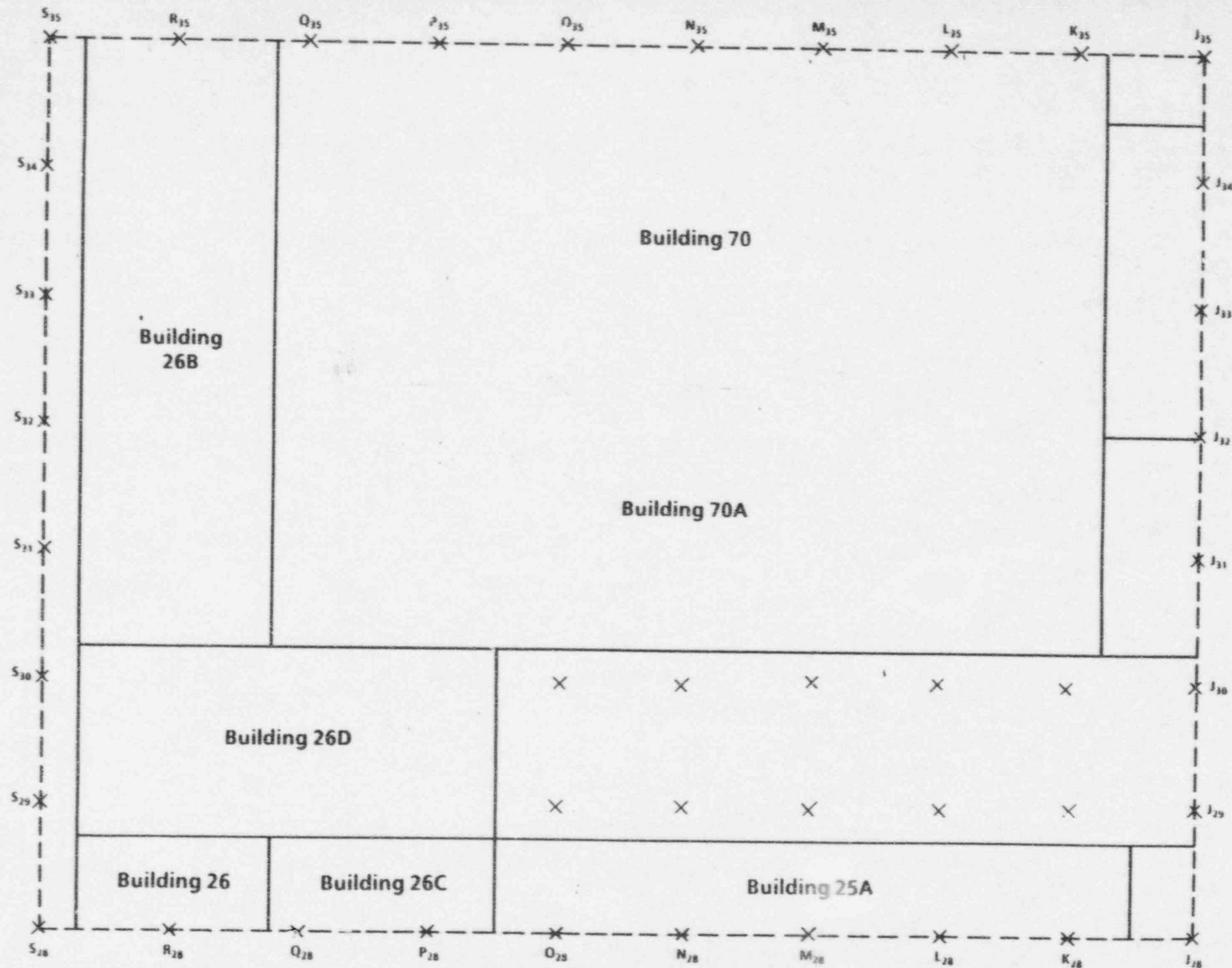


FIGURE 12 GRID MAP FOR POINT SURVEY

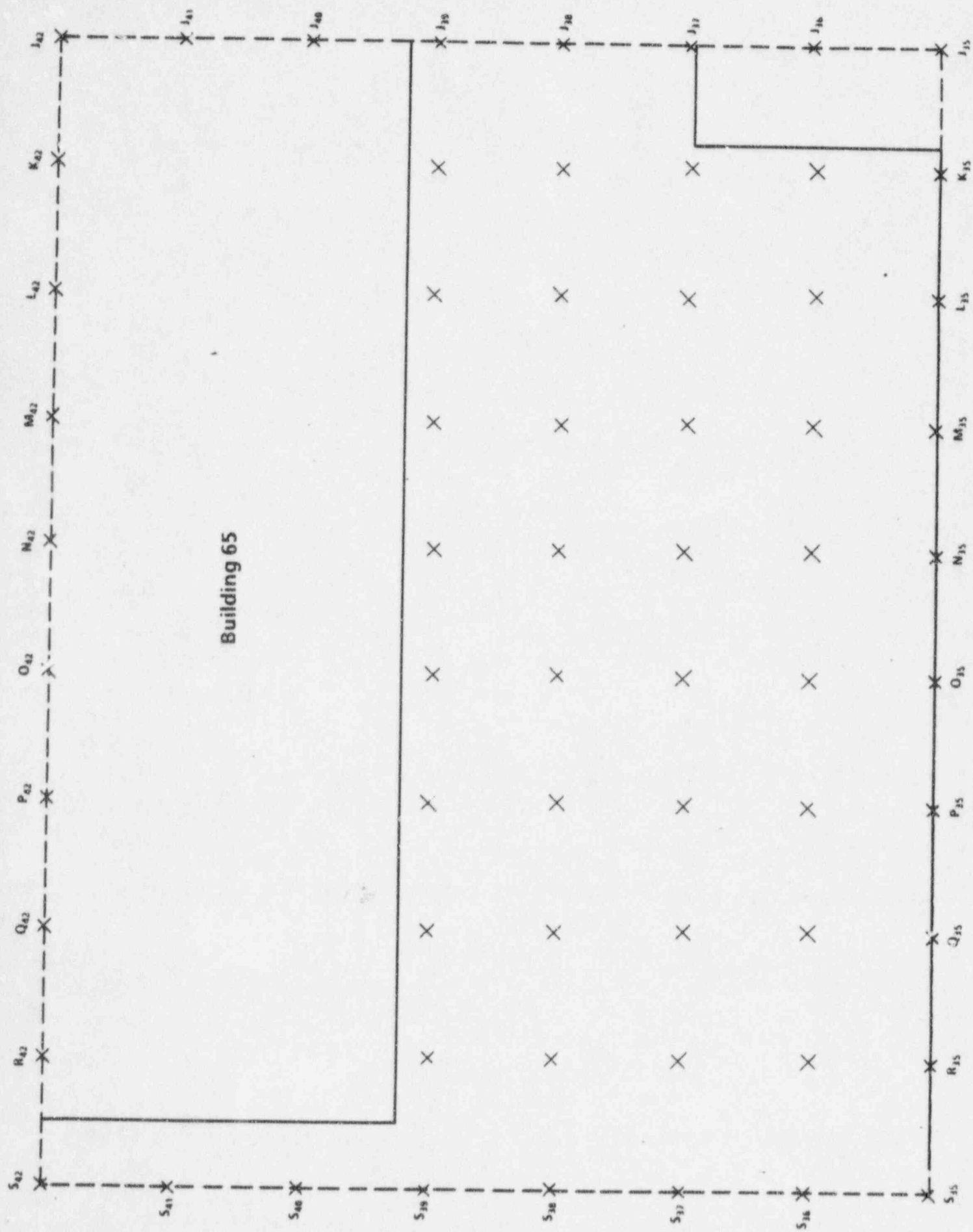


FIGURE 13 GRID MAP FOR POINT SURVEY

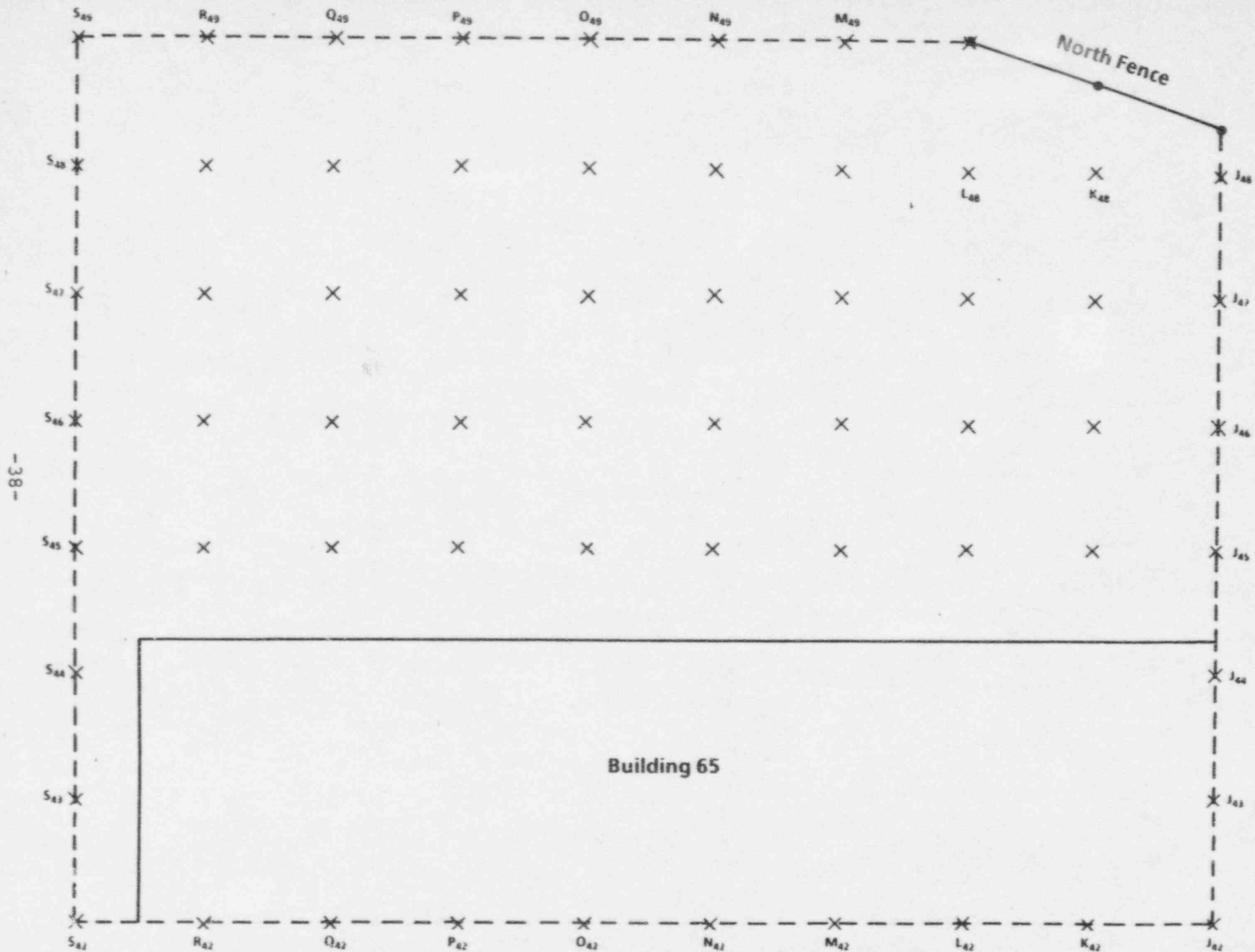


FIGURE 14 GRID MAP FOR POINT SURVEY

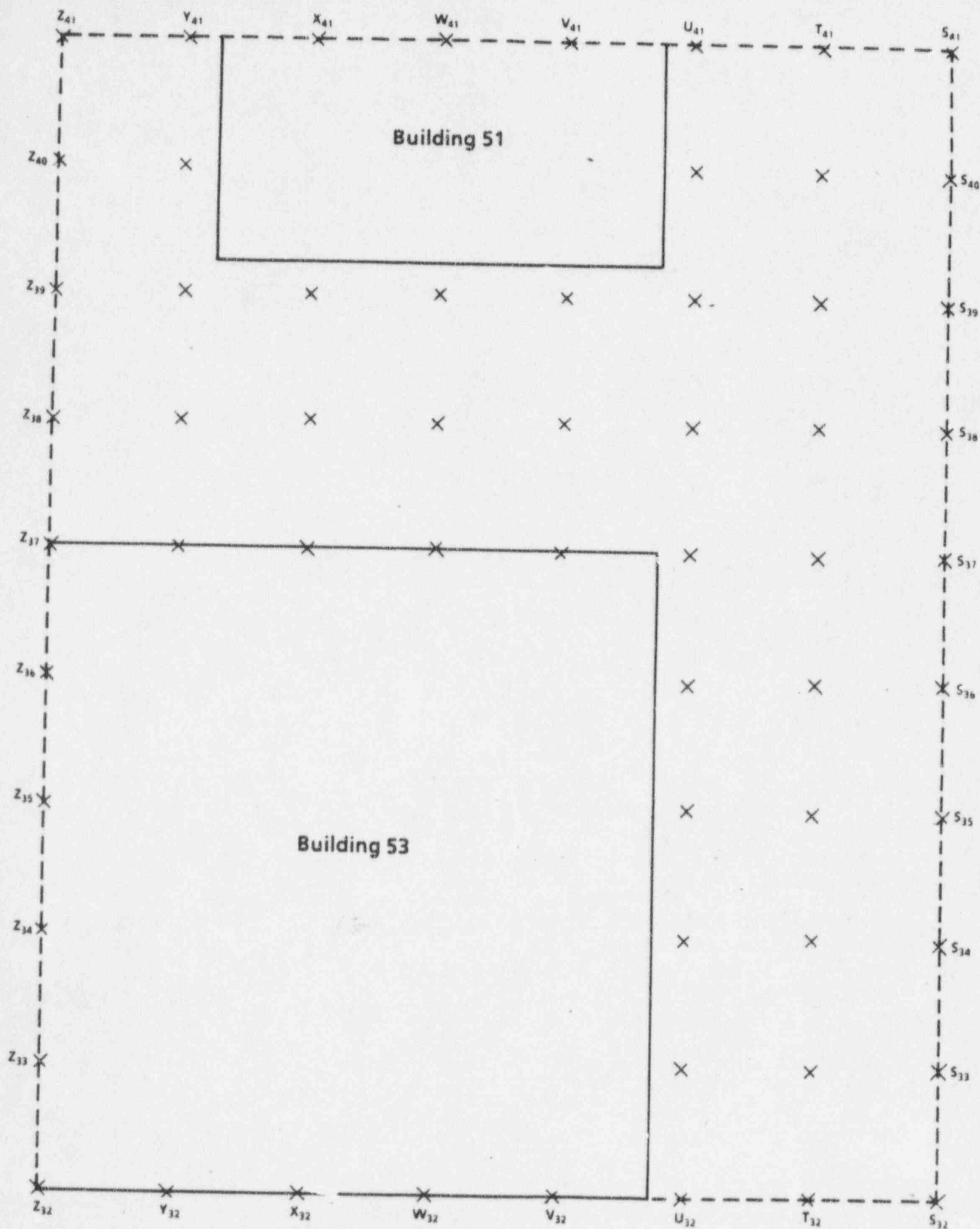


FIGURE 15 GRID MAP FOR POINT SURVEY

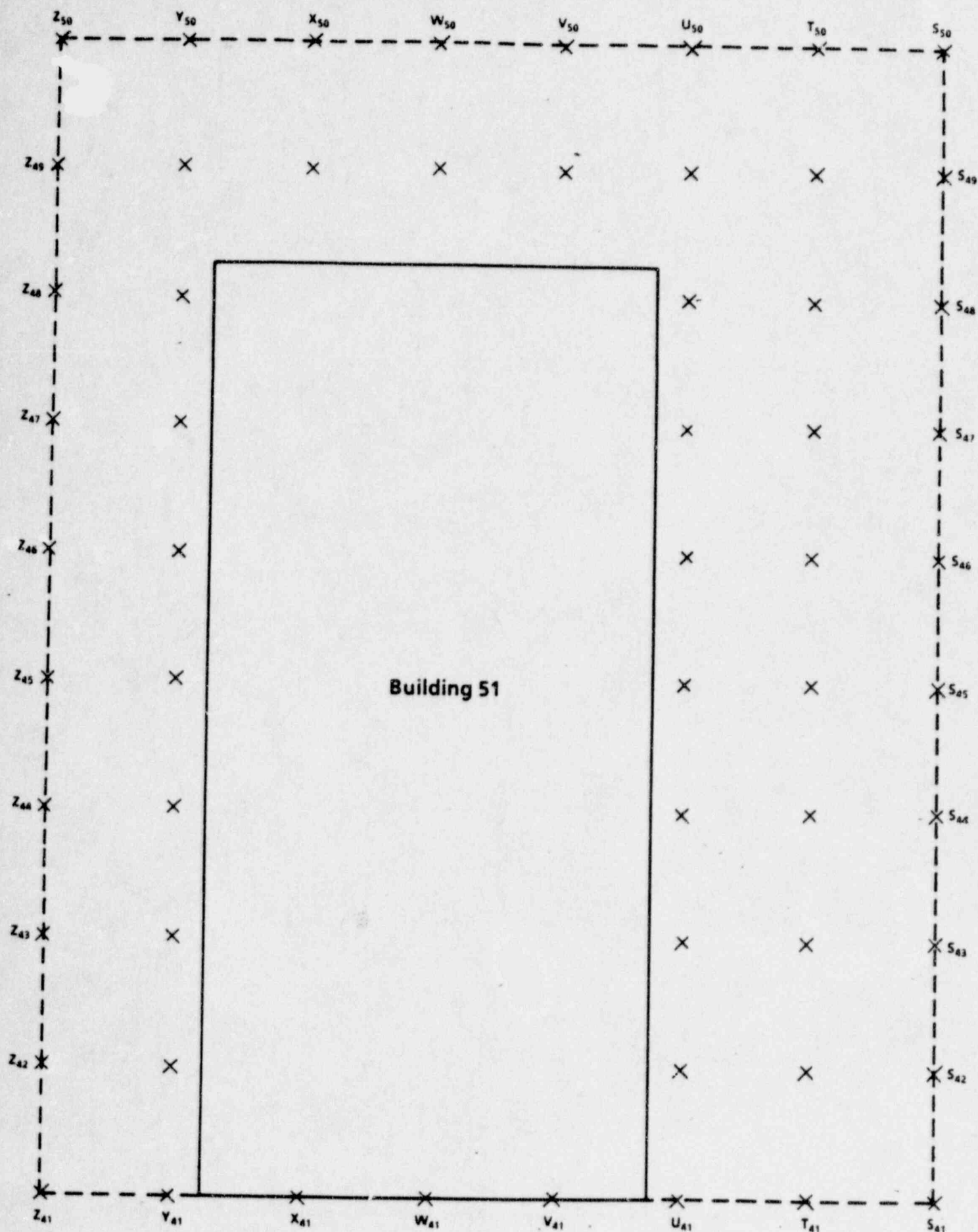


FIGURE 16 GRID MAP FOR POINT SURVEY

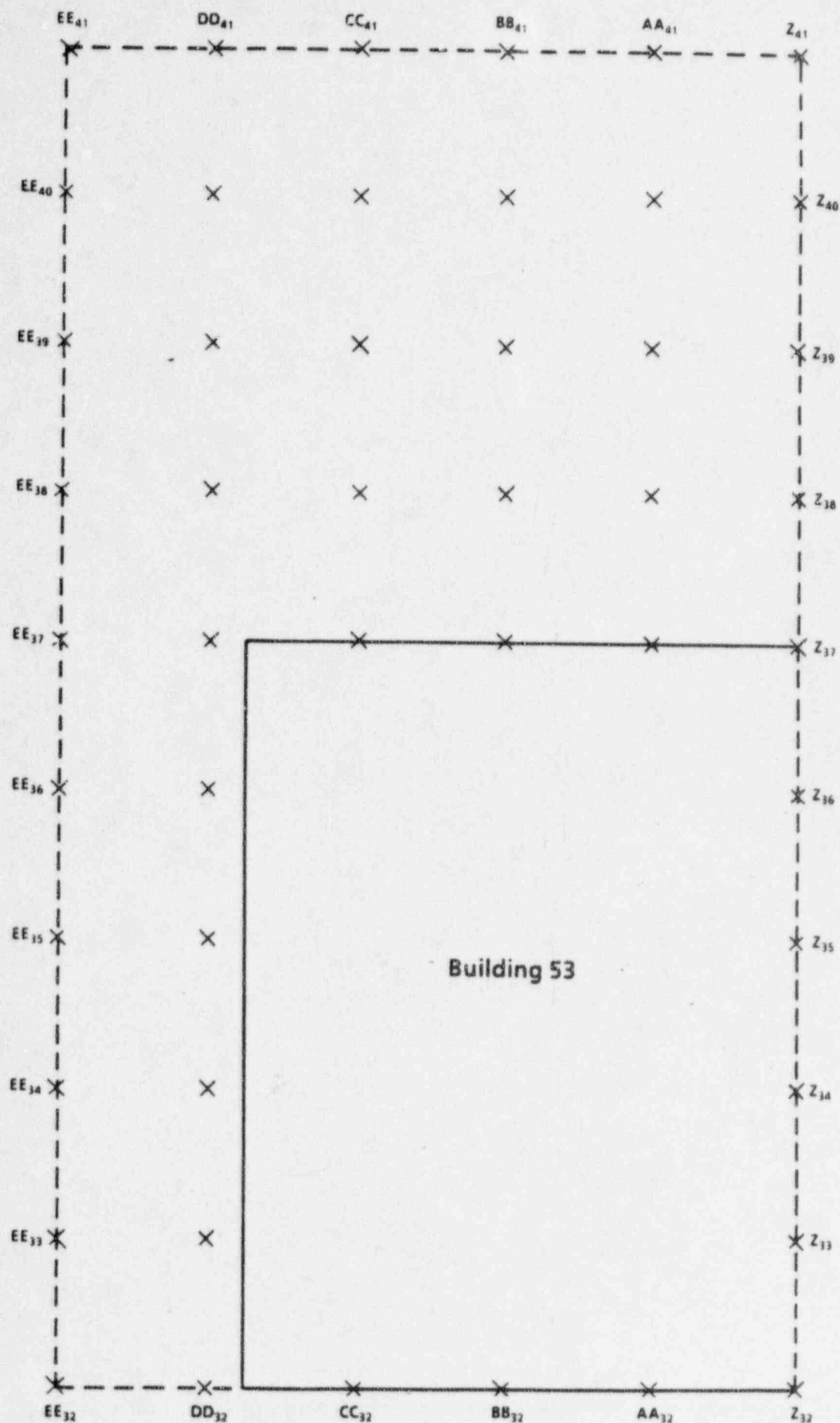


FIGURE 17 GRID MAP FOR POINT SURVEY

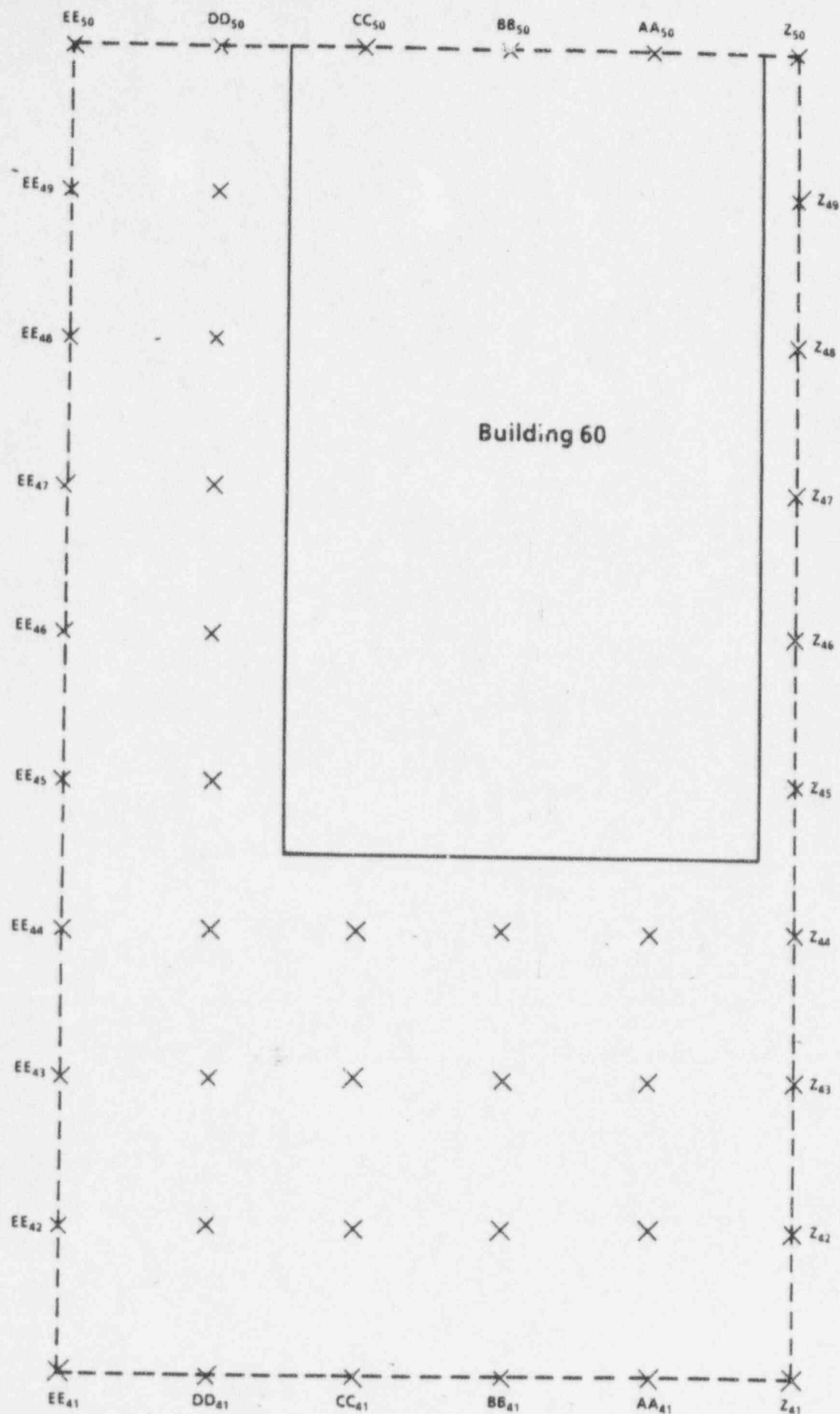


FIGURE 18 GRID MAP FOR POINT SURVEY

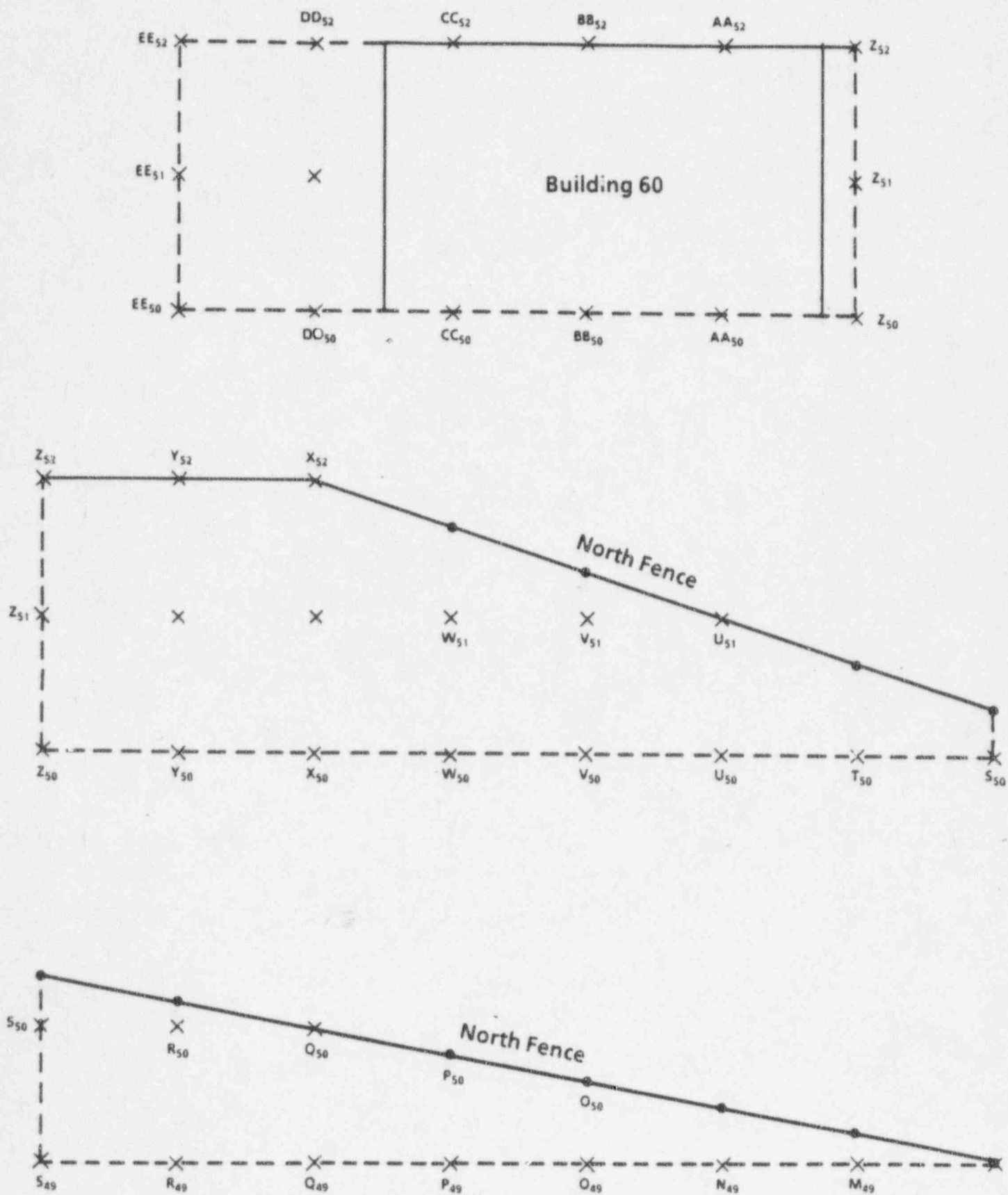


FIGURE 19
GRID MAP FOR POINT SURVEY

TABLE 15
POINT SURVEY RESULTS FROM BUILDING 21
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
Pt.1	10
Pt.2	13
Pt.3	11
Pt.4	11
Pt.5	12
Pt.6	13

Point survey readings taken in the four corners and at mid points along the north and south walls.

1, 07
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TABLE 16
POINT SURVEY RESULTS FROM BUILDINGS 22 AND 22A
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
B1	9	C1	13	D1	11
B2	11	C2	9	D2	10
B3	9	C3	11	D3	8
B4	11	C4	9	D4	7
B5	11	C5	10	D5	9
B6	8	C6	11	D6	11
B7	10	C7	10	D7	8
B8	10	C8	10	D8	9
B9	10	C9	9	D9	10
B10	11	C10	10	D10	10
B11	10	C11	8	D11	11
		C12	10	D12	11
		C13	11	D13	13
E1	8	F1	9	G1	9
E2	8	F2	7	G2	10
E3	8	F3	9	G3	9
E4	9	F4	11	G4	10
E5	8	F5	8	G5	11
E6	9	F6	10	G6	10
E7	8	F7	10	G7	9
E8	9	F8	10	G8	10
E9	11	F9	10	G9	10
E10	8	F10	9	G10	9
E11	12	F11	11	G11	12
E12	14	F12	11	G12	11
		F13	13	G13	12

Grid identification based on column coordinates of this building.

2nd FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
Pt.1	18
Pt.2	16
Pt.3	14
Pt.4	14
Pt.5	14
Pt.6	17
Pt.7	12
Pt.8	14
Pt.9	13

Survey points of upper floors marked and painted in building.

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Buildings 22 and 22A

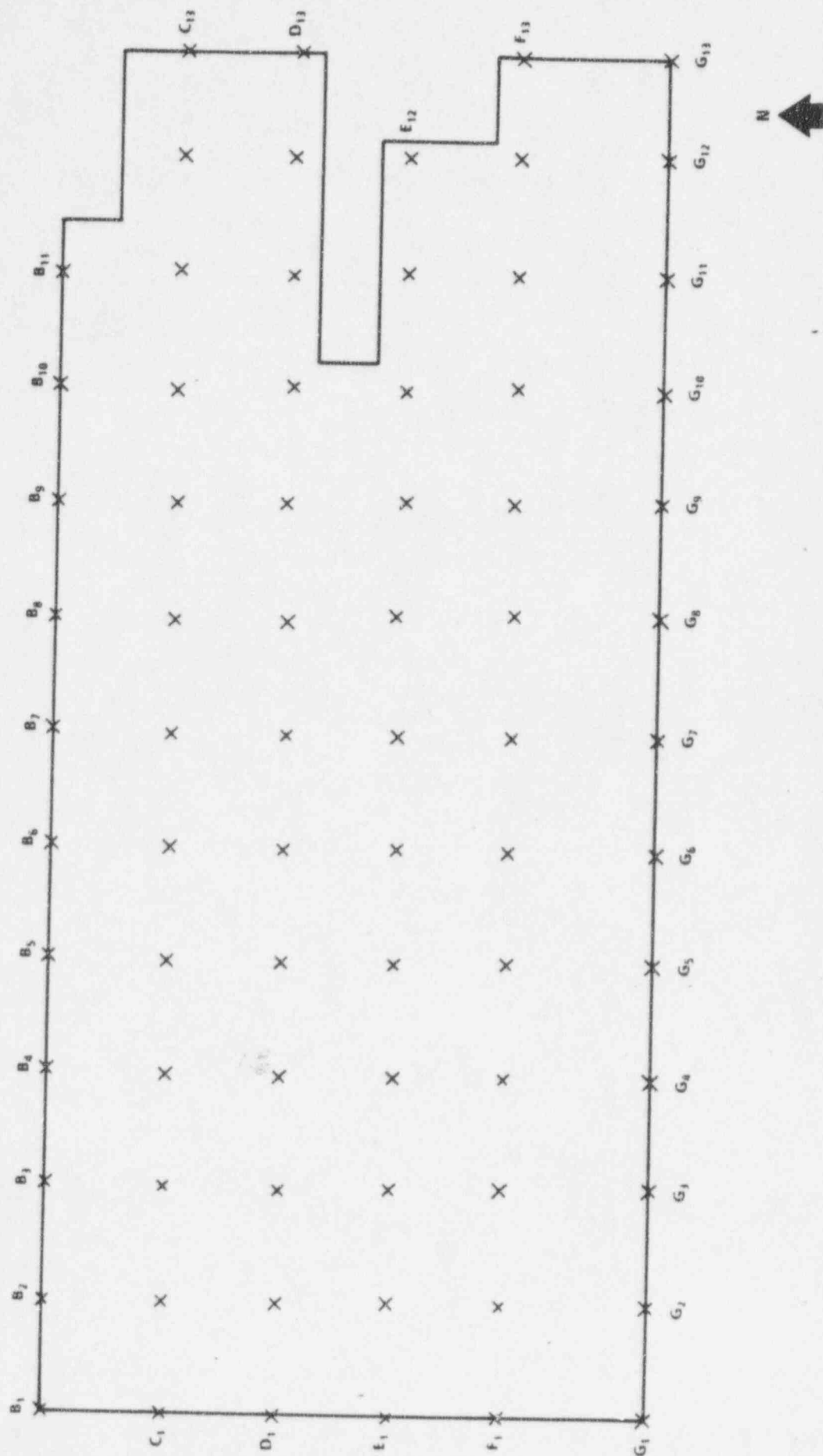


FIGURE 20
GRID MAP FOR BUILDINGS 22 AND 22A

TABLE 17
POINT SURVEY RESULTS FROM BUILDING 22B
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A1	15	B1	15		
A2	17	B2	18	C2	13
A3	16	B3	14	C3	17

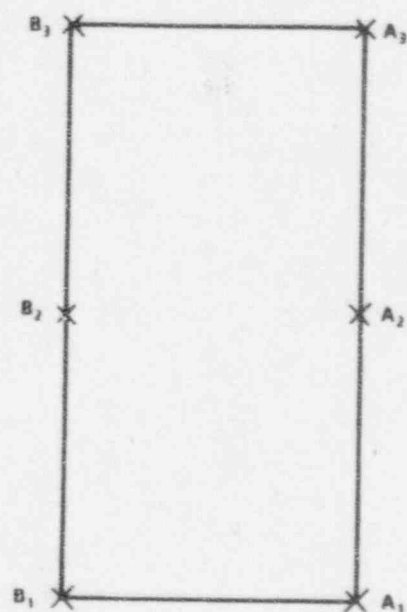
Grid identification marked and painted at 20 feet intervals.

POINT SURVEY RESULTS FROM BUILDING 22C
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A1	12	B1	15
A2	14	B2	13
A3	14	B3	14

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Building 22C



Building 22B

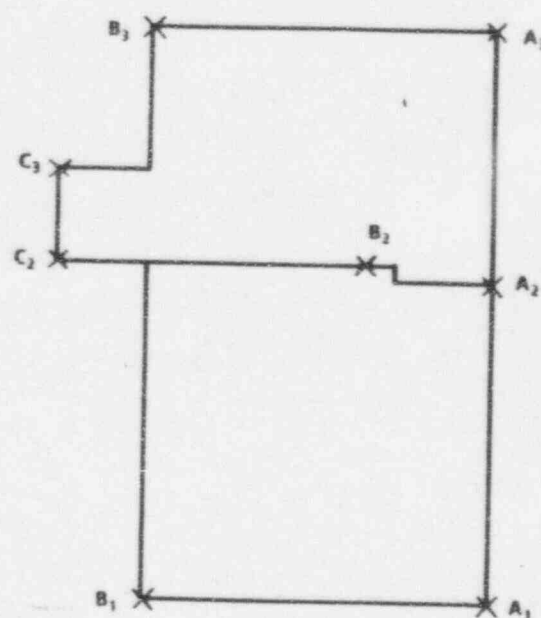


FIGURE 21
GRID MAP FOR BUILDINGS 22B AND 22C

TABLE 18
POINT SURVEY RESULTS FROM BUILDING 24
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A3	12	A4	11	A5	11
B3	9	B4	9	B5	9
C3	7	C4	8	C5	10
D3	11	D4	11	D5	11
E3	11	E4	9	E5	12
F3	9	F4	9	F5	10
G3	9	G4	10	G5	9
H3	8	H4	10	H5	13
I3	9	I4	10	I5	11
J3	12	J4	9	J5	14
K3	10	K4	9	K5	13
L3	9	L4	7	L5	11
M3	8	M4	8	M5	13
N3	8	N4	8	N5	12
O3	11	O4	9	O5	11
P3	16	P4	10	P5	10

Grid identification marked and painted at 20 feet intervals.

2nd FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
Pt.1	19
Pt.2	20
Pt.3	7
Pt.4	8
Pt.5	16
Pt.6	9
Pt.7	7
Pt.8	6
Pt.9	9

Survey points of upper floors marked and painted in building.

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Building 24

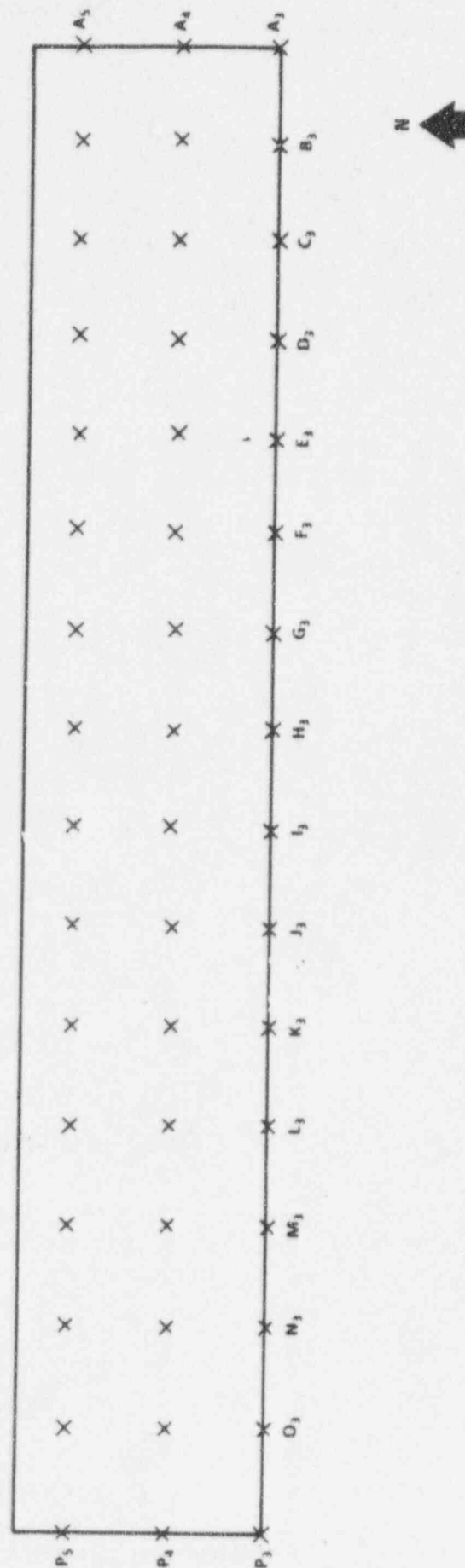


FIGURE 22
GRID MAP FOR BUILDING 24

TABLE 19
POINT SURVEY RESULTS FROM BUILDING 25

GROUND FLOOR			2nd FLOOR		
<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>LOCATION</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>LOCATION</u>
1A	13	Hallway	2A	15	Stairwell
1B	15	Hallway	2B	16	
1C	15	Industrial Engineer.	2C	14	
1D	14	Hallway	2D	16	Reception Area
1E	15	Manager	2E	15	
1F	13	Secretary	2F	13	
1G	14	Office	2G	13	
1H	14	Office	2H	15	Hallway
1I	14	Accounting	2I	15	
1J	16	Quality Assurance	2J	16	
1K	16	Women's Room	2K	15	
1L	15	Closet	2L	17	Hallway
1M	15	Hallway	2M	16	
1N	15	Plant Engineering	2N	16	Restroom
1O	14	Mold Engineering			
1P	16	Closet			
1Q	13	Hallway			
1R	10	Men's Room			
1S	14	Mechanical Test Lab			
1T	14	Office			
1U	15	Office			
1V	16	Locker Room			
1W	17	Design & Process Supt.			
1X	13	Hallway			
1Y	16	Office			
1Z	14	Chief Mold Design Eng.			
1AA	16	Plan Office			
1BB	16	Hallway			
1CC	16	Hallway			

Survey point identification marked and painted in each room and hallway.

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Building 25

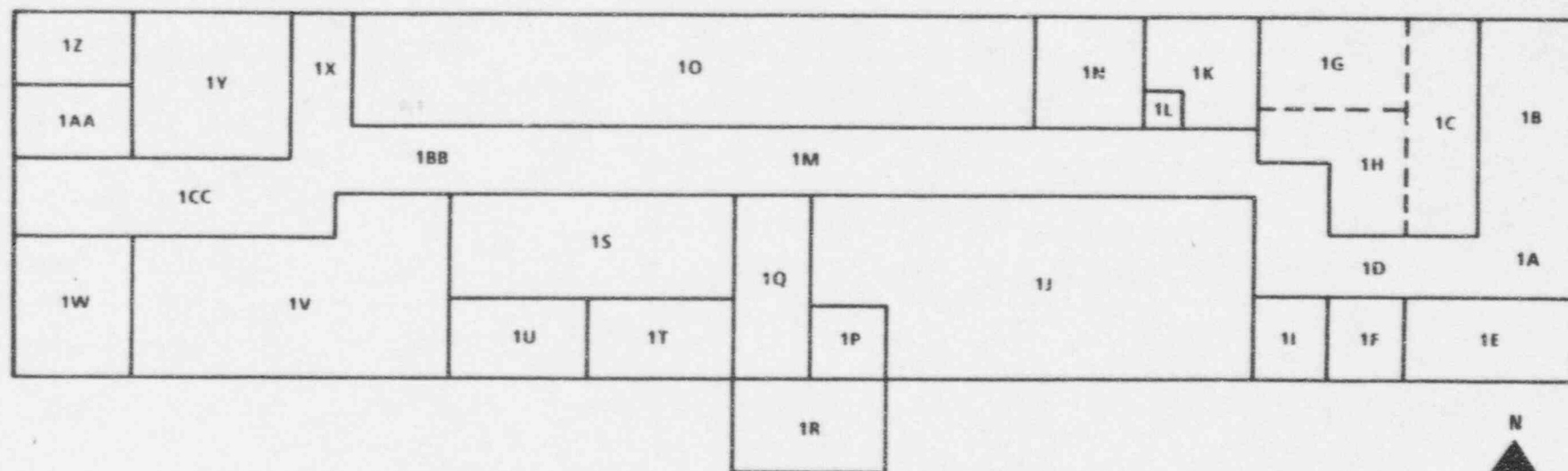


FIGURE 23
GRID MAP FOR BUILDING 25

TABLE 20
POINT SURVEY RESULTS FROM BUILDING 26
GROUND FLOOR

GRID I.D.	GROUND LEVEL	GRID I.D.	GROUND LEVEL
F15	.9412 11.28	F16	.9414 13.16
G15	- 9 8.46	G16	- 11 10.34
H15	- 9 8.46	H16	- 10 9.4
I15	- 10 9.4	I16	- 8 7.52
J15	- 12 11.28	J16	- 9 8.46
K15	- 10 9.4	K16	- 9 8.46
L15	- 8 7.52	L16	- 10 9.4
M15	- 9 8.46	M16	- 11 10.34
N15	- 8 7.52	N16	- 12 11.28
O15	- 10 9.4	O16	- 11 10.34
P15	- 15 14.1	P16	- 12 11.28

Grid identification based on column coordinates of this building.

POINT SURVEY RESULTS FROM BUILDING 26A
GROUND FLOOR

GRID I.D.	GROUND LEVEL	GRID I.D.	GROUND LEVEL
B15	.9416 15.04	B16	.9416 15.04
C15	- 10 9.4	C16	- 12 11.28
D15	- 12 11.28	D16	- 12 11.28
E15	- 13 12.22	E16	- 14 13.16
F15	- 12 11.28	F16	- 14 13.16

Grid identification based on column coordinates of this building.

POINT SURVEY RESULTS FROM BUILDING 26B
GROUND FLOOR

(NO Q15)

GRID I.D.	GROUND LEVEL	GRID I.D.	GROUND LEVEL
R15	.9411 10.34	R16	.9415 14.1
S15	- 13 12.22	S16	- 14 13.16
T15	- 10 9.4	T16	- 15 14.1
U15	- 13 12.22	U16	- 15 14.1
V15	- 12 11.28	V16	- 15 14.1
W15	- 13 12.22	W16	- 14 13.16

(NO Q16)

Grid identification based on column coordinates of this building.

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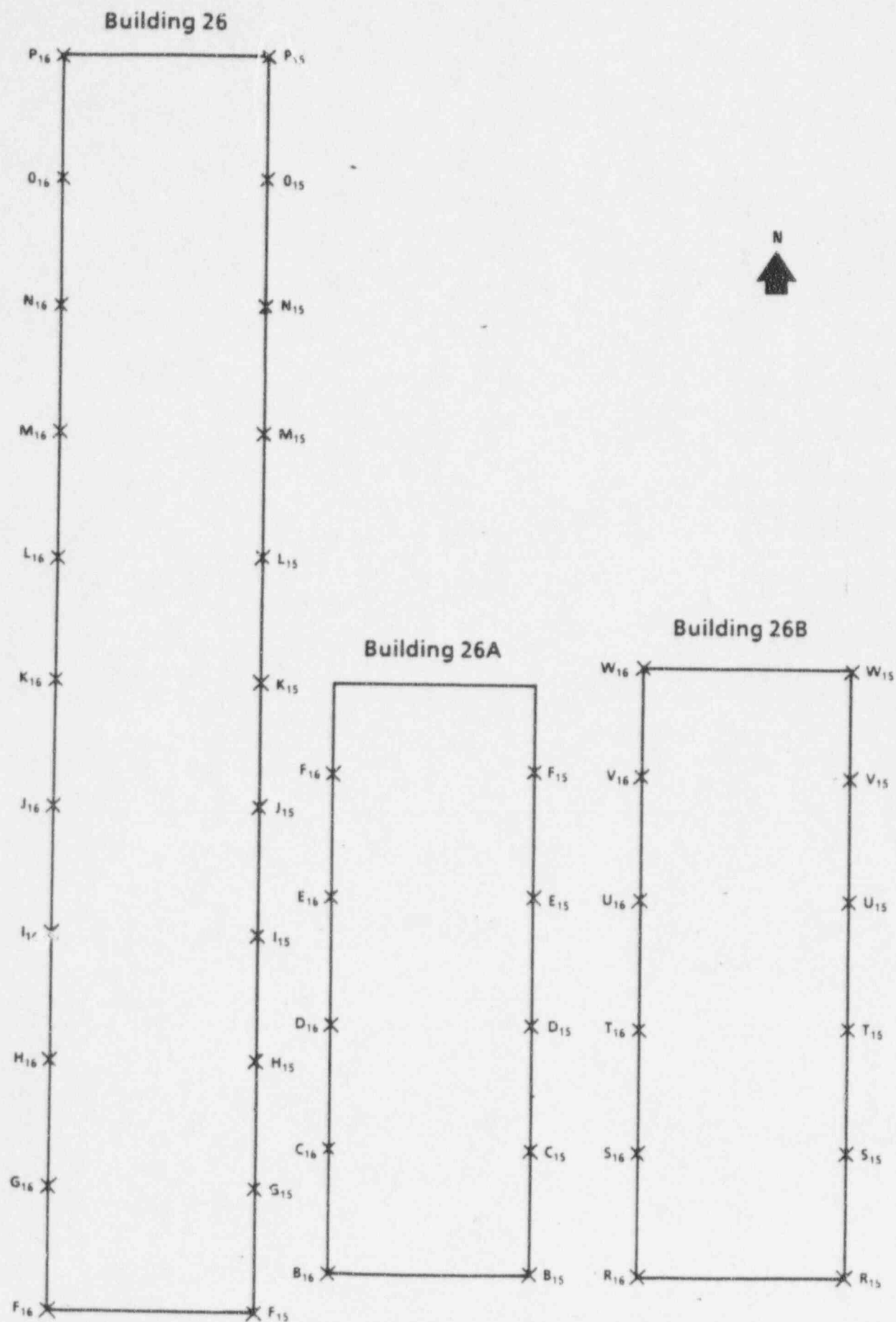


FIGURE 24
GRID MAP FOR BUILDINGS 26, 26A, AND 26B

TABLE 21
POINT SURVEY RESULTS FROM BUILDING 26C
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
B1	14	C1	11	D1	11
B2	11	C2	10	D2	11
B3	11	C3	10	D3	9
B4	8	C4	10	D4	11
B5	8	C5	9	D5	11
B6	8	C6	9	D6	9

Grid identification based on column coordinates of this building.

POINT SURVEY RESULTS FROM BUILDING 26D
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A1	19	B1	17
A2	14	B2	14
A3	14	B3	15
A4	13	B4	13

Grid identification marked and painted at 20 feet intervals.

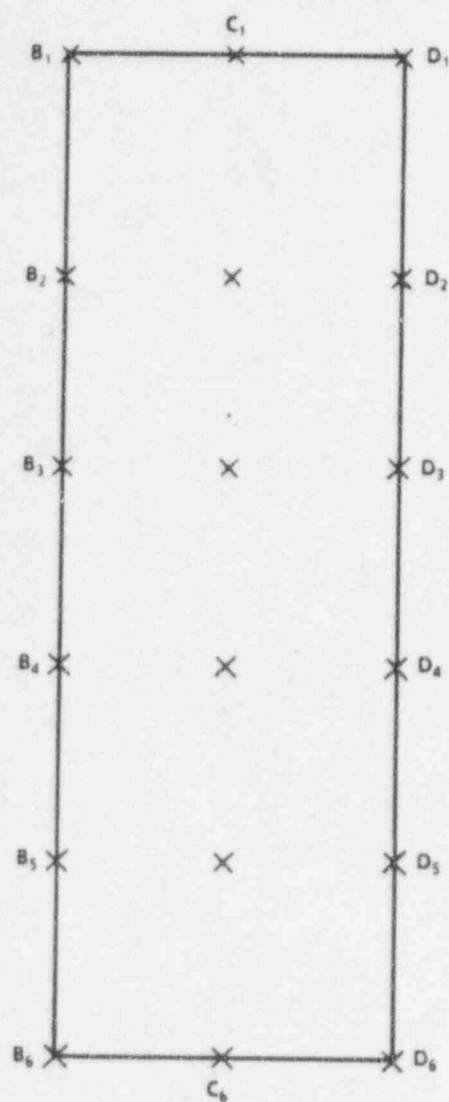
2nd FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
Pt.1	16
Pt.2	16
Pt.3	8
Pt.4	8
Pt.5	13
Pt.6	14
Pt.7	9
Pt.8	7
Pt.9	6

Survey points of upper floors marked and painted in building.
Second floor extends over Buildings 26A, 26, 26D and 26B.

35

Building 26C



Building 26D

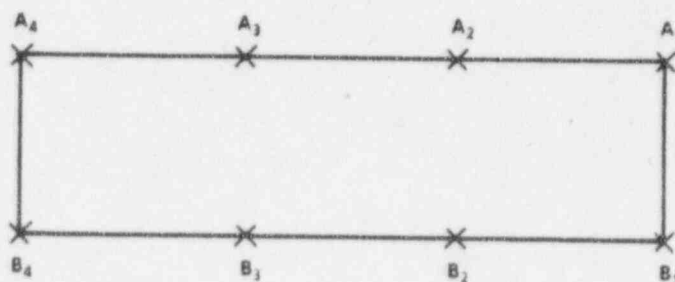


FIGURE 25
GRID MAP FOR BUILDINGS 26C AND 26D

TABLE 22
POINT SURVEY RESULTS FROM BUILDING 29
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A1	15	B1	17
A2	16	B2	14
A3	16	B3	16
A4	16	B4	18

Grid identification marked and painted at 20 feet intervals.

POINT SURVEY RESULTS FROM BUILDING 29A
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A1	15	B1	15
A2	15	B2	15

Grid identification marked and painted at 20 feet intervals.

POINT SURVEY RESULTS FROM BUILDING 29B
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A1	15	B1	15
A2	16	B2	16

Grid identification marked and painted at 20 feet intervals.

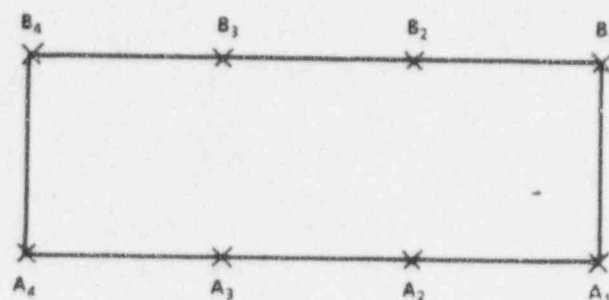
POINT SURVEY RESULTS FROM BUILDING 29C
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A1	16	B1	15
A2	17	B2	17

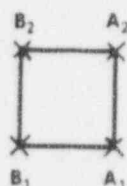
Grid identification marked and painted at 20 feet intervals.

20

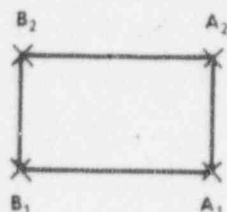
Building 29



Building 29A



Building 29B



Building 29C



FIGURE 26
GRID MAP FOR BUILDINGS 29, 29A, 29B, AND 29C

TABLE 23
POINT SURVEY RESULTS FROM BUILDING 51

Ground floor and basement were not surveyed due to asbestos removal activities.

2nd FLOOR		3rd FLOOR		4th FLOOR		5th FLOOR	
<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
Pt.1	12	Pt.1	11	Pt.1	12	Pt.1	18
Pt.2	14	Pt.2	12	Pt.2	12	Pt.2	16
Pt.3	17	Pt.3	11	Pt.3	12	Pt.3	10
Pt.4	12	Pt.4	10	Pt.4	9	Pt.4	12
Pt.5	17	Pt.5	11	Pt.5	13	Pt.5	13
Pt.6	16	Pt.6	11	Pt.6	13	Pt.6	15
Pt.7	12	Pt.7	11	Pt.7	11	Pt.7	17
Pt.8	13	Pt.8	10	Pt.8	10	Pt.8	10
Pt.9	12	Pt.9	10	Pt.9	11	Pt.9	12

Survey points of upper floors marked and painted in building.

36

Building 51

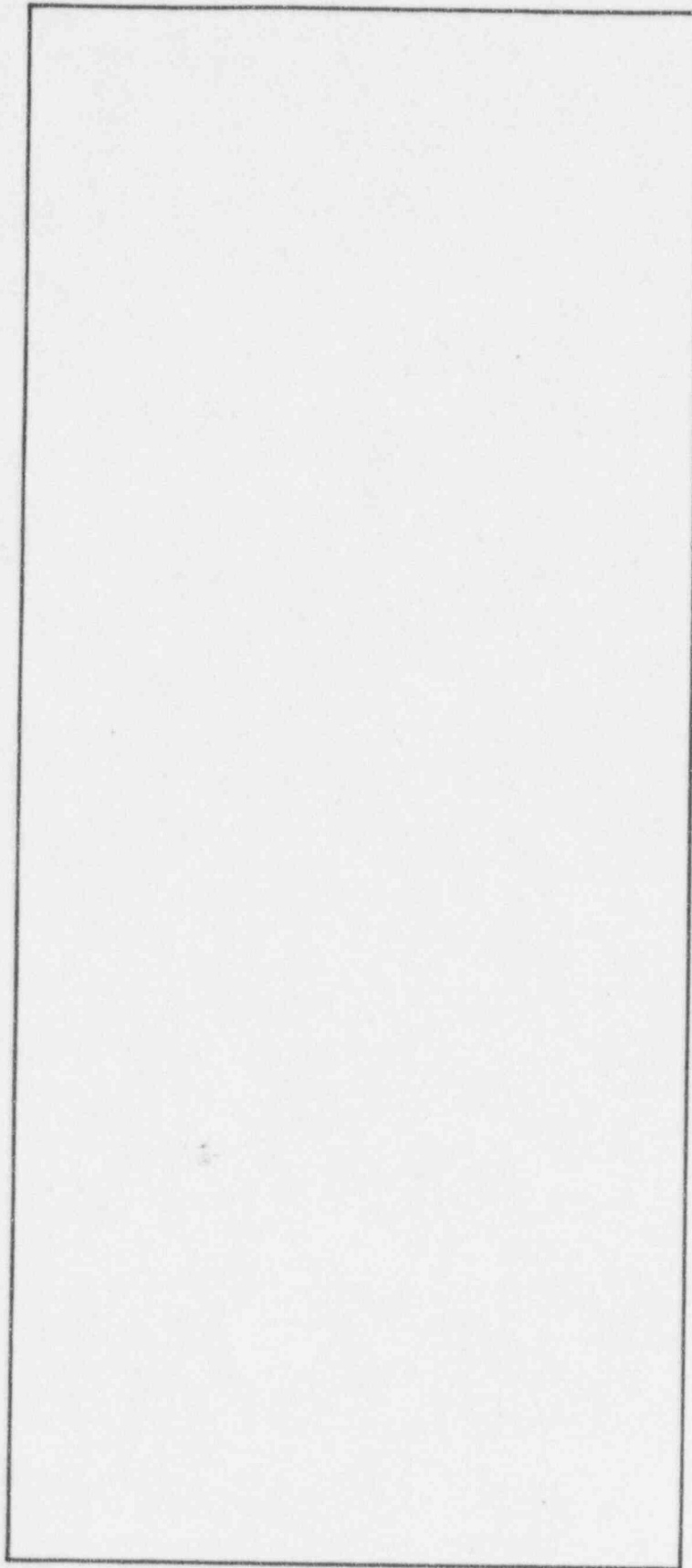


FIGURE 27
GRID MAP FOR BUILDING 51

TABLE 24
POINT SURVEY RESULTS FROM BUILDING 53
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A1	15	B1	14	C1	15
A2	15	B2	14	C2	15
A3	15	B3	13	C3	15
A4	14	B4	15	C4	15
A5	15	B5	13	C5	13
A6	13	B6	14	C6	14
A7	14	B7	15	C7	13
A8	14	B8	15	C8	13
D1	15	E1	15		
D2	15	E2			
D3	15	E3	16		
D4	14	E4	15		
D5	13	E5	15		
D6	13	E6	14		
D7	12	E7	14		
D8	13	E8	15		

Grid identification of ground floor based on column coordinates of this building.

2nd FLOOR		3rd FLOOR		4th FLOOR		5th FLOOR	
<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
Pt.1	15	Pt.1	18	Pt.1	15	Pt.1	15
Pt.2	16	Pt.2	15	Pt.2	17	Pt.2	14
Pt.3	14	Pt.3	16	Pt.3	15	Pt.3	15
Pt.4	15	Pt.4	15	Pt.4	16	Pt.4	16
Pt.5	15	Pt.5	16	Pt.5	15	Pt.5	15
Pt.6	15	Pt.6	16	Pt.6	16	Pt.6	16
Pt.7	14	Pt.7	15	Pt.7	16	Pt.7	16
Pt.8	14	Pt.8	15	Pt.8	16	Pt.8	15
Pt.9	15	Pt.9	14	Pt.9	16	Pt.9	13

Survey points of upper floors marked and painted in building.

Basement was not surveyed due to standing water.

75

Building 53

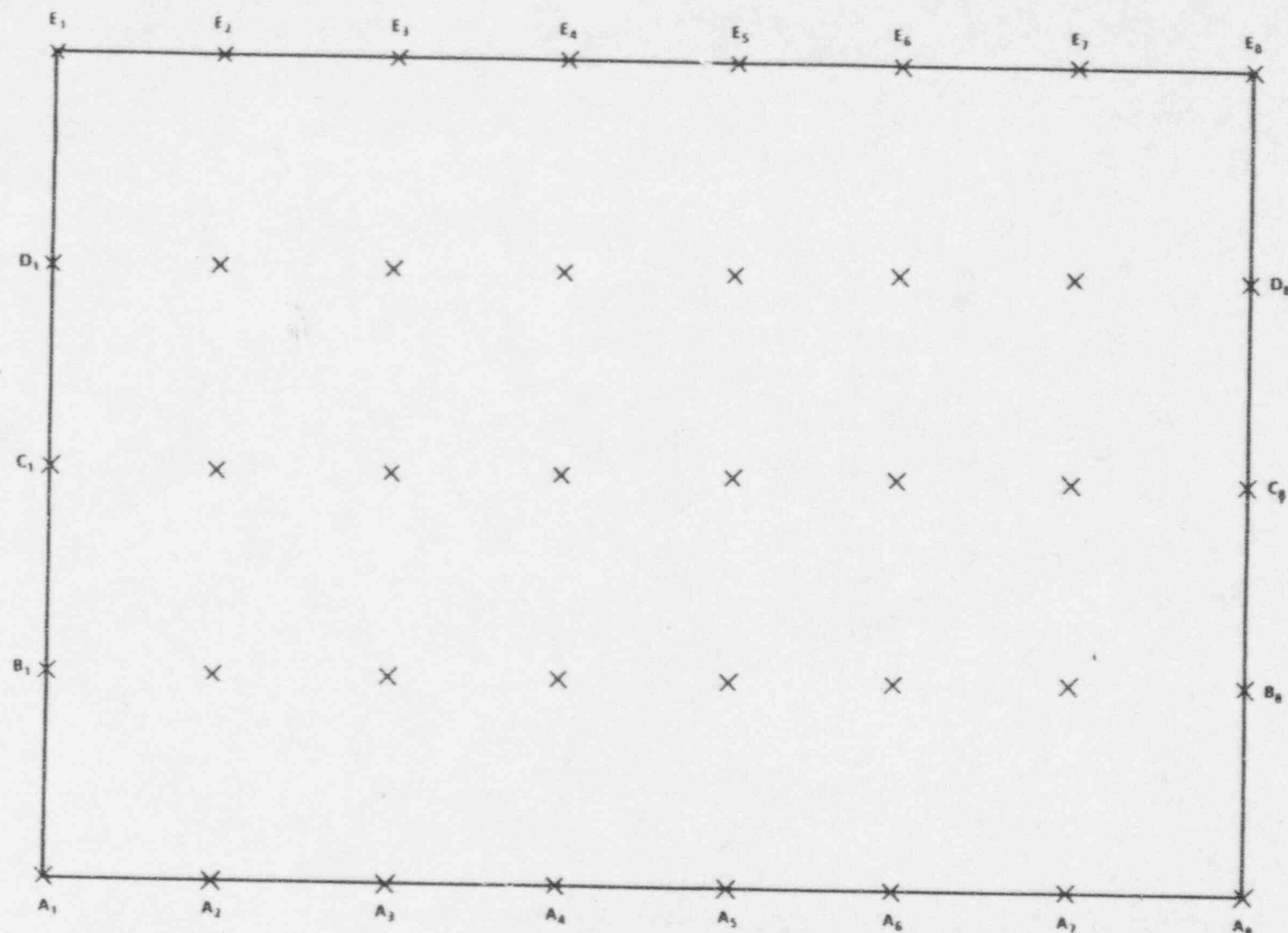


FIGURE 28
GRID MAP FOR BUILDING 53



TABLE 25
POINT SURVEY RESULTS FROM BUILDING 60
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A1	13	B1	11	C1	12
A2	12	B2	11	C2	10
A3	11	B3	11	C3	10
A4	11	B4	11	C4	11
A5	10	B5	11	C5	10
A6	10	B6	10	C6	12
A7	12	B7	11	C7	13
A8	13	B8	13	C8	12
A9	12	B9	13	C9	13
D1	12	E1	13		
D2	11	E2	13		
D3	10	E3	13		
D4	10	E4	11		
D5	9	E5	10		
D6	11	E6	14		
D7	13	E7	14		
D8	14	E8	14		
D9	13				

Survey points of marked and painted on columns in building.

2nd FLOOR		3rd FLOOR		4th FLOOR		5th FLOOR	
<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
Pt.1	15	Pt.1	12	Pt.1	14	Pt.1	13
Pt.2	15	Pt.2	12	Pt.2	13	Pt.2	13
Pt.3	11	Pt.3	12	Pt.3	12	Pt.3	12
Pt.4	12	Pt.4	11	Pt.4	13	Pt.4	12
Pt.5	11	Pt.5	12	Pt.5	14	Pt.5	11
Pt.6	15	Pt.6	12	Pt.6	14	Pt.6	12
Pt.7	12	Pt.7	11	Pt.7	13	Pt.7	Water
Pt.8	11	Pt.8	11	Pt.8	13	Pt.8	Water
Pt.9	17	Pt.9	9	Pt.9	12	Pt.9	Water

Survey points of upper floors marked and painted in building.

Basement was not surveyed due to standing water.

77

Building 60

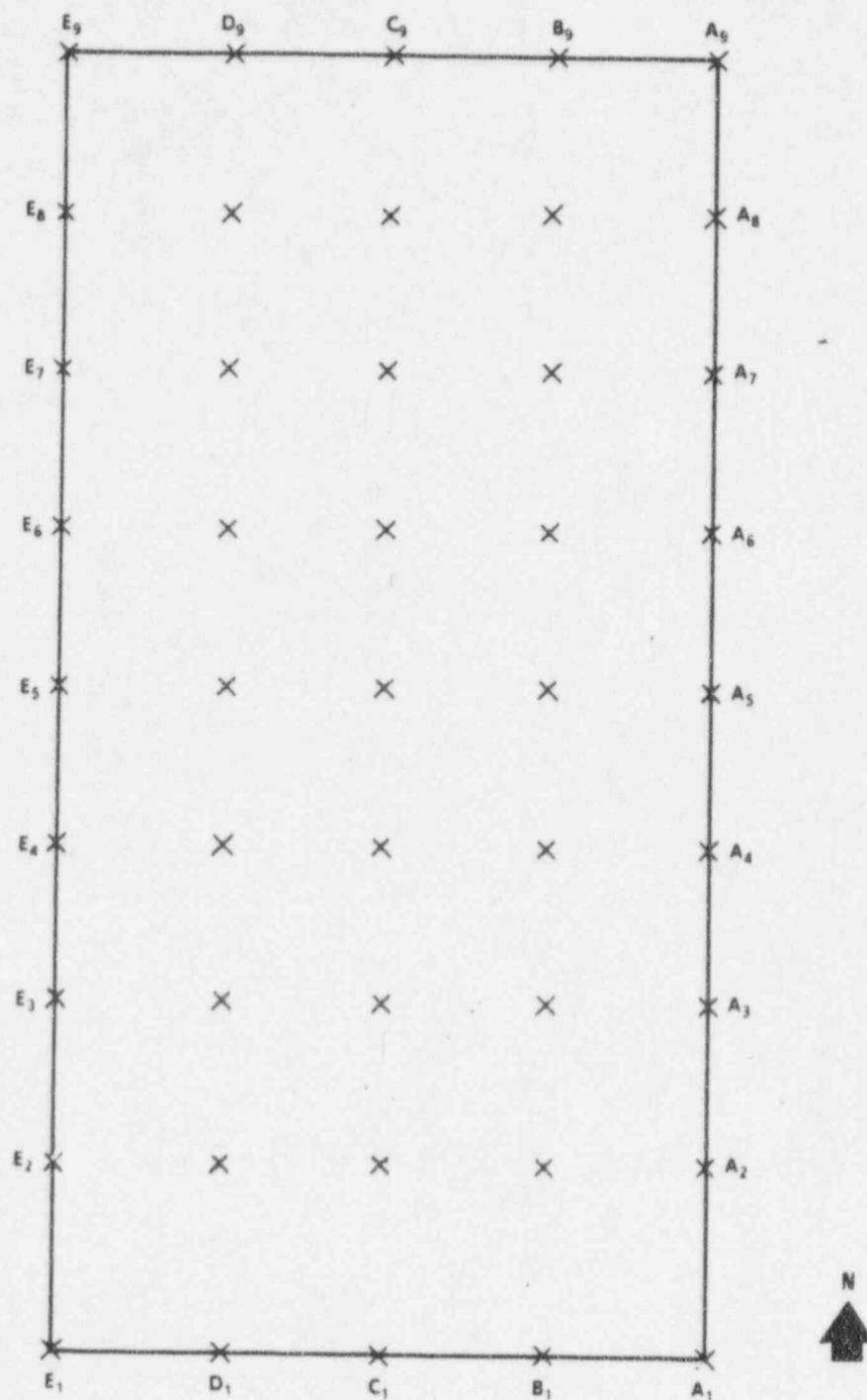


FIGURE 29
GRID MAP FOR BUILDING 60

TABLE 26
POINT SURVEY RESULTS FROM BUILDING 65
GROUND FLOOR

<u>GROUND LEVEL</u>	<u>LOCATION</u>	<u>GROUND LEVEL</u>	<u>LOCATION</u>
16	A1 Office	19	A8 Heat Treating
15	B1	24	B8 Polishing Room
15	C1	22	C8 Polishing Room
19	D1	16	D8 G.T.L. Finishing
16	E1	16	E8 G.T.L. Finishing
16	A2	16	A9 Heat Treating
15	B2	23	B9 G.T.L. Lab
15	C2	20	C9 G.T.L. Lab
16	D2	16	D9 G.T.L. Finishing
17	E2	16	E9 G.T.L. Finishing
14	A3	16	A10 Heat Treating
15	B3 Constant Room	20	B10 Hallway
18	C3 Constant Room	18	C10 Foundry Lab
17	D3 Tool Crib	17	D10 Foundry Lab
12	E3	18	E10 Foundry Lab
14	A4	16	A11 Heat Treating
16	B4	21	B11 Hallway
16	C4 Work Space	17	C11 Foundry Lab
15	D4	15	D11 Foundry Lab
12	E4 Motor Assembly	13	E11 Foundry Lab
15	A5	13	A12
15	B5 GM Room	19	B12 Foundry Lab
18	C5 GM Room	18	C12 Alternator Room
19	D5 Welding Room	14	D12 Foundry Lab
20	E5 Drill Press	15	E12 Foundry Lab
21	A6 G.T.L. Machine Shop	15	A13 Interpretation
21	B6 G.T.L. Machine Shop	19	B13 Hallway
21	C6 Bearing Test	18	C13 Hallway
18	D6 Office	17	D13 Foundry Lab
17	E6 G.T.L. Testing	17	E13 Foundry Lab
19	A7 G.T.L. Machine Shop	17	A14 Exposure Room
21	B7 G.T.L. Machine Shop	14	B14 Castings Storage
18	C7 G.T.L. Testing	10	C14 Exposure Room
16	D7 G.T.L. Testing	17	D14 Sand Lab
17	E7 G.T.L. Testing	17	E14 Lab

Survey readings are the highest numbers recorded to the southeast of each of the building coordinates.

2nd FLOOR

Pt.1 16	Pt.2 10	Pt.3 Open Bay	Pt.4 15	Pt.5 12
Pt.6 13	Pt.7 15	Pt.8 16	Pt.9 14	

BASEMENT

10 In Hallway 16 In Restroom
Rest of basement was inaccessible for surveys.

80

Building 65

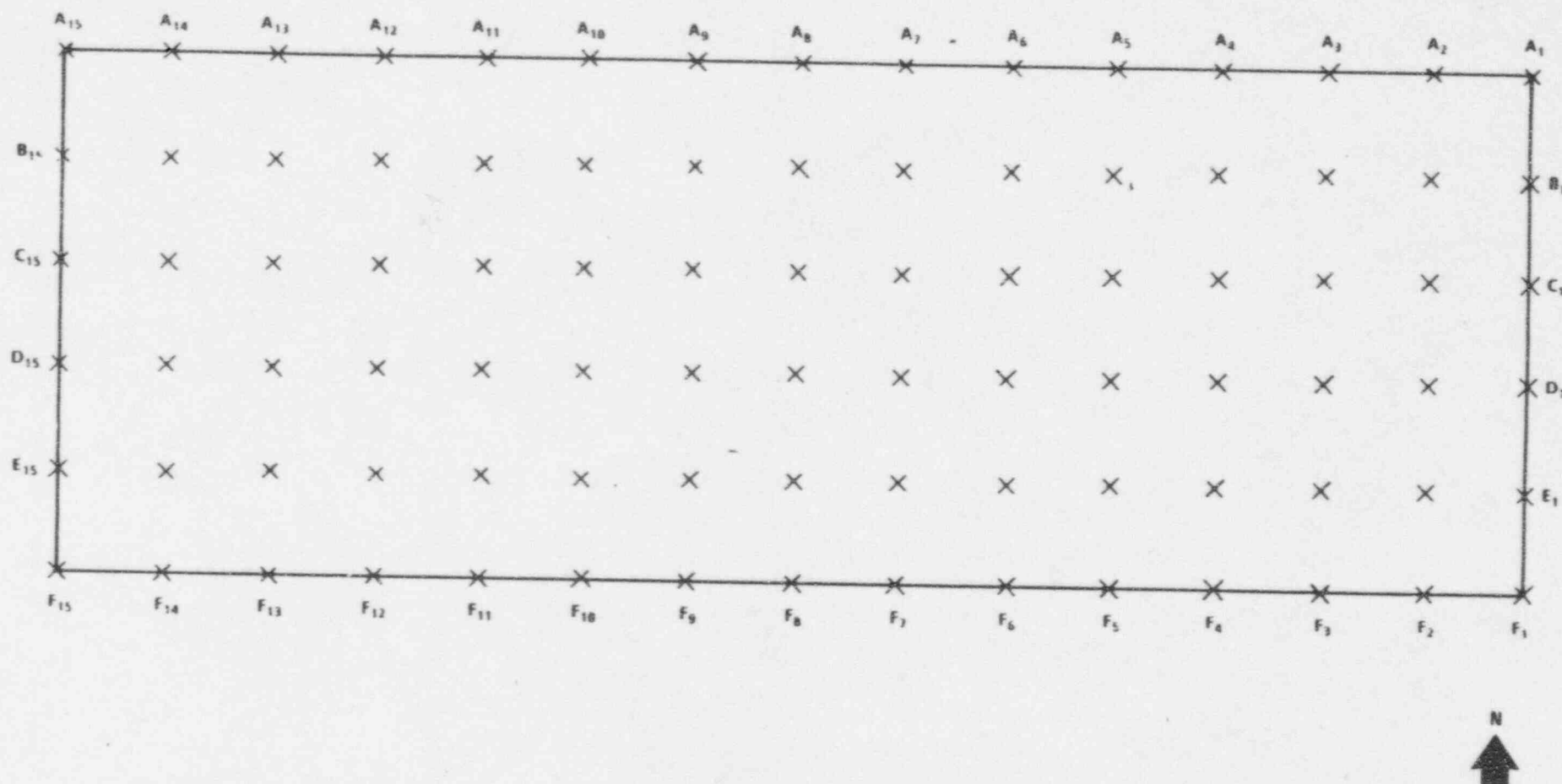


FIGURE 30
GRID MAP FOR BUILDING 65

TABLE 27
POINT SURVEY RESULTS FROM BUILDINGS 70 AND 70A
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
C1	12	D1	9	E1	12
C2	12	D2	11	E2	10
C3	11	D3	10	E3	9
C4	10	D4	11	E4	13
C5	12	D5	12	E5	14
C6	11	D6	10	E6	11
F1	12	G1	11	H1	10
F2	10	G2	12	H2	11
F3	10	G3	12	H3	11
F4	11	G4	12	H4	9
F5	12	G5	13	H5	10
F6	12	G6	10	H6	11

Grid identification based on column coordinates of this building.

2nd FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
Pt.1	10
Pt.2	9
Pt.3	7
Pt.4	7
Pt.5	8
Pt.6	10
Pt.7	8
Pt.8	7
Pt.9	6

Survey points of upper floors marked and painted in building.
Second floor extends over Building 70E.

45

Building 70, 70A

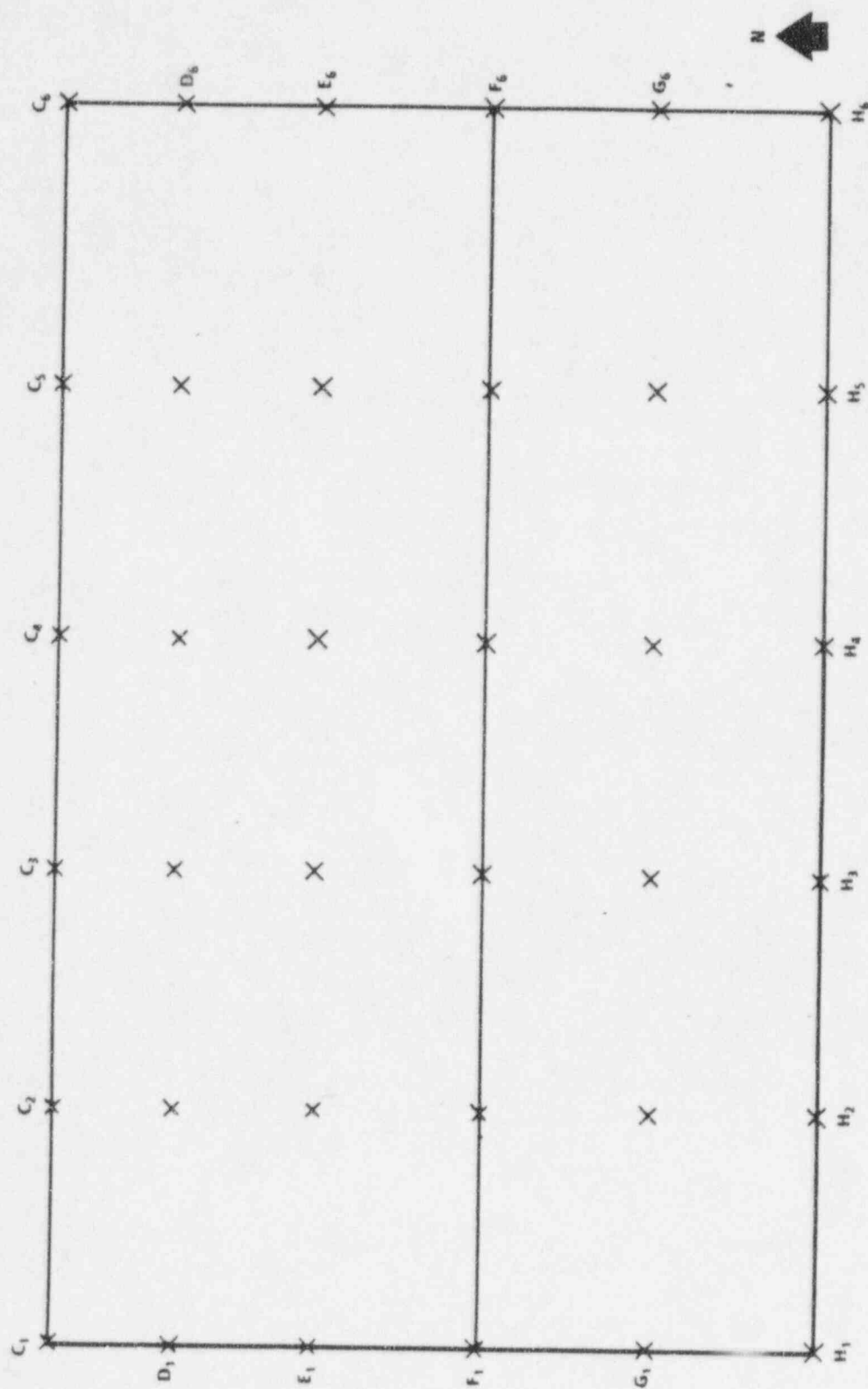


FIGURE 31
GRID MAP FOR BUILDINGS 70 AND 70A

TABLE 28
POINT SURVEY RESULTS FROM BUILDING 70B
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A1	9	B1	9
A2	11	B2	11
A3	10	B3	10
A4	11	B4	10
A5	12	B5	12
A6	12	B6	11
A7	10	B7	13

Grid identification marked and painted in building.

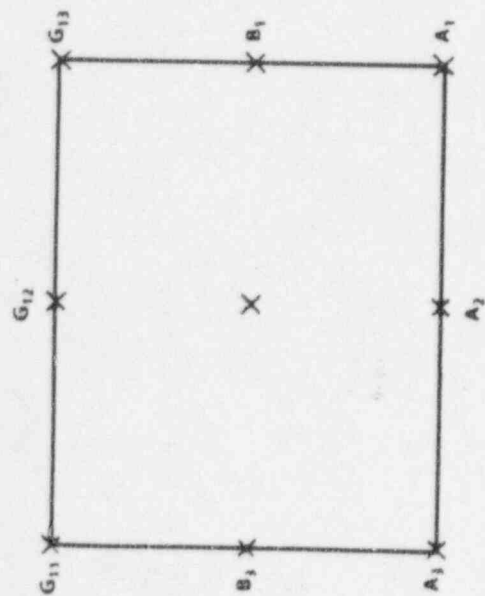
POINT SURVEY RESULTS FROM BUILDING 70C
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A1	12	B1	12	G11	9
A2	10	B2	9	G12	8
A3	10	B3	8	G13	9

Grid identification marked and painted in building.

23

Building 70C



Building 70B

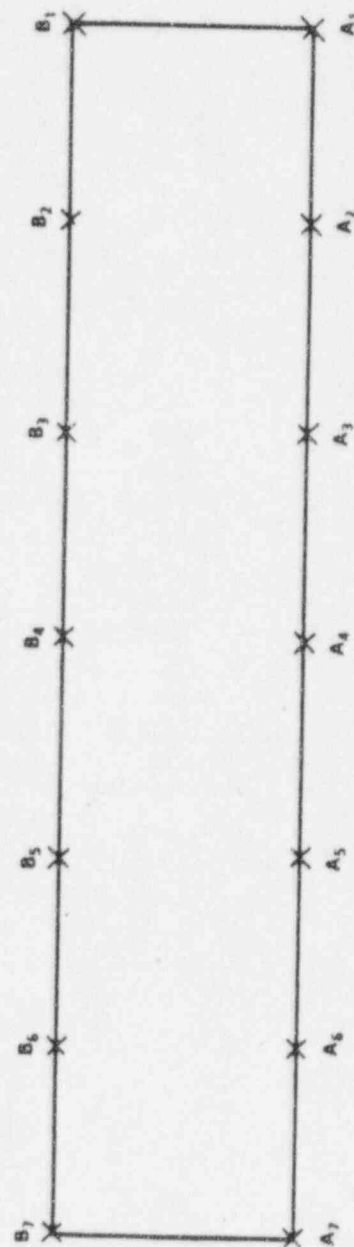


FIGURE 32
GRID MAP FOR BUILDINGS 70B AND 70C

TABLE 29
POINT SURVEY RESULTS FROM BUILDINGS 70D AND 70E
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A6	11	B6	10	C6	11
A7	9	B7	9	C7	8
A8	8	B8	8	C8	7
A9	9	B9	8	C9	7
A10	8	B10	8	C10	8
A11	8	B11	9	C11	8
A12	9	B12	8	C12	8
A13	12	B13	9	C13	8
D6	10	E6	11	F6	12
D7	9	E7	8	F7	10
D8	9	E8	8	F8	9
D9	8	E9	9	F9	9
D10	8	E10	8	F10	8
D11	7	E11	7	F11	9
D12	8	E12	9	F12	8
D13	10	E13	10	F13	9

Grid identification based on column coordinates of this building.

48

Building 70D, 70E

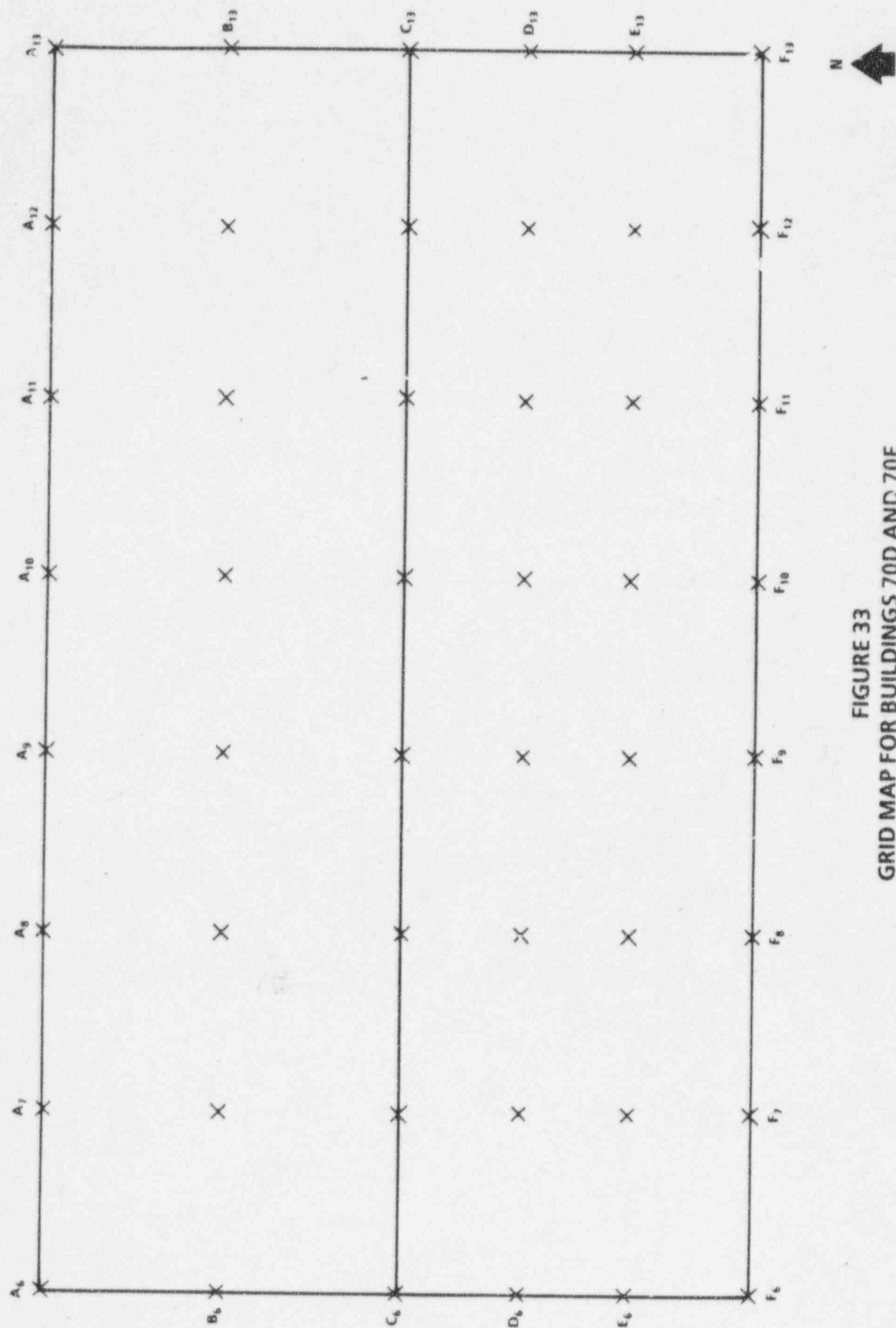


FIGURE 33
GRID MAP FOR BUILDINGS 70D AND 70E

TABLE 30
POINT SURVEY RESULTS FROM BUILDING 72
2nd FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
Pt.1	11
Pt.2	12
Pt.3	12
Pt.4	11
Pt.5	13
Pt.6	11
Pt.7	11
Pt.8	10
Pt.9	10

Survey points of upper floors marked and painted in building.
There is only a second floor on the west end of Building 72.
The rest of Building 72 is included in the intense survey table.

9

TABLE 31
POINT SURVEY RESULTS FROM BUILDING 72A
GROUND FLOOR

<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>	<u>GRID</u> <u>I.D.</u>	<u>GROUND</u> <u>LEVEL</u>
A1	12	A2	13
B1	11	B2	12
C1	14	C2	10
D1	13	D2	9
E1	10	E2	9

Grid identification marked and painted at 20 feet intervals.

10

Building 72A

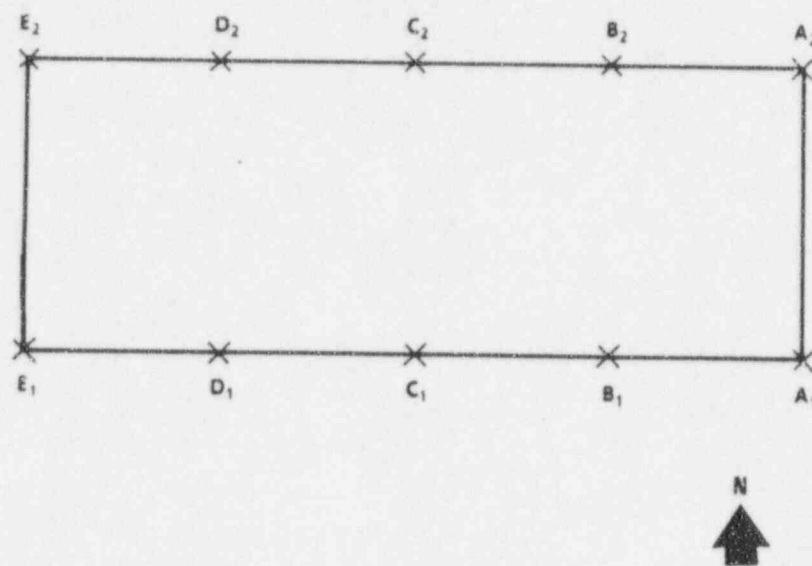


FIGURE 34
GRID MAP FOR BUILDING 72A

APPENDIX A

Certificate of Calibration

RSO, Inc.
P.O. Box 1526
Laurel, MD 20707
(301) 953-2482

RSO ORDER # 2.248

P.O. # 06-05474

CERTIFICATE OF CALIBRATION

ISSUED TO

Customer: NUS Corporation

Address: 910 Clopper Road

City: Gaithersburg

State: Md Zip: 20878-1399

Contact: Ed Hollis

Phone: (301) 258-1863

INSTRUMENT

Make: Ludlum

Type: μ R Meter

Model: 19

Serial #: 22529

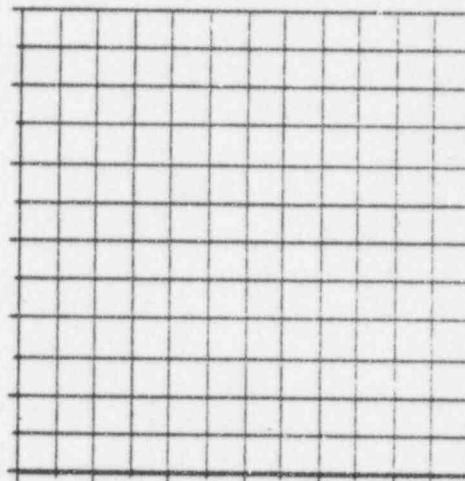
DETECTORS

	Make	Type	Model	Serial Number	Voltage (V)	Radionuclide	Efficiency
1.		Int. Scint.			1200		
2.							
3.							
4.							

RSO, Inc. certifies that on 6/28/89 the above described instrument was calibrated in a known radiation field using a ^{137}Cs (662 keV) beam calibrator (J.L. Shepard Model 28-6A, S/N 10056). The results are tabulated below. Calibration is traceable to the National Bureau of Standards.

Scale or Range	Calculated ($\mu\text{R/h}$)	Observed ($\mu\text{R/h}$)	C.F.
25	5.000	5.000 *	1.00
	20.000	20.000 *	1.00
50	10.000	10.000 *	1.00
	40.000	40.000 *	1.00
250	50.000	50.000 *	1.00
	200.000	200.000 *	1.00
500	100.00	100.00 *	1.00
	400.00	400.00 *	1.00
5000	1,000.00	1,000.00	1.00
	4,000.00	4,000.00	1.00

Average correction factor: 1.00



CALIBRATION GEOMETRY

ORIENTATION TO RADIATION BEAM

FRONT X BACK PARALLEL PERPENDICULAR

PROBE WINDOW

OPEN CLOSED FIXED X

INSTRUMENT CHECKS

CHECK SOURCE: NA :

BATTERY CHECK: BATT

ENVIRONMENTAL CONDITIONS

Temperature: 23 °C

Pressure: 760 mmHg

Humidity: 55 %

COMMENTS

* RSO Inc. certifies that on 6/28/89 the above described instrument was calibrated using electronically generated pulses with the results are tabulated above. Calibration equipment and sources used are traceable to the National Bureau of Standards

This instrument should be returned for recalibration no later than 12/27/89

Calibrated By:

Michael R. Carr

Reviewed By:

Maryland License MD-33-021-01

Date: 6/28/89

