

**US Army**  
**Communications - Electronics Command**  
**Directorate of Safety Risk Management**



**Radiological Survey Report**  
**Building 217 and Building 218 (Partial)**  
**Federal Emergency Management Agency**  
**National Instrumentation Center**

**Berryville, Virginia**  
**22 - 30 January 1997**

EXECUTIVE SUMMARY  
RADIOLOGICAL ASSESSMENT SURVEY OF  
BUILDING 217 AND BUILDING 218 (PARTIAL)  
FEDERAL EMERGENCY MANAGEMENT AGENCY  
NATIONAL INSTRUMENTATION CENTER

BERRYVILLE, VIRGINIA  
22 - 31 January 1997

1. Purpose. This survey was conducted to verify that no residual radioactivity, which was the result of operations involving radioactive material, was present in Building 217 and the areas surveyed in Building 218. During the past ten years these buildings were utilized as administrative offices, instrument laboratories, repair, fabrication and calibration shops. Sealed radioactive sources were used to support these activities. The majority of the radioactive sources used contained Cobalt-60 ( $^{60}\text{Co}$ ) and Cesium-137 ( $^{137}\text{Cs}$ ). Other sources used contained Radium-226 ( $^{226}\text{Ra}$ ) and Uranium-238 ( $^{238}\text{U}$ ). Considering their radioactive material use history the buildings were classified as "unaffected" areas and surveyed for contamination potential as defined in NUREG/CR-5849.

2. Summary of Results. The results of the survey indicate there is no residual radioactivity, which is distinguishable from background, as a result of operations involving radioactive material in Building 217 and the areas surveyed in Building 218.

3. Recommendations. Recommend that Building 217 and the surveyed areas of Building 218 be released for unrestricted use.

RADIOLOGICAL ASSESSMENT SURVEY OF  
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BERRYVILLE, VIRGINIA  
22 - 31 JANUARY 1997

1. REFERENCES. See Appendix A.
2. AUTHORITY. The survey was performed in response to a verbal request from the Federal Emergency Management Agency (FEMA) National Instrumentation Center (NIC) Project Officer, Mr. Carl Siebentritt.
3. PURPOSE. This survey was conducted to verify that no residual radioactivity, which was the result of operations involving radioactive material, was present in Building 217 and the areas surveyed in Building 218. During the past ten years these buildings were utilized as administrative offices, instrument laboratories, repair, fabrication and calibration shops. Sealed radioactive sources were used to support these activities. The majority of the radioactive sources used contained  $^{60}\text{Co}$  and  $^{137}\text{Cs}$ . Other sources used in these buildings contained  $^{226}\text{Ra}$  and  $^{238}\text{U}$ . Considering their radioactive material use history the buildings were classified as "unaffected" areas and the surveys for contamination potential were conducted as defined in NUREG/CR-5849.
4. GENERAL.
  - a. This survey was conducted to detect  $^{60}\text{Co}$ ,  $^{137}\text{Cs}$ ,  $^{226}\text{Ra}$  and  $^{238}\text{U}$ . These radionuclides are used in instrument check and calibration sources, and are component parts of, or contained in, FEMA designed commodities that were used in buildings 217 and 218.

b. The building surveys were performed by Team Leader, Mr. Martin Connolly, IceSolv, Inc. (Contractor), Senior Health Physics Technician; Mr. Richard Chalk, IceSolv, Inc., Junior Health Physics Technician; and Mr. John McDonald, IceSolv, Inc., Junior Health Physics Technician. The surveys were conducted during the period of 22 through 31 January 1997.

c. The personnel that conducted the surveys are radiation safety specialists with varied training and experience in radiological health and safety. All members of the survey team have completed appropriate occupational health and safety training provided by the US Army Communications-Electronics Command (CECOM) Directorate of Safety Risk Management (DSRM) to effect a safe working environment.

d. Laboratory analyses were performed by the CECOM DSRM Radiation Analysis Laboratory under the supervision of the laboratory manager, Mr. Brian McKee, M.H. Chew & Associates, Inc. (Contractor).

e. List of abbreviations is found in Appendix B.

## 5. BACKGROUND.

### a. Chronology.

(1) FEMA is currently licensed by the US Nuclear Regulatory Commission (NRC), under License Number 08-01297-06, Docket Number 030-07130, to possess and use radioactive material to conduct calibration and testing of its radiation detection instrumentation and for training of emergency response personnel. The activities that used licensed radioactive material in Building 217 and the surveyed areas of Building 218 have been terminated and all radioactive material removed.

(2) During the past ten years these buildings were utilized as administrative offices, instrument laboratories, repair, fabrication and calibration shops. Sealed radioactive sources were used in these buildings. All radioactive material was removed from



this building prior to 22 January 1997. Considering their radioactive material use history the buildings were surveyed as "unaffected" buildings as defined in NUREG/CR-5849.

(3) The CECOM DSRM began planning and preparation for performing this survey in early January 1997.

(4) The survey of the buildings began 22 January 1997 and was completed on 31 January 1997.

b. Site Condition at Time of Termination Survey. Building 217 and the areas of Building 218 surveyed were vacant with furniture in place as indicated on survey maps included in Appendix C, SURVEY DATA.

c. Identity of Potential Contaminants and Their Release Guidelines.

(1) The radionuclides of interest for the survey covered by this report are  $^{60}\text{Co}$ ,  $^{137}\text{Cs}$ ,  $^{226}\text{Ra}$  and  $^{238}\text{U}$ .

(2) Release guidelines were taken from NRC Regulatory Guide 1.86, Table 1, Acceptable Surface Contamination Levels. Table 1 lists release limits for the isotopes of interest.

Table 1

Nuclide	Average	Maximum	Removable
Cobalt 60 Cesium 137 Uranium 238	5,000 dpm/100cm <sup>2</sup>	15,000 dpm/100cm <sup>2</sup>	1,000 dpm/100cm <sup>2</sup>
Radium 226	100 dpm/100cm <sup>2</sup>	300 dpm/100cm <sup>2</sup>	20 dpm/100cm <sup>2</sup>

\*\* (dpm/100 cm<sup>2</sup>) disintegrations per minute per one hundred square centimeters.

## 6. RADIATION SURVEYS AND RESULTS.

### a. Field Survey Instruments.

(1) A list of survey instruments, parameters, efficiencies, and minimum detectable activities is provided in Table 2. All instruments were calibrated in accordance with US

Army Test Measurement and Diagnostic Equipment Activity schedules for "ACTIVE" (Health and Safety) instruments. Daily instrument performance check results are listed on the attached table.

(2) Minimum Detectable Activity (MDA).

(a) MDA for fixed alpha and/or beta was determined for each instrument operating in the scaler mode using the following formula that considers counting time, detector efficiency and the detector's sensitive area:

$$MDA = \frac{\left(\frac{2.71}{.5}\right) + 3.29 \sqrt{\frac{Bkg\ rate_{cpm}}{5} + \frac{Bkg\ rate_{cpm}}{1}}}{Detector\ Eff \times \frac{Detector\ area}{100}}$$

(b) MDA for alpha and beta scanning was calculated using the following formula that considers the instrument response time, detector efficiency and the detector's sensitive area:

$$MDA = \frac{4.65 + \sqrt{\frac{Bkg_{cpm}}{2\ (Inst.\ time\ const)}}}{Detector\ Eff \times \frac{Detector\ area}{100}}$$

(3) **Flag Values:** Detection flag values are instrument readings in counts per minute (cpm) that if exceeded, dictate that additional survey or evaluation of the area is required. The flag value is calculated at 25 percent of the fixed contamination release plus background. The following are example calculations of flag values:

**Alpha Flag:**

$$\left( 100 \text{ dpm} \times 0.25 \times \text{inst eff} \right) + \text{Bkg rate}_{\text{cpm}} = \text{Flag value}_{\text{cpm}}$$

Example Calculation, alpha:

$$\left( 100 \text{ dpm} \times 0.25 \times .366 \right) + 13 \text{ cpm} = 21 \text{ cpm}$$

**Beta Flag:**

$$\left( 5000 \text{ dpm} \times 0.25 \times \text{inst eff} \right) + \text{Bkg rate}_{\text{cpm}} = \text{Flag value}_{\text{cpm}}$$

Example Calculation, beta:

$$\left( 5000 \text{ dpm} \times 0.25 \times .392 \right) + 900 \text{ cpm} = 1390 \text{ cpm}$$

(4) No flag value was exceeded on any reading taken in this survey.

**Table 2**  
**Daily Pre-Operation Performance Check**

US ARMY AN/PDR-77 RADIAC WITH 100 CM <sup>2</sup> ALPHA DETECTOR							
Date	Instrument Serial No.	Alpha Efficiency (percent)	Alpha Bkg (cpm)*	Alpha MDA (dpm/100 cm <sup>2</sup> )**	Beta Efficiency (percent)	Beta Bkg (cpm)	Beta MDA (dpm/100 cm <sup>2</sup> )
23 JAN 97	1175A	100***	1	10	N/A	N/A	N/A
24 JAN 97	1175A	100	1	10	N/A	N/A	N/A
29 JAN 97	1175A	100	1	10	N/A	N/A	N/A
30 JAN 97	1175A	100	1	10	N/A	N/A	N/A
LUDLUM MODEL # 2360 WITH 575 CM <sup>2</sup> ALPHA AND BETA (GAS FLOW PROPORTIONAL DETECTOR)							
22 JAN 97	133663	33.53	20	8	31.16	1113	62
23 JAN 97	133663	33.53	27	9	31.16	1193	64
24 JAN 97	133663	33.53	7	11	31.16	532	76
LUDLUM MODEL # 2224 WITH 575 CM <sup>2</sup> ALPHA AND BETA (GAS FLOW PROPORTIONAL DETECTOR)							
29 JAN 97	119806	36.25	5	4	33.73	700	45
LUDLUM MODEL # 2224 WITH 15.5 CM <sup>2</sup> G-M DETECTOR (< 0.7 mg / CM <sup>2</sup> window)							
29 JAN 97	132143	N/A	N/A	N/A	20.1	50	1468
30 JAN 97	132143	N/A	N/A	N/A	20.1	43	1373
Ludlum Model 19 Twice Daily QA Checks							
Date	Instrument Serial No.	Range Response Checks++					Performed by
		5000	500	250	50	25	
22 JAN AM	127410	600	230	120	26	17	R.C.
22 JAN PM	127410	600	250	130	26	17	R.A.C.
23 JAN AM	127410	600	230	120	25	17	R.C.
23 JAN PM	127410	600	260	120	26	16	R.C.
23 JAN AM	131265	700	260	120	28	17	RAC
23 JAN PM	131265	700	250	120	30	17	RAC

\* (cpm) is total counts per minute, no probe area correction.

\*\* (dpm/100 cm<sup>2</sup>) is disintegrations per minute per one hundred square centimeters. Product of MDA formula calculation.

\*\*\* AN/PDR-77 Alpha detector is calibrated and electronically compensated to provide direct reading in dpm/100 cm<sup>2</sup> which is 100 percent efficiency.

++ Check source, <sup>137</sup>Cs, 2 microCuries, ID Number 539-5-3, Assay date 1 June 1996.

**b. Survey Method.**

(1) A minimum ten percent of all work surface, shelves, drawers, and floor surface in the survey area was scanned for alpha, beta and gamma radiation. When the scanning was completed random sample points were selected through out the buildings. The sample points are spread across the buildings interior and the location of each is marked on one of the maps in appendix C,

SURVEY DATA. At each sample point a sample data set was collected. A sample data set consists of an alpha and beta count rate measurement, a gamma dose rate measurement, and a gross alpha-beta wipe.

(2) Ludlum Model 19 MicroR meters were used for all gamma scanning and dose rate measurements. Gamma scanning was done with the detector no more than 15 centimeters from the surface being scanned. The fixed gamma dose rate measurements were taken one meter above each sample points surface.

(3) Ludlum Models 2224 and 2360 Scaler/Ratemeters with 575 cm<sup>2</sup> gas flow proportional (GFP) probes were used for alpha and beta surface area scanning. The probe was kept within one centimeter (cm) of the surface being scanned. The scan rate was less than one probe width per second (five cm). Audio speakers were used for all scanning.

(4) To facilitate the timely completion of the survey fixed alpha and beta readings were taken with three instrument types. The Ludlum Model 2360 with 575 cm<sup>2</sup> GFP probe was used to measure both alpha and beta, the AN/PDR-77 with 100 cm<sup>2</sup> Scintillation probe was used for Alpha and the Ludlum model 2224 with 15.5 cm<sup>2</sup> G-M probe was used for beta.

(5) A gross alpha and beta wipe was taken at each sample point. One hundred cm<sup>2</sup> of the sample point surface was wiped using a cloth wipe (commercial name NUCON). After collection the wipe was placed in its individual labeled paper folder (supplied with the wipe) and taken to the CECOM DRSM counting laboratory.

c. Laboratory counting. The gross alpha and beta wipes were counted in a low background gas flow proportional counting system. The source used to determine the alpha detection efficiency of the system was Americium-241 ( $^{241}\text{Am}$ ). The source used to determine beta detection efficiency was Strontium-90 ( $^{90}\text{Sr}$ ). All sources used for efficiency determinations are traceable to the National Institute for Standards and Technology.

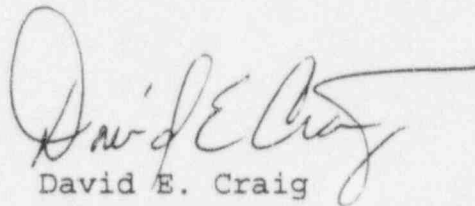
d. Field instrument results. Gamma dose rate measurements and surface area scanning detected no activity greater than flag values in the area surveyed. The fixed alpha, beta and gamma readings at the sample points are included in Appendix C, SURVEY DATA.

e. Laboratory analysis results. The review of counting results indicated no removable contamination from the isotopes of interest in Building 217 and the areas of Building 218 surveyed. The counting results are included in Appendix C, SURVEY DATA.

7. CONCLUSION. The results of this radiological study indicated that there is no radioactive contamination in Building 217 and the surveyed areas of Building 218.

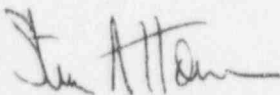


8. RECOMMENDATION. Recommend that Building 217 be released for unrestricted use. Recommend administrative controls in place be maintained on the areas of building 218 that were surveyed to ensure that radioactive material is not introduced into these areas. When all radioactive material is removed from Building 218 the remaining area of the building can then be surveyed and if below release limits the entire building may be released for unrestricted use.



David E. Craig  
Health Physicist, IceSolv, Inc.,  
Contracted to,  
Radiological Engineering Division  
CECOM Directorate of Safety Risk  
Management

Approved:



Steven A. Horne  
Director  
Safety Risk Management

## **APPENDIX A**

### **REFERENCES**

1. NUREG/CR-5849, Manual for Conducting Radiological Surveys in Support of License Termination, Draft Report for Comment, June 1992.
2. US Nuclear Regulatory Commission Regulatory Guide 1.86, Termination of Operating Licenses for Nuclear Reactors, June 1974.
3. Title 10, Code of Federal Regulations (CFR), Part 20, Standards for Protection Against Radiation.

## APPENDIX B

### ABBREVIATIONS

bkg	background
cpm	counts per minute
dpm	disintegration per minute
Eff	efficiency
inst	instrument

## APPENDIX C

### SURVEY DATA

#### Contents

1. Building 217, survey point narrative.
2. Building 217, survey maps.
3. Building 217, survey readings and laboratory data.
4. Building 218, survey point narrative.
5. Building 218, survey maps.
6. Building 218, survey readings and laboratory data.

**FEMA. Winchester, VA.**

**Building 217**

**Survey points**

Room 101

- 1 - 9 on the floor
- 10 and 11 are on the walls

Room 101A

- points 12 and 13 are on the walls
- 13 - 15 are on the floor

Room 101B

- Randoms 17 and 18 are on the floor
- 19 and 20 are on the walls

Room 102

- points 21 and 22 are on the floor
- 23 is on the closet shelf
- 24 - 32 are on the floor
- 33 and 34 are on the window seal
- 35 is on the work bench

Room 103

- Randoms 36 - 45 are on the floor
- 46 and 47 are on the window seal
- 48 is on the desk
- 49 and 50 are on the walls

Room 118

- Randoms 51 - 54 are on the floor
- 55 is on the window seal
- 56 is on the floor
- 57 is on the door
- 58 is on the light switch
- 59 is on the shelf over the sink

Room 104

- Randoms 60 - 69 are on the floor
- 70 - 71 are on the work benches
- 72 is on the window seal
- 73 is on the wall

Room 105

- Randoms 74 - 86 are on the floor
- 87 on the wall
- 88 is on the window seal

- 89 is under the electrical penetration
- 90 and 91 are on the window seal
- 92 is on the wall
- 93 and 94 are on the work bench
- 95 is on the storage bin

#### Room 106

- Randoms 96 - 108 are on the floor
- 109 is on the shower drain
- 110 and 112 are on the wall
- 111, 113 and 114 are on the work bench
- 115 is on the storage rack shelf
- 116 is on the wall with the air nozzle
- 117 is on top of the dish washer
- 118 is on the right side of the sink
- 119 is on shelf above sink
- 120 is to the left of the sink
- 121 is on the shelf under sink
- 122 is on the floor

#### Room 107

- Randoms 123 - 137 are on the floor
- 138 and 139 on boards used as shelves in old x-ray room
- 140 is on the floor
- 141 - 144 on x-ray machine measurement track
- 145 - 149 is on the floor
- 150 is on the ventilation duct
- 151 and 152 is on the table
- 153 is on the x-ray machine cart frame
- 154 is on x-ray machine elec. equipment desk top
- 155 is on work table
- 156 is on x-ray machine cart frame
- 157 is on x-ray cart Plexiglas
- 158 is on the desk top
- 159 is on the pallet
- 160 is on the wooden book shelf
- 161 is on heat/AC vent
- 162 is under thermostat controls

#### Main Hall

- 163 - 165 are on the floor
- 166 is on the wall
- 167 is on the floor
- 168 is on the dosimeter shelf
- 169 is on the bulletin board
- 170 - 172 is on the floor
- 173 is on the wall under the dosimeter shelf
- 174 is on the wall over the dosimeter shelf
- 175 - 177 is on the floor
- 178 is on the wall
- 179 is on the wall under the area RAD monitor
- 180 and 181 is on the floor



- 182 is on the electrical panel
- 183 - 186 is on the floor
- 187 is on the water fountain
- 188 on the floor
- 189 is on the wall under the light switch
- 190 - 192 is on the floor
- 193 is on the wall
- 194 is on the floor
- 195 is on the wall
- 196 is on the wall under the area RAD monitor
- 197 - 199 is on the floor
- 200 is on the wall
- 201 - 204 is on the floor
- 205 is on the wall above the elec. outlet
- 206 is on the wall next to the light switch
- 207 is on the floor

#### Hall # 2 with stairs

- 208 and 209 are on the floor
- 210 is on the exit door
- 211 is on the heat/AC vent
- 212 is under the light switch
- 213 is on the floor
- 214 is on the stairs
- 215 and 216 are on the landing
- 217 is on the wall over the landing
- 218 is on the steps
- 219 is on the landing at the top of the steps
- 220 is in the door way going into the upstairs hall way
- 221 is on the door

#### Room 204A

- 222 is on the floor in front of the sink
- 223 is on the wall in the back of the closet
- 224 is on the wall above the sink

#### Room 204

- Randoms 225 - 235 are on the floor
- 236 and 237 are on the work bench
- 238 is on the wall with the air nozzle
- 239 is on the work bench
- 240 is on the desk shelf

#### Room 214

- 241 - 245 are on the floor
- 246 is on the door leading to the toilet
- 247 is under the light switch in bath room

#### Room 203

- 248 - 259 are on the floor
- 260 and 261 are on the desk in the north end of the room
- 262 is on the vent under the window in the south end of the room
- 263 is on the work bench in the south end of the room
- 264 is on top of the file cabinet
- 265 is on south wall
- 266 is on top of the file cabinet on north wall

Room 202

- 267 - 279 are on the floor
- 280 is on the north wall by the door
- 281 is on the wooden shelves
- 282 is on the hand cart
- 283 is on top of the large cabinet in the south end of the room
- 284 is on the file cabinet at the north end of the room

Room 201

- 285 - 297 are on the floor
- 298 is on the wall next to the air nozzle
- 299 is on the desk top
- 300 is on the wall

Room 201A

- 301 - 303 are on the floor
- 304 is on the door
- 305 is on the wall under the light switch

Telephone closet

- 306 is on the floor

Main hall way upstairs

- 307 - 309 are on the floor
- 310 is on the west wall
- 311 is on the east wall
- 312 under dosimeter rack
- 313 - 316 are on the floor
- 317 is under TDL badge rack
- 318 and 319 are on the floor
- 320 is on the east wall
- 321 - 324 are on the floor
- 325 is under RAD monitor
- 326 is on the floor
- 327 is on the electrical panel
- 328 and 329 is on the floor
- 330 is on the west wall
- 331 is on the floor
- 332 is on the water fountain
- 333 - 338 are on the floor
- 339 is on the west wall
- 340 - 348 are on the floor
- 349 is on the heat/ AC vent
- 350 is on the wall

Room 205

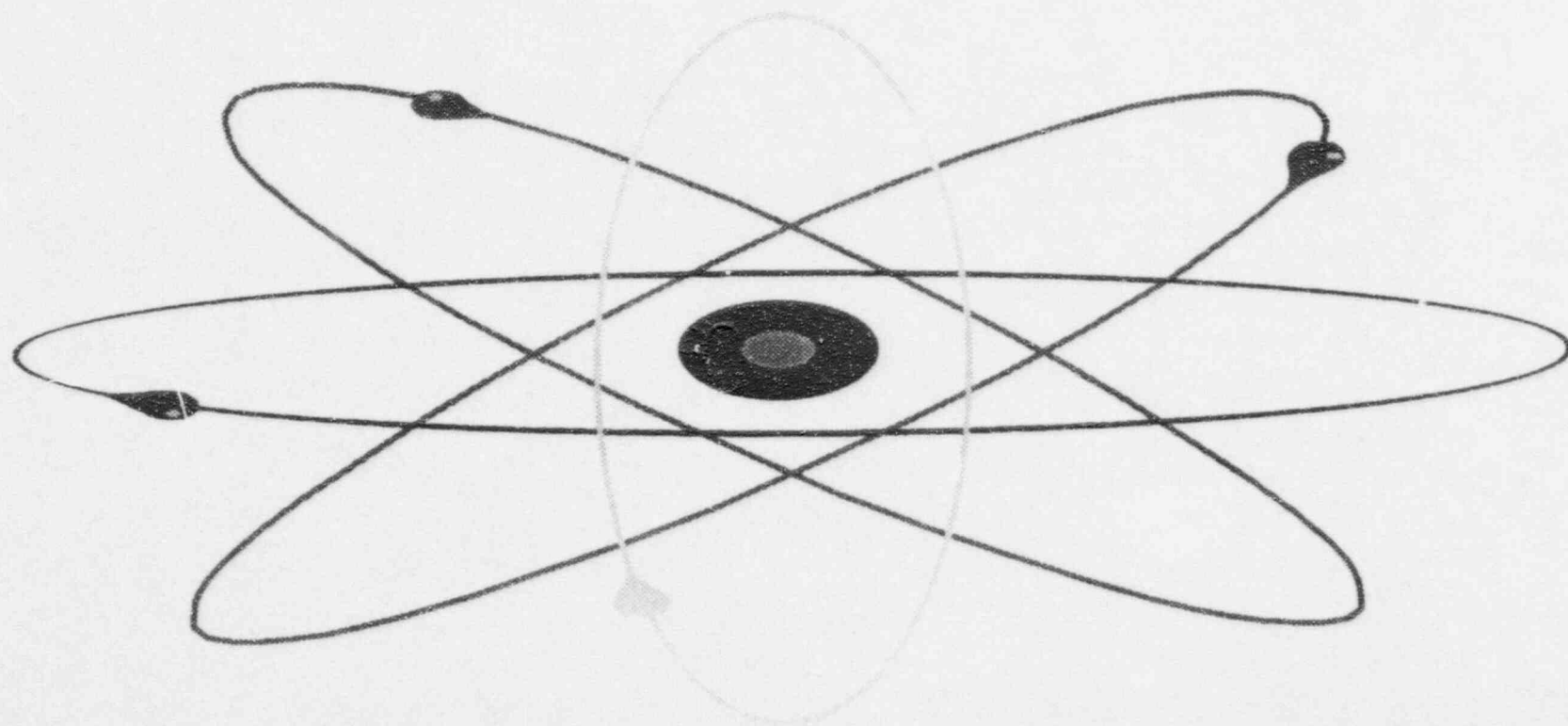
- 351 - 366 are on the floor
- 367 is on the work bench at the north end of the room
- 368 is inside the chem. lab vent hood
- 369 is under the water nozzle on the west wall
- 370 is in the sink in the south end of the room
- 371 is on the storage locker on the bottom shelf
- 372 is under the water nozzle on the east side of the room
- 373 is under the thermostat controls

Room 224

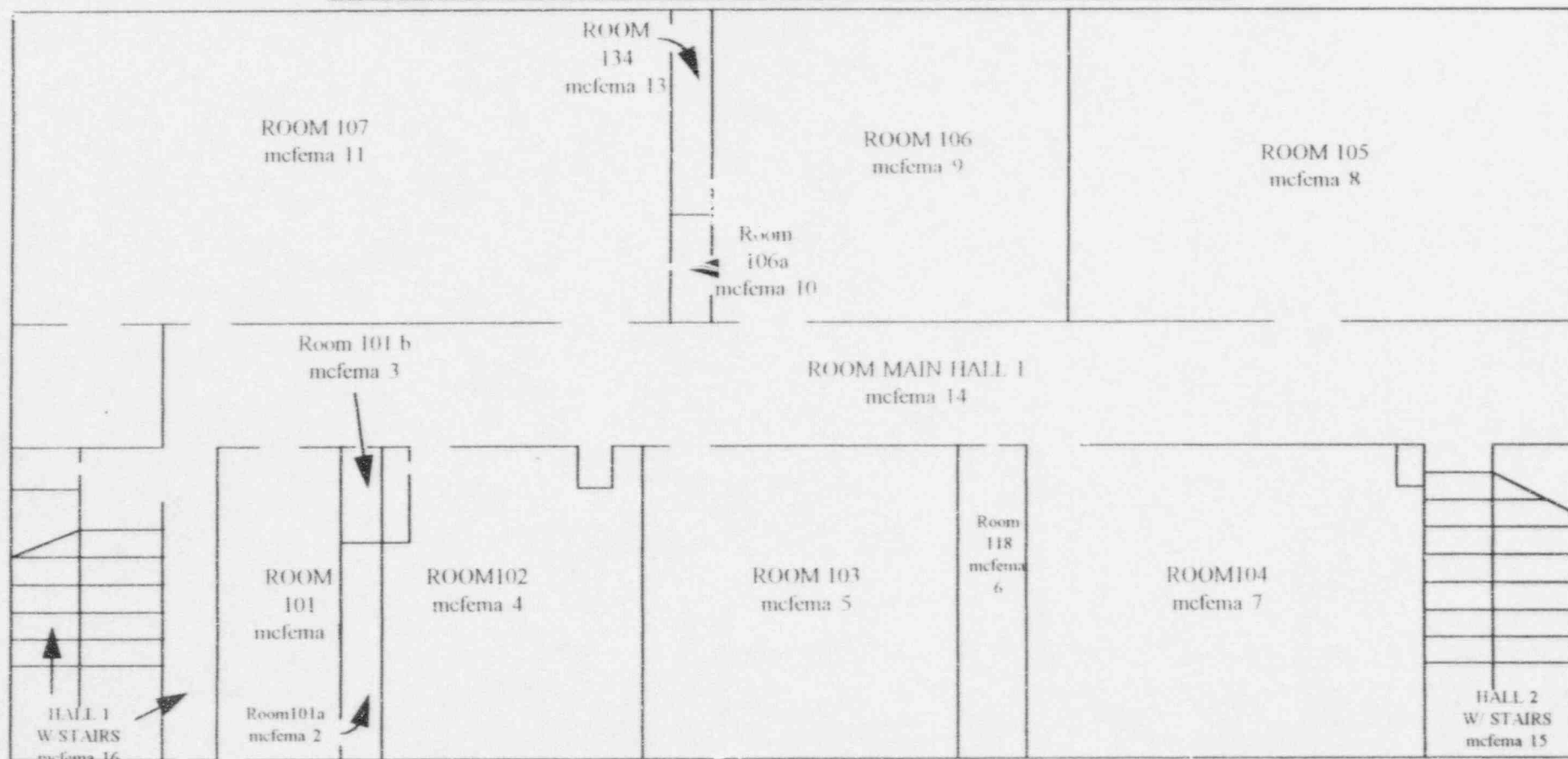
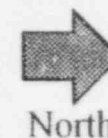
- 374 - 377 are on the floor
- 378 are on the door leading to the bathroom

- 379 is under the light switch in the sink room
- Room 206
- 380 - 395 are on the floor
  - 396 is under the thermostat
  - 397 is on the large drawer cabinet
  - 398 is on top of the file cabinet
  - 399 is on the work bench
  - 400 is on the wall above the vent
  - 401 is on the storage locker in the north end of the room
- Room 207
- 402 - 430 are on the floor
  - 431 is on the table in the north end of the room
  - 432 is on the doors opening to room 218
  - 433 is on the instrument storage cabinet
  - 434 is on the wall near the air nozzle
  - 435 and 436 are on the cabinet on the east wall
  - 437 is on the desk top
  - 438 is on the computer desk
  - 439 is on the instrument storage locker
  - 440 is on the south wall under the air nozzle
  - 441 is on the desk
  - 442 is on the floor
  - 443 is on the desk
- Hall with stairs
- 444 is on top of the stairs
  - 445 is on the door
  - 446 is on the steps
  - 447 and 448 are on the landing floor
  - 449 is on the landing wall
  - 450 is on the bottom of the stairway wall
  - 451 is on the bottom of the stairs
  - 452 is on the wall at the bottom of the stairs
  - 453 and 454 are on the floor
  - 455 - 458 are on the floor
  - 459 is on the entrance to the building
  - 460 is above the vent in the hall
  - 461 and 462 are in the closet at the foot of the steps
- Room 234
- 463 - 466 are on the floor
  - 467 is under the light switch
  - 468 is on the inside of the bath room door
- Room 207A
- 469 - 471 are on the floor
  - 472 is on the shower drain
  - 473 is under the light switch
  - 474 is on the inside of the door
  - 475 is on the outside of the door
- Room 207
- 476 and 477 are on the doors leading to building 218

# FEMA RADCON SURVEY DATA BUILDING 217



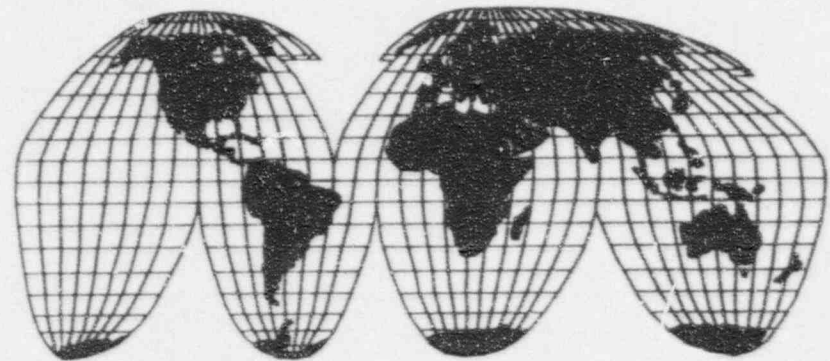
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Microsoft Powerpoint

# FEMA-WINCHESTER, VA. BLDG.217

- SURVEY MAPS
- NUMBERS (# 's) INDICATE  
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- SEE SURVEY DATA POINT  
LOCATIONS FOR  
IDENTIFICATION

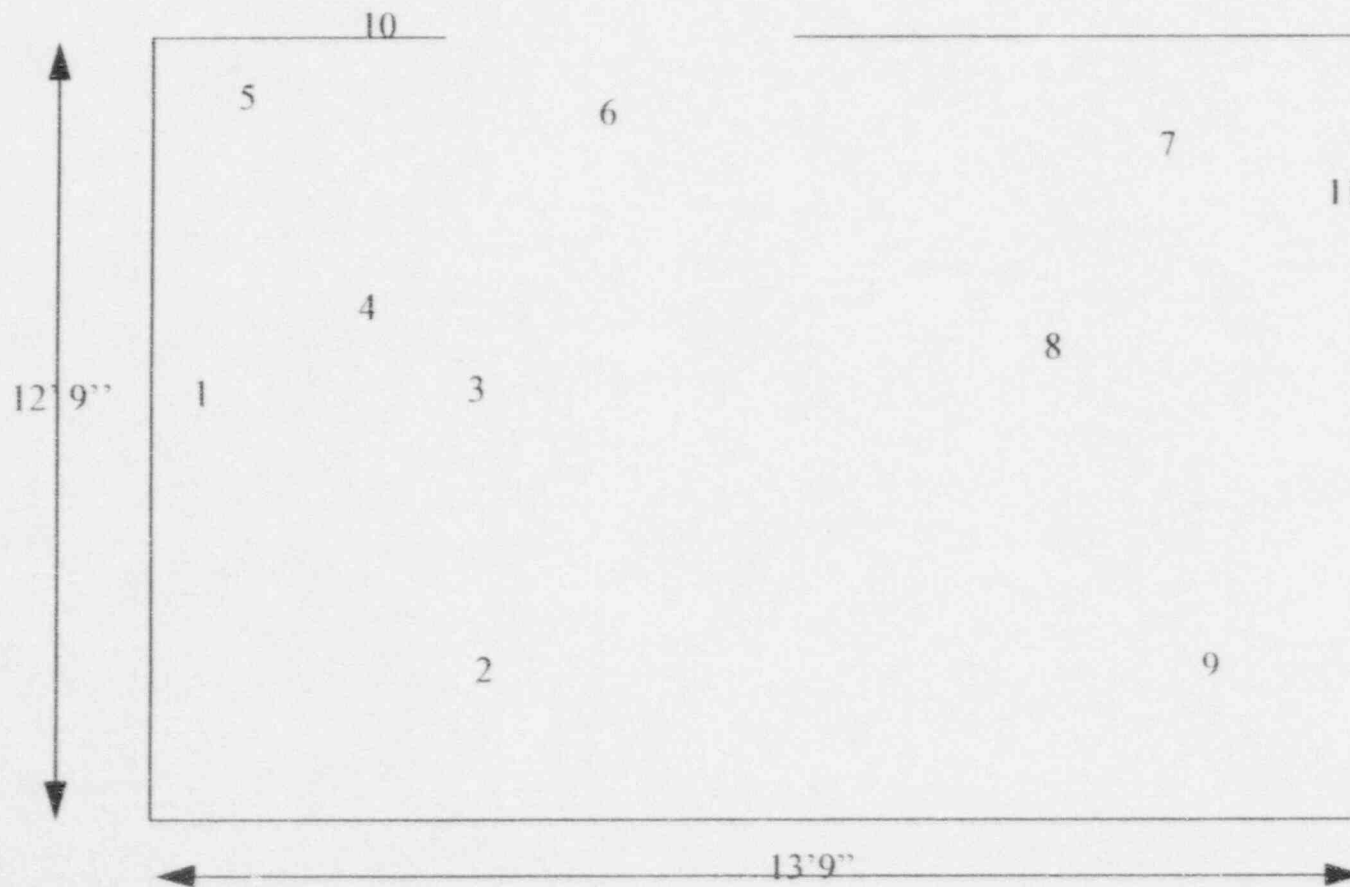




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ROOM-101  
JAN. 24, 1997



NORTH

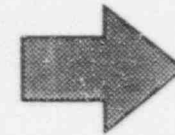


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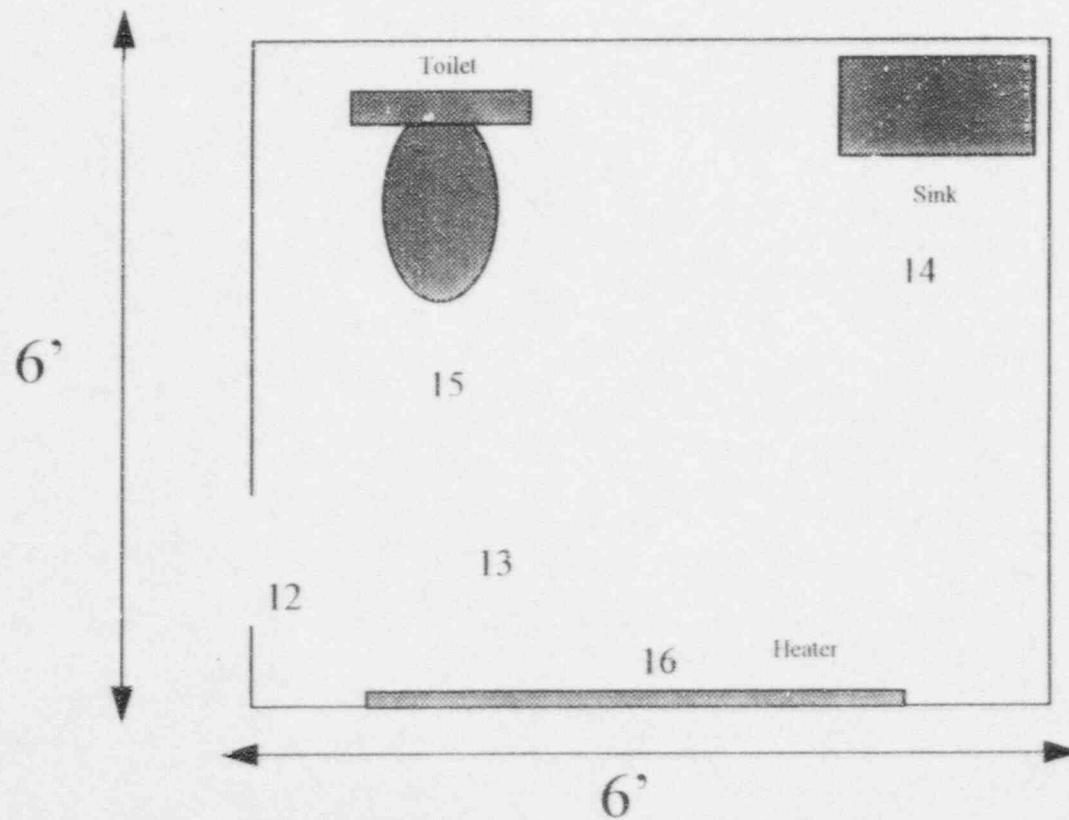
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JAN. 24, 1997



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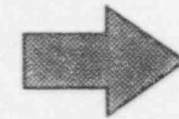


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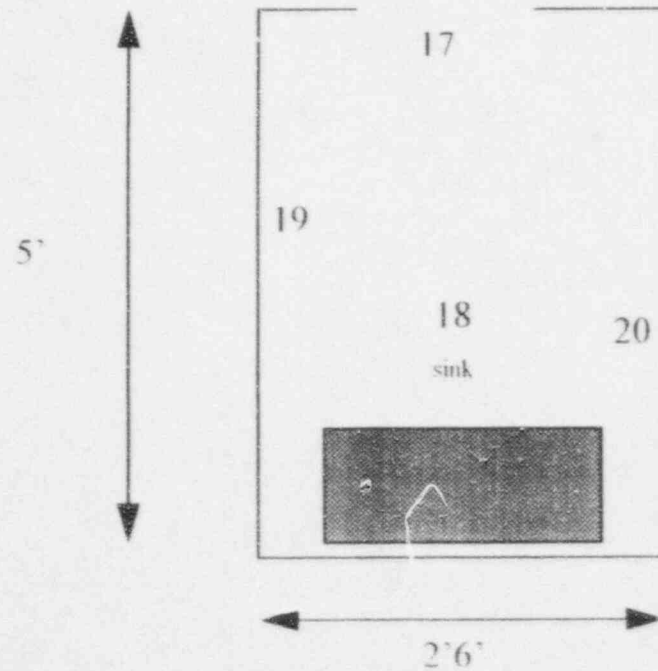
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North

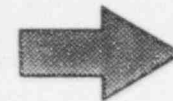


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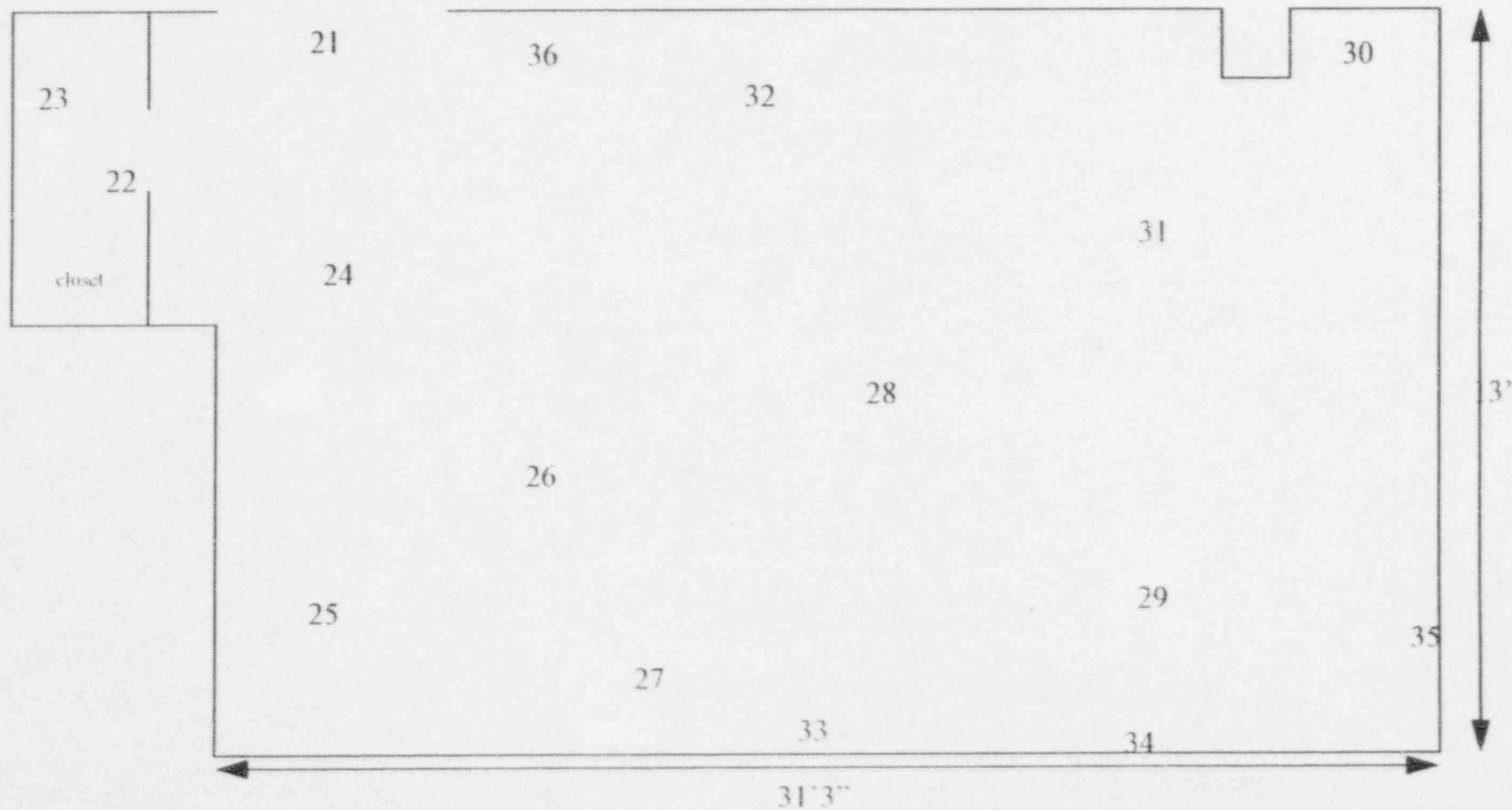
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North

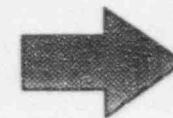


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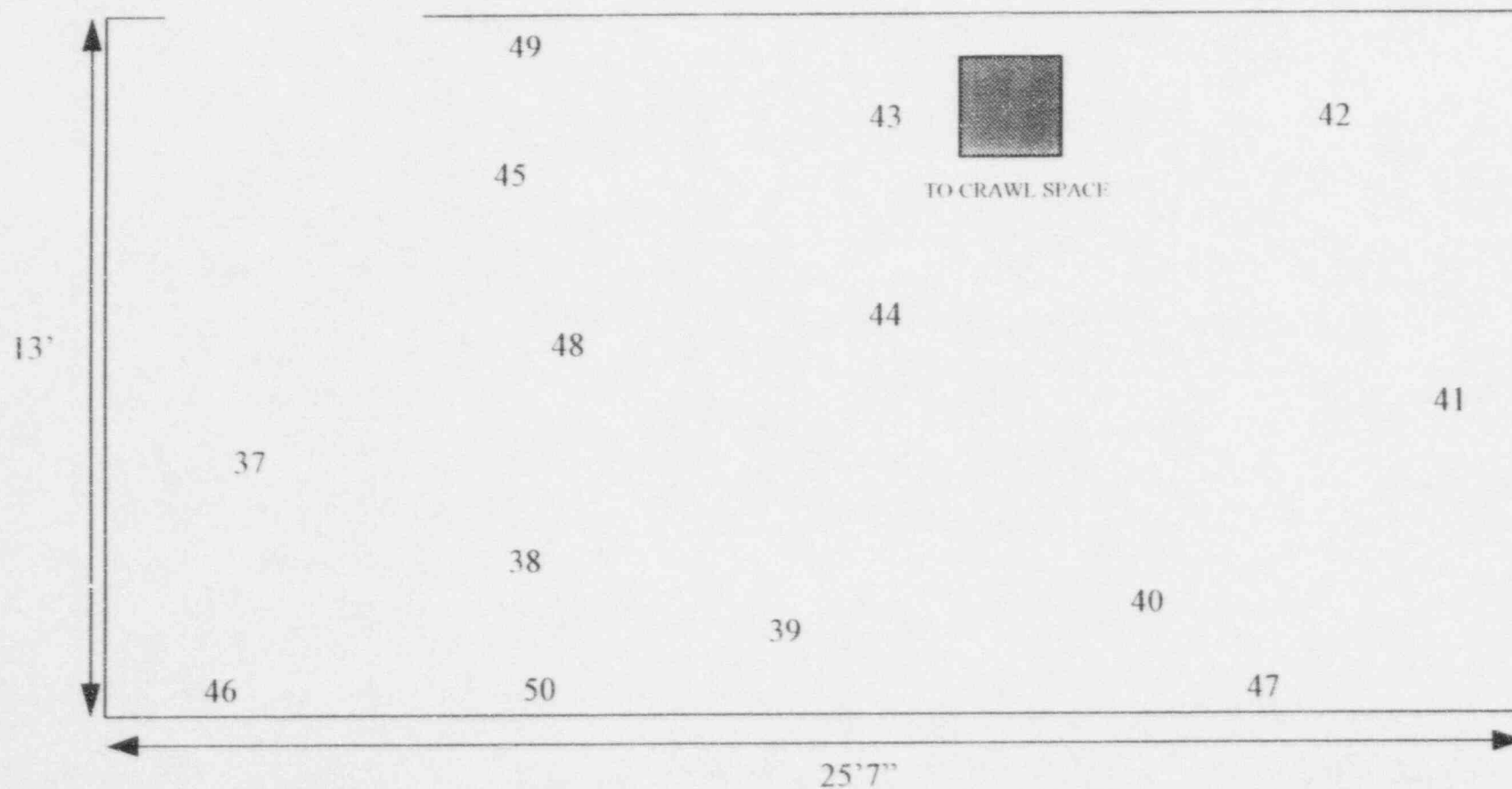
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ROOM-103

JAN. 24, 1997



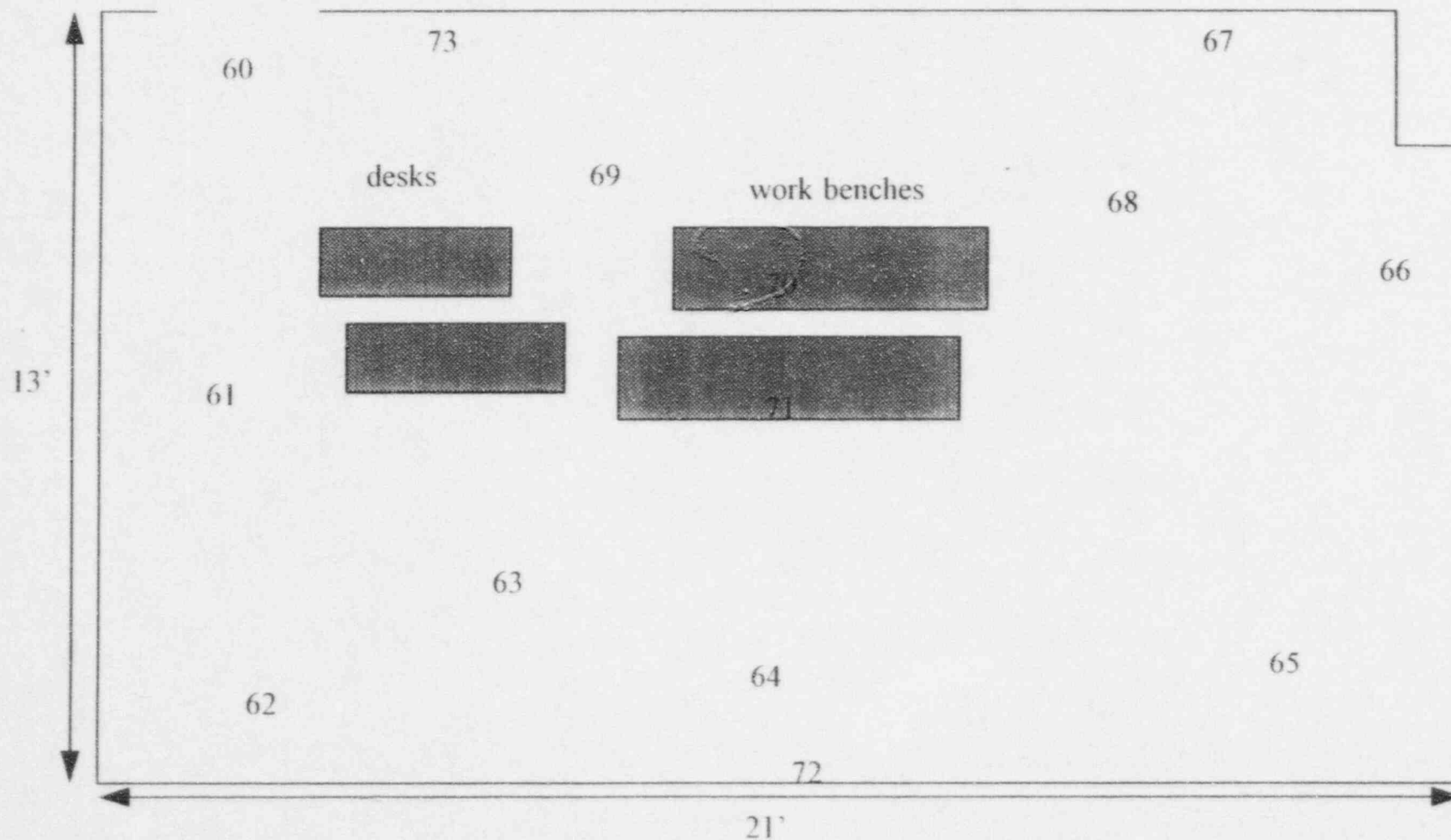
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ROOM- 104  
JAN. 24, 1997

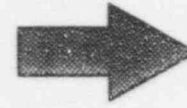


North

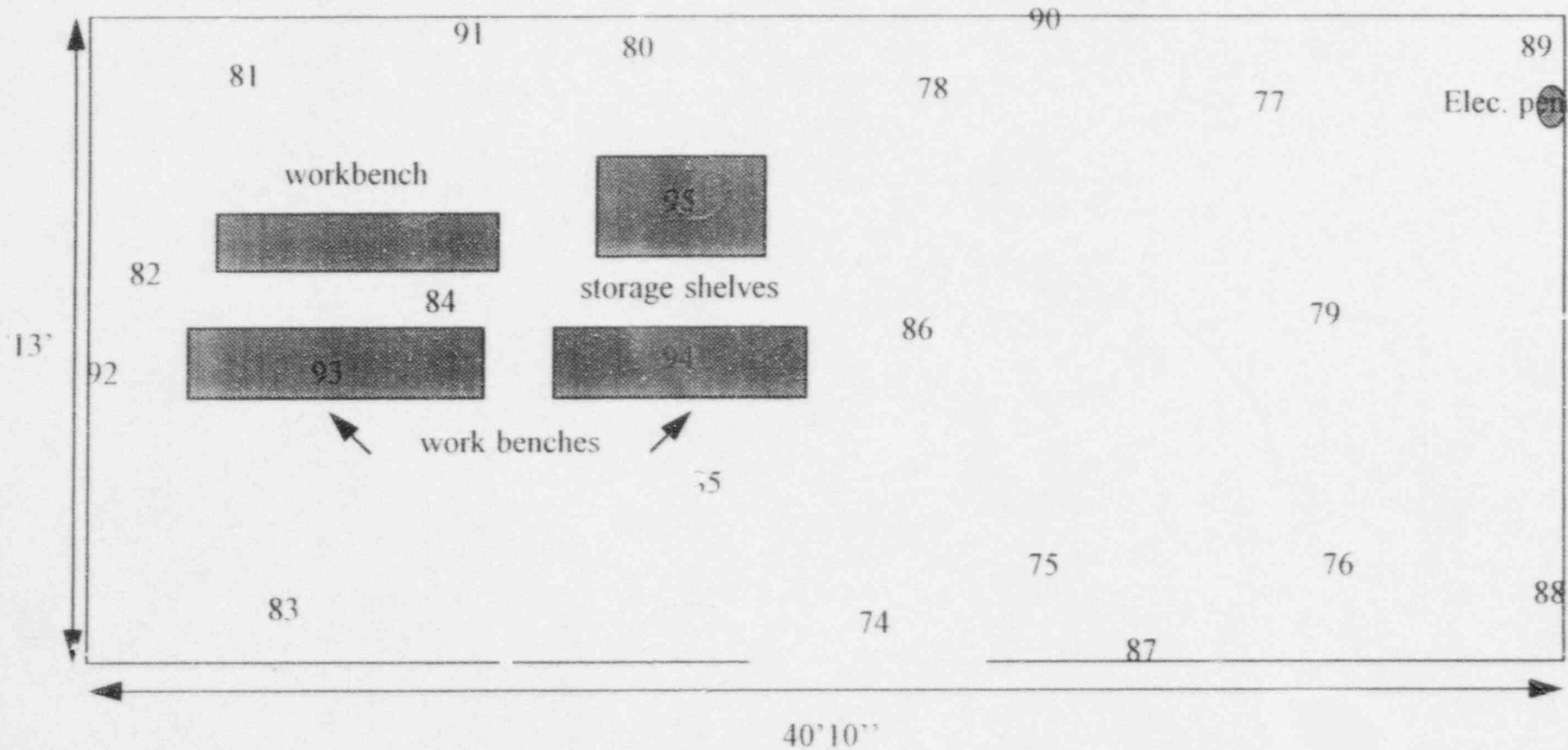




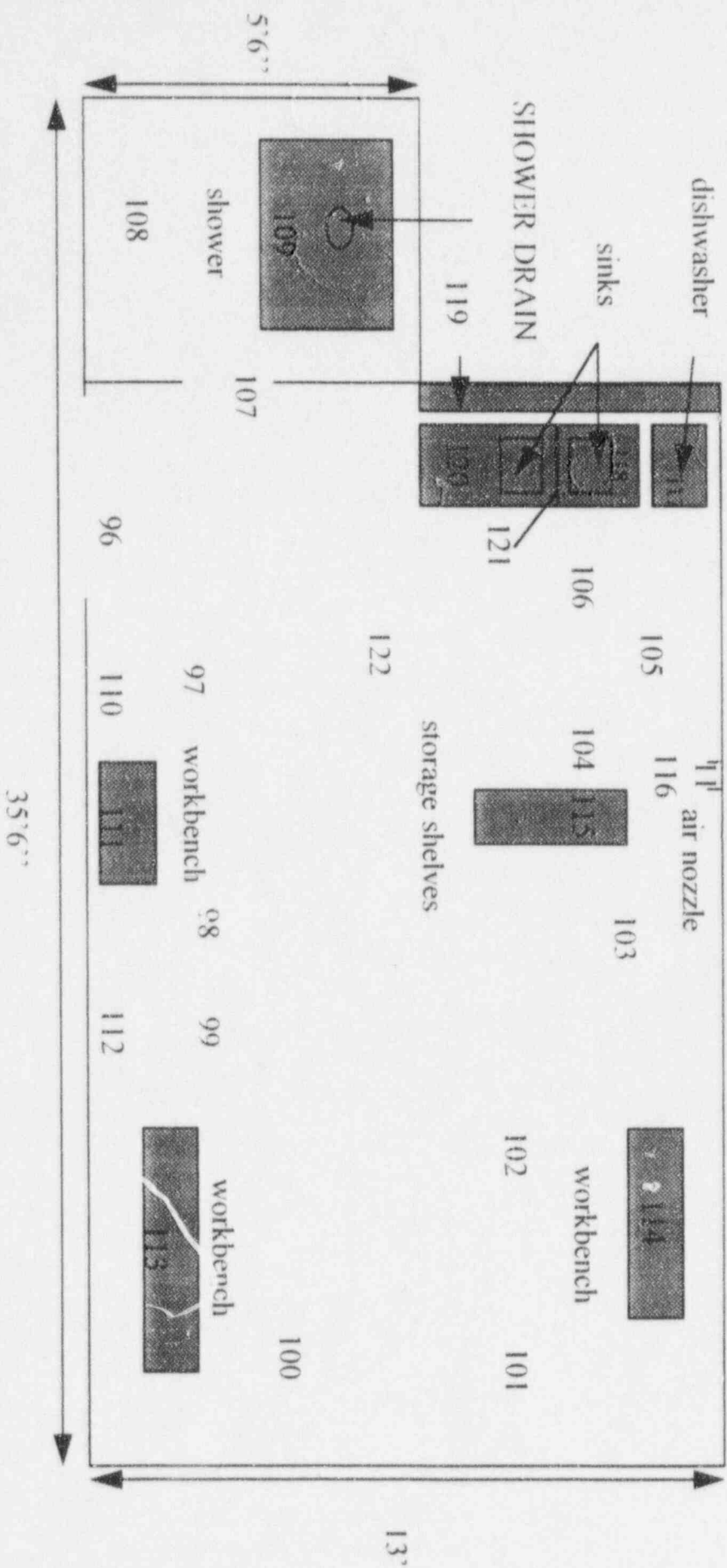
FEMA-WINCHESTER, VA  
BLDG. 217  
ROOM-105  
JAN. 24, 1997



North



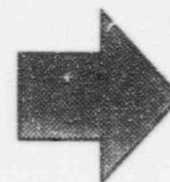
## JAN. 24, 1997



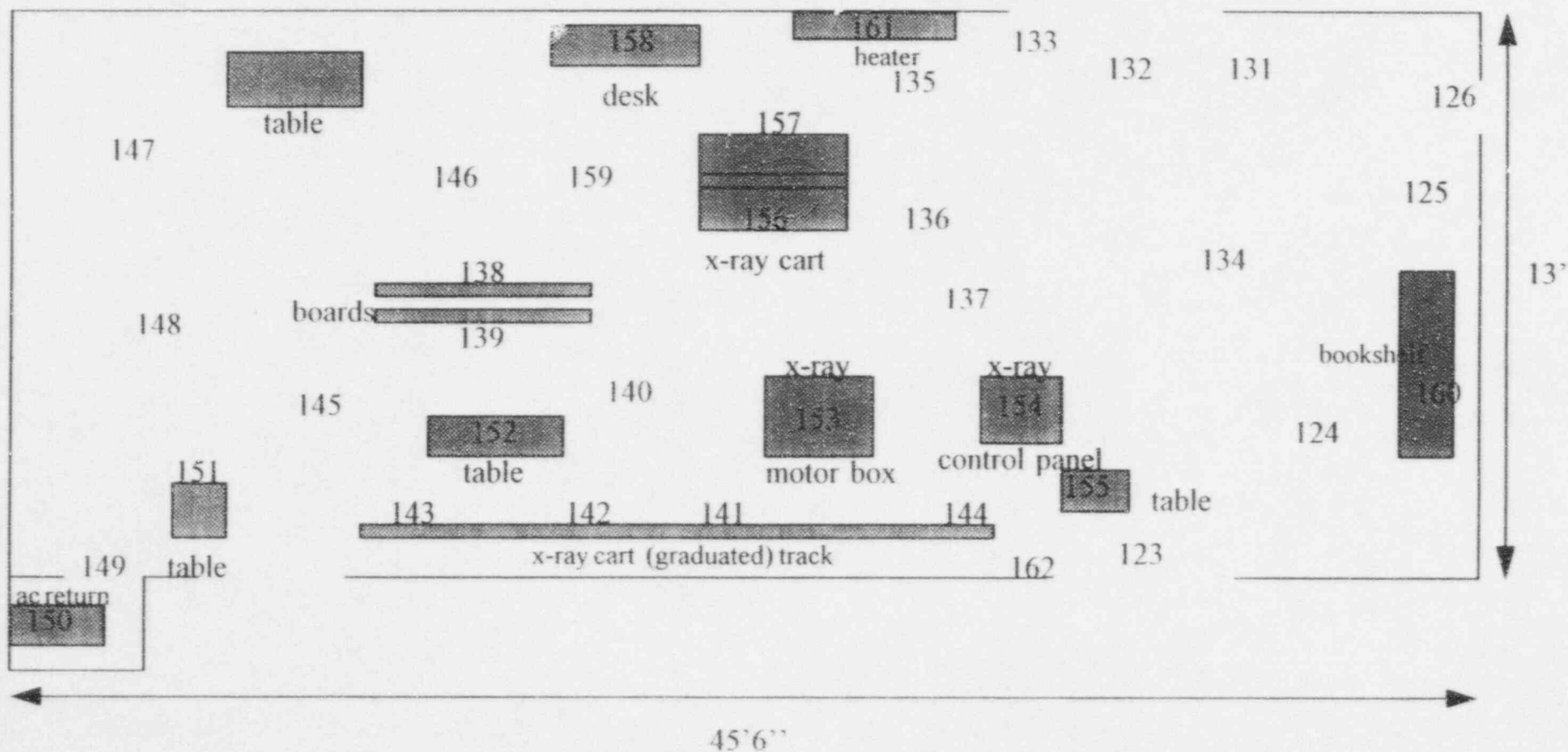
FEMA - WINCHESTER, VA.

BLDG. 217 ROOM-107

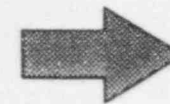
JAN. 24, 1997



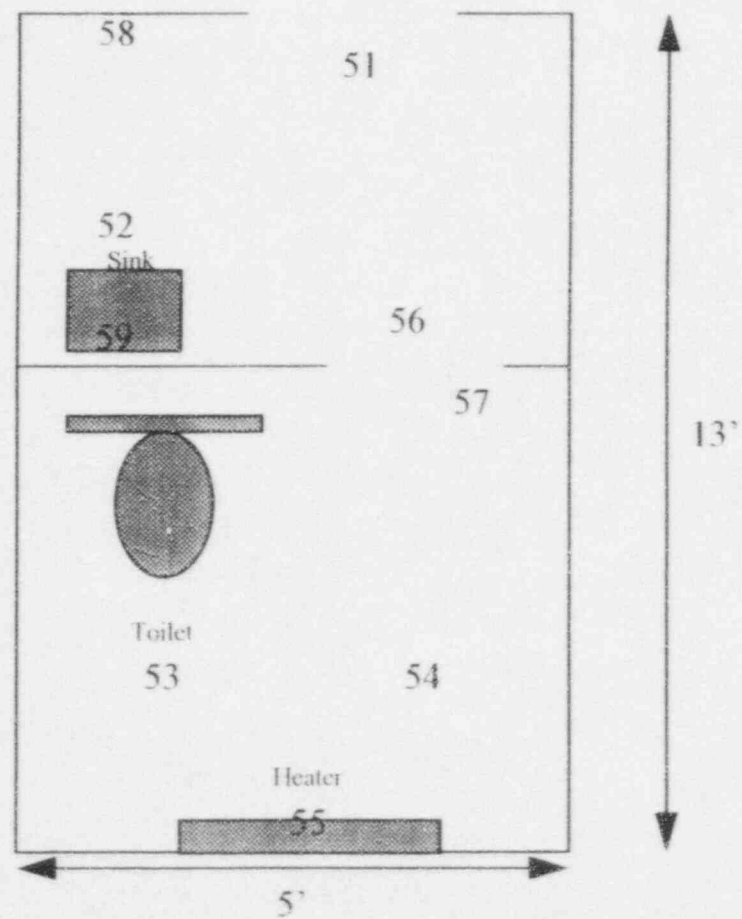
North



FEMA-WINCHESTER, VA.  
BLDG. 217  
ROOM-118  
JAN. 24, 1997



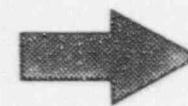
North



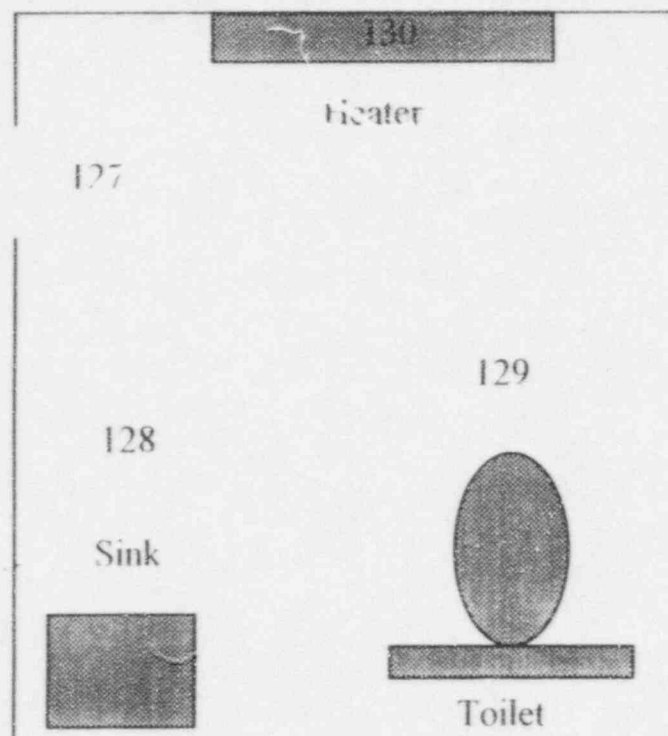
FEMA - WINCHESTER, VA.

BLDG. 217 ROOM-134

JAN. 24, 1997



North



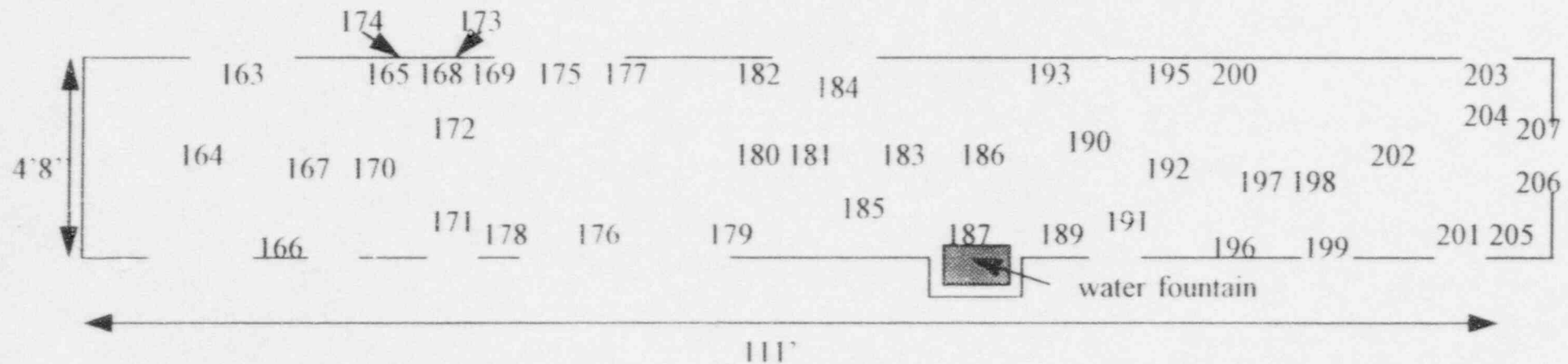
6'

5'6"

FEMA - WINCHESTER, VA.  
BLDG. 217 ROOM- MAIN HALL  
JAN. 24, 1997



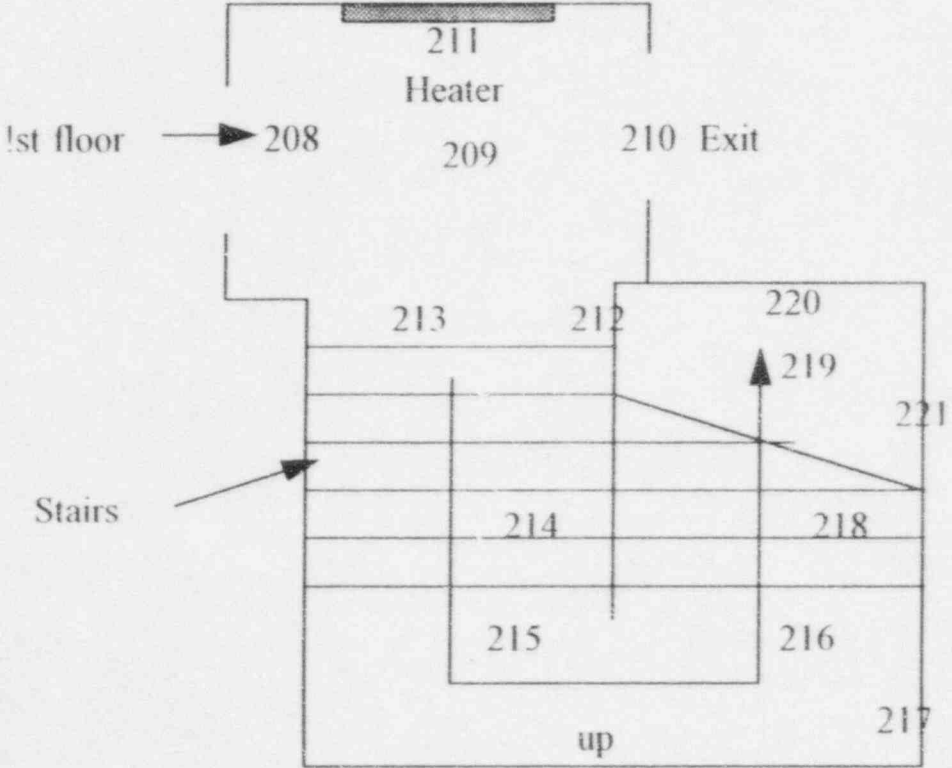
North



FEMA - WINCHESTER, VA.  
BLDG. 217 ROOM-HALL-2 W/STAIRS  
JAN. 24, 1997

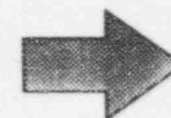


North

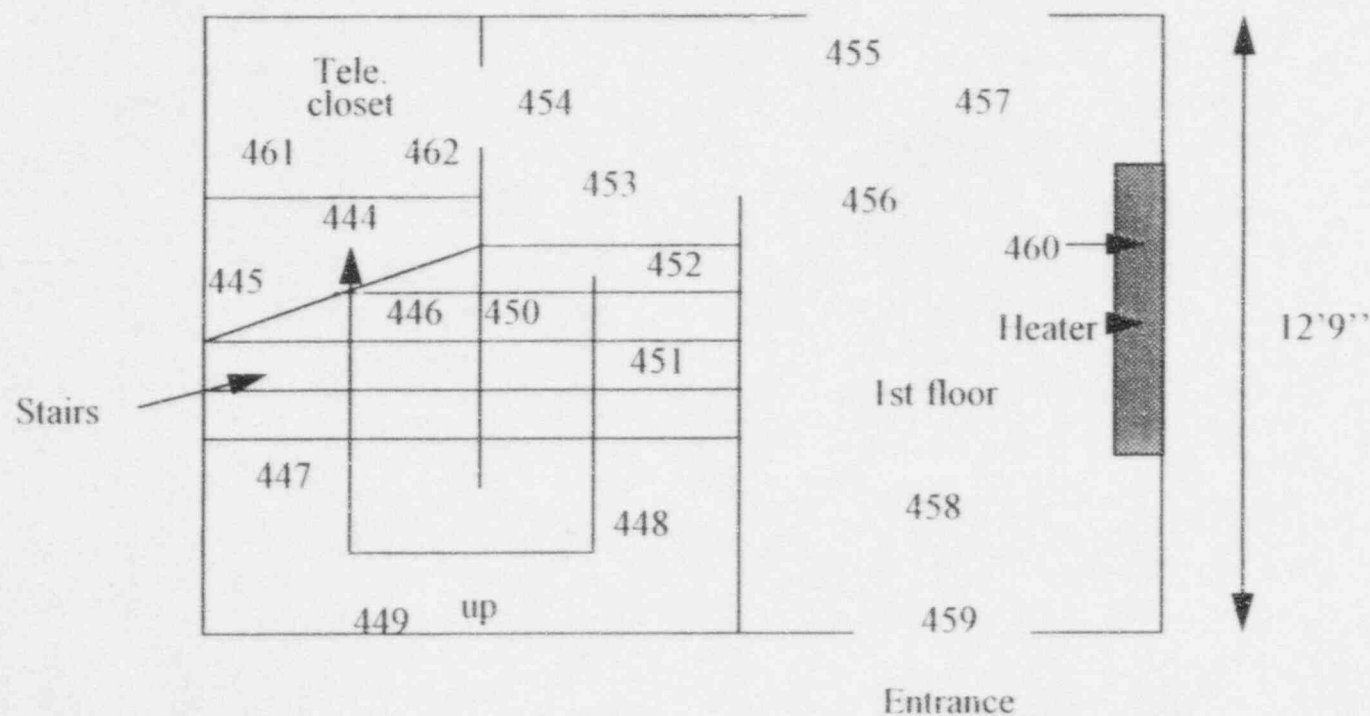




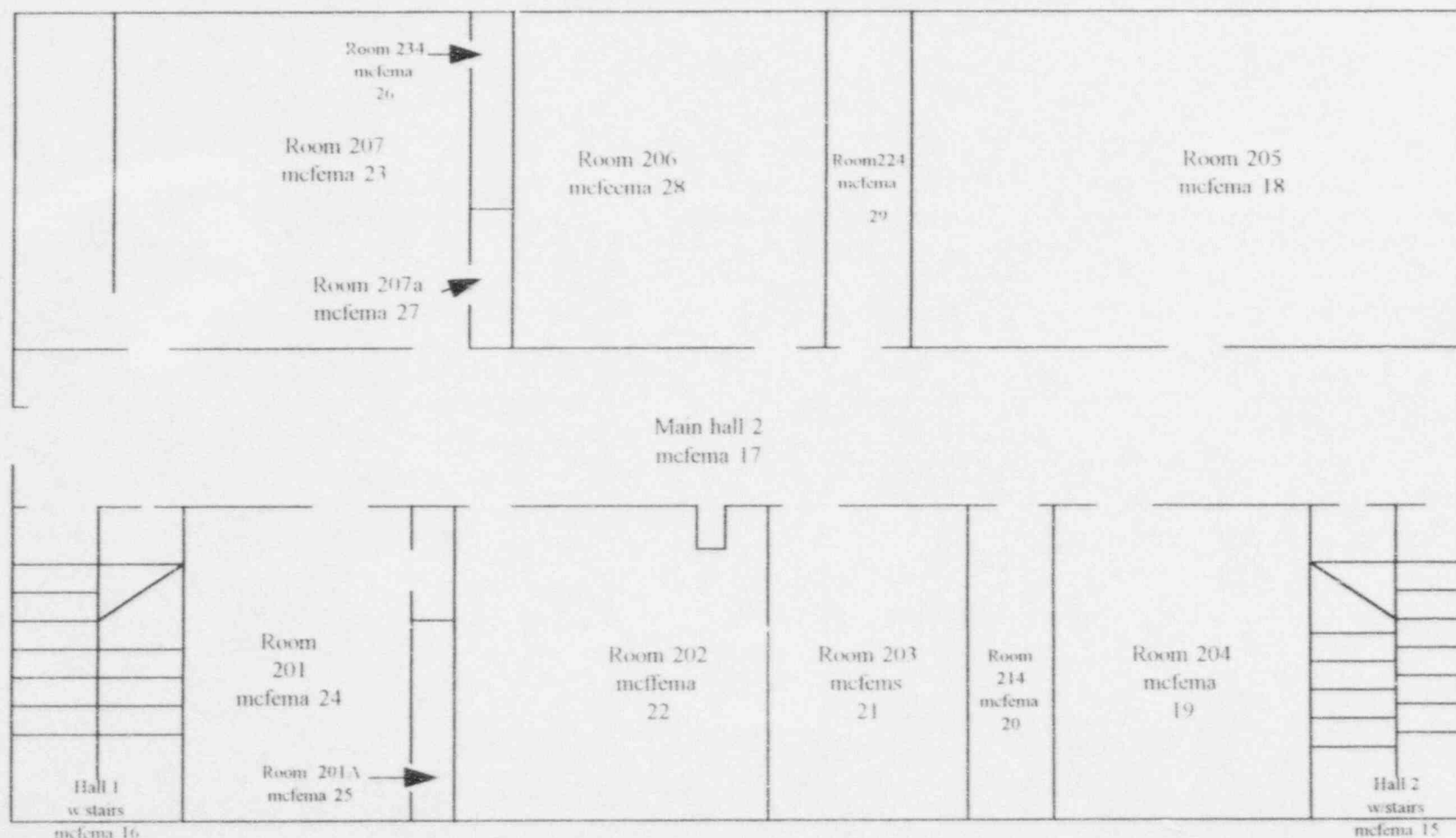
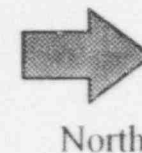
FEMA - WINCHESTER, VA.  
BLDG. 217 ROOM-HALL-1 W/STAIRS  
JAN. 24, 1997



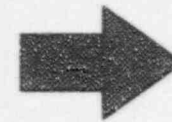
North



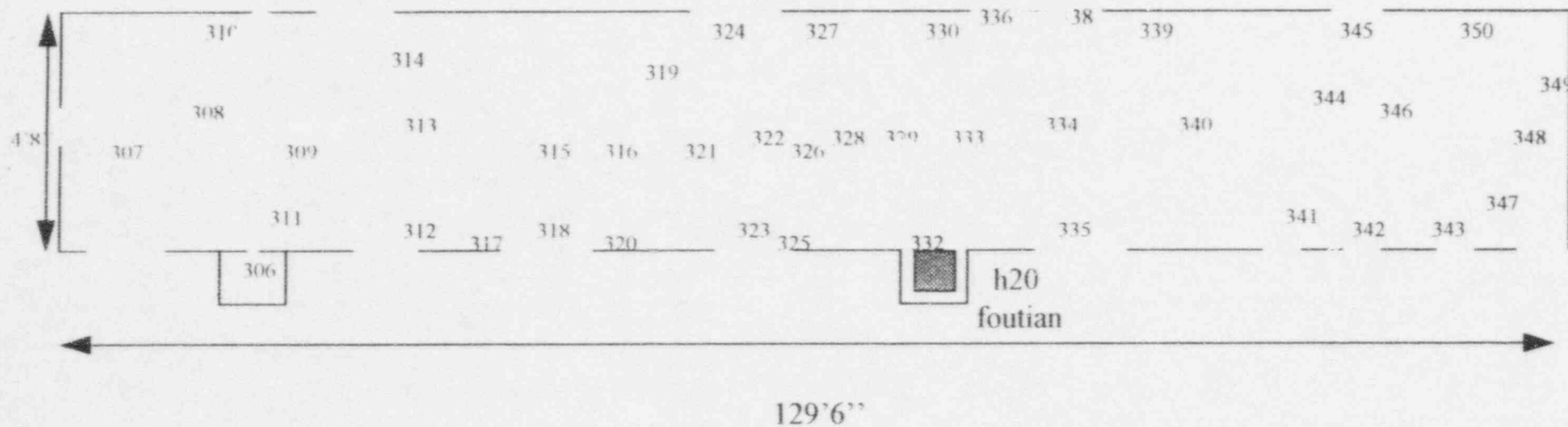
FEMA - WINCHESTER, VA.  
 BLDG. 217 2ND FLOOR  
 MAP FILE NAMES (H:\RER\MAPS)



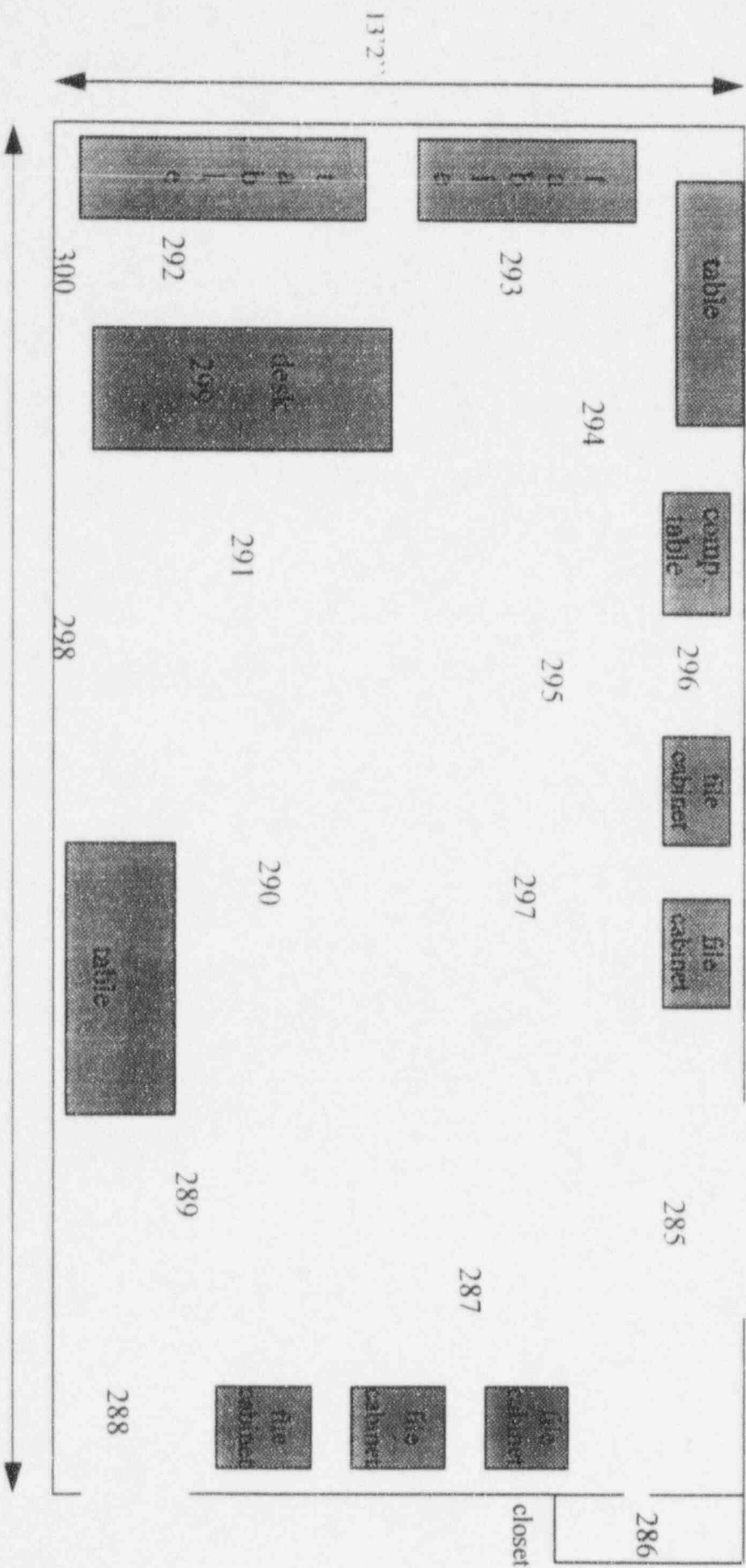
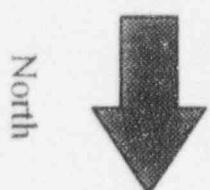
FEMA - WINCHESTER, VA.  
BLDG. 217 ROOM-HALL-2  
JAN. 24, 1997



North



FEMA-WINCHESTER, VA.  
BLDG. 217  
ROOM-201  
JAN. 24, 1997

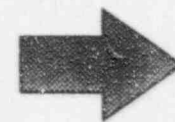


FEMA-WINCHESTER, VA.

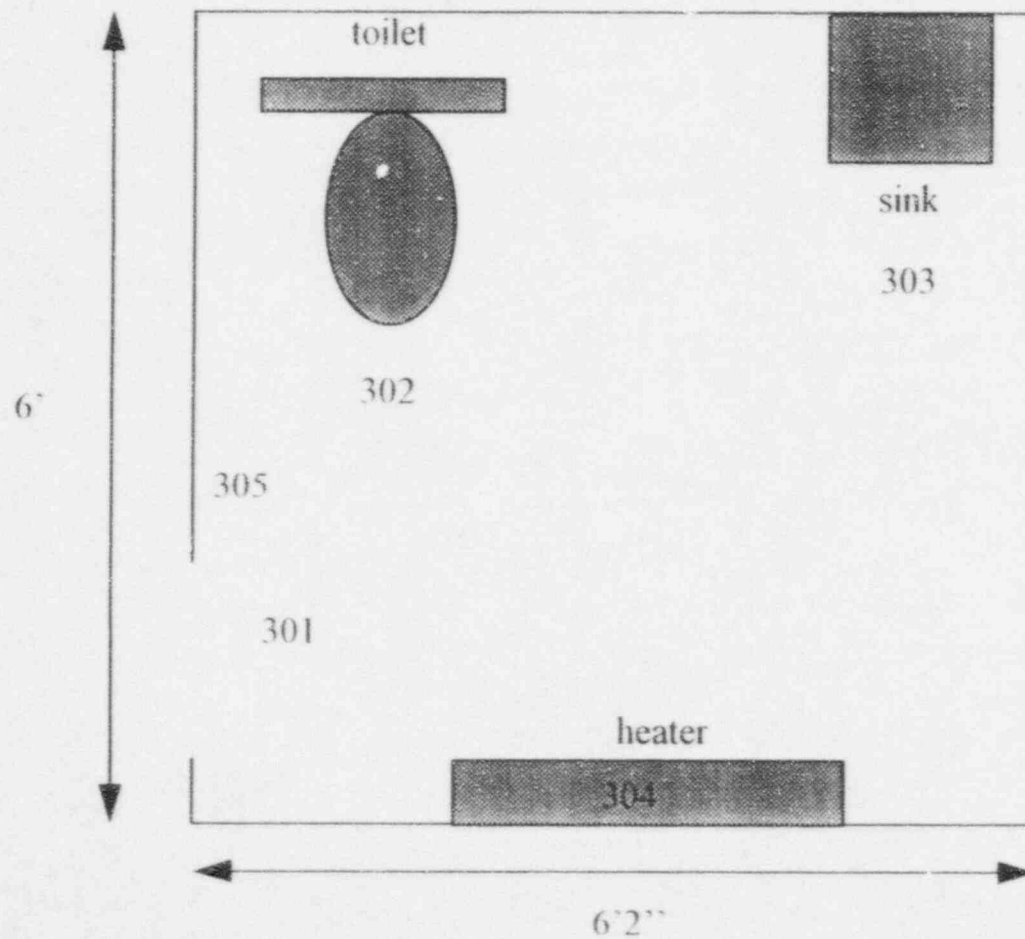
BLDG. 217

ROOM-201A

JAN. 24, 1997



North

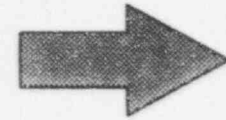


FEMA-WINCHESTER, VA..

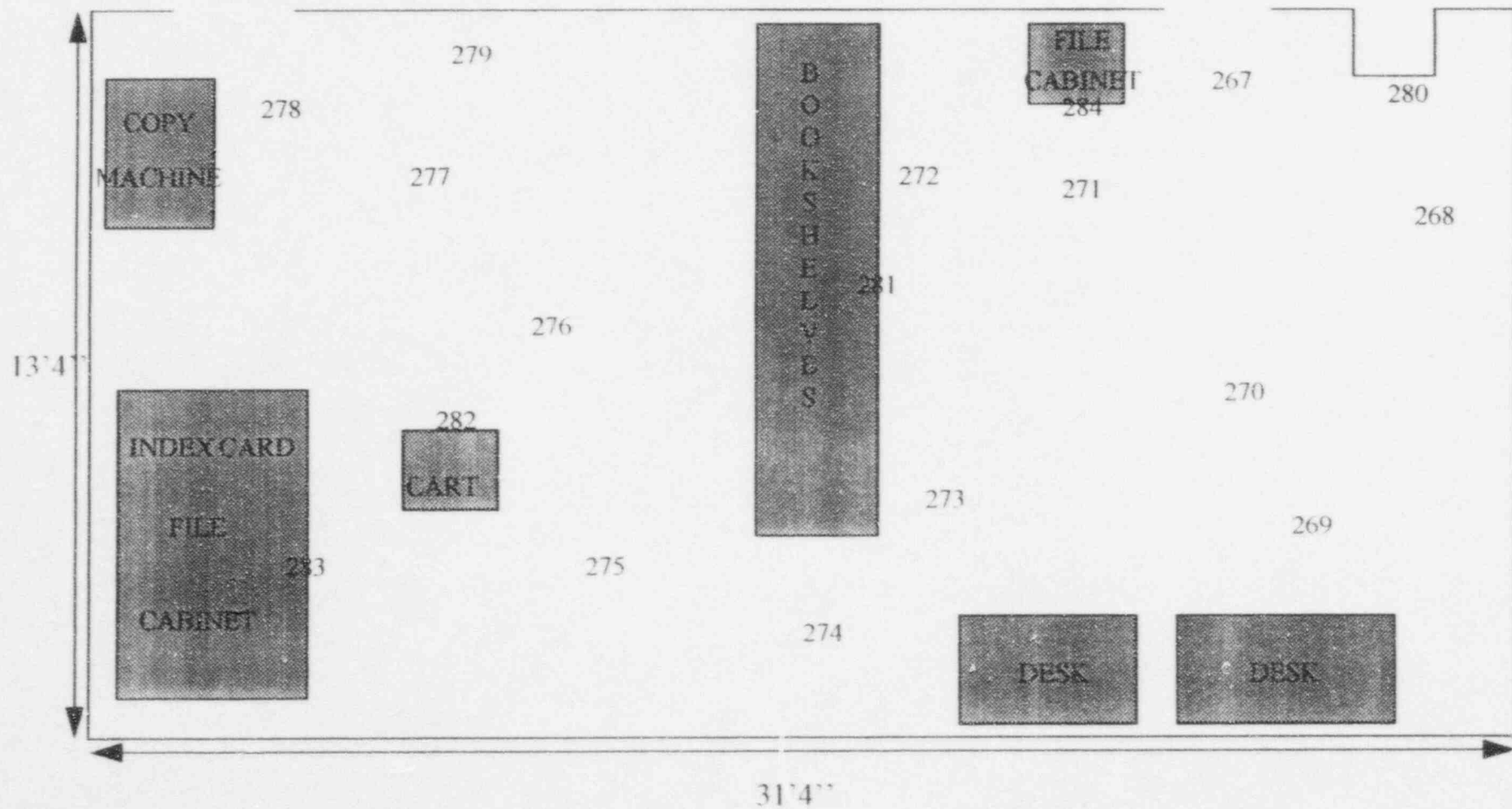
BLDG. 217

ROOM-202

JAN. 24, 1997



North

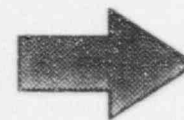


FEMA-WINCHESTER, VA.

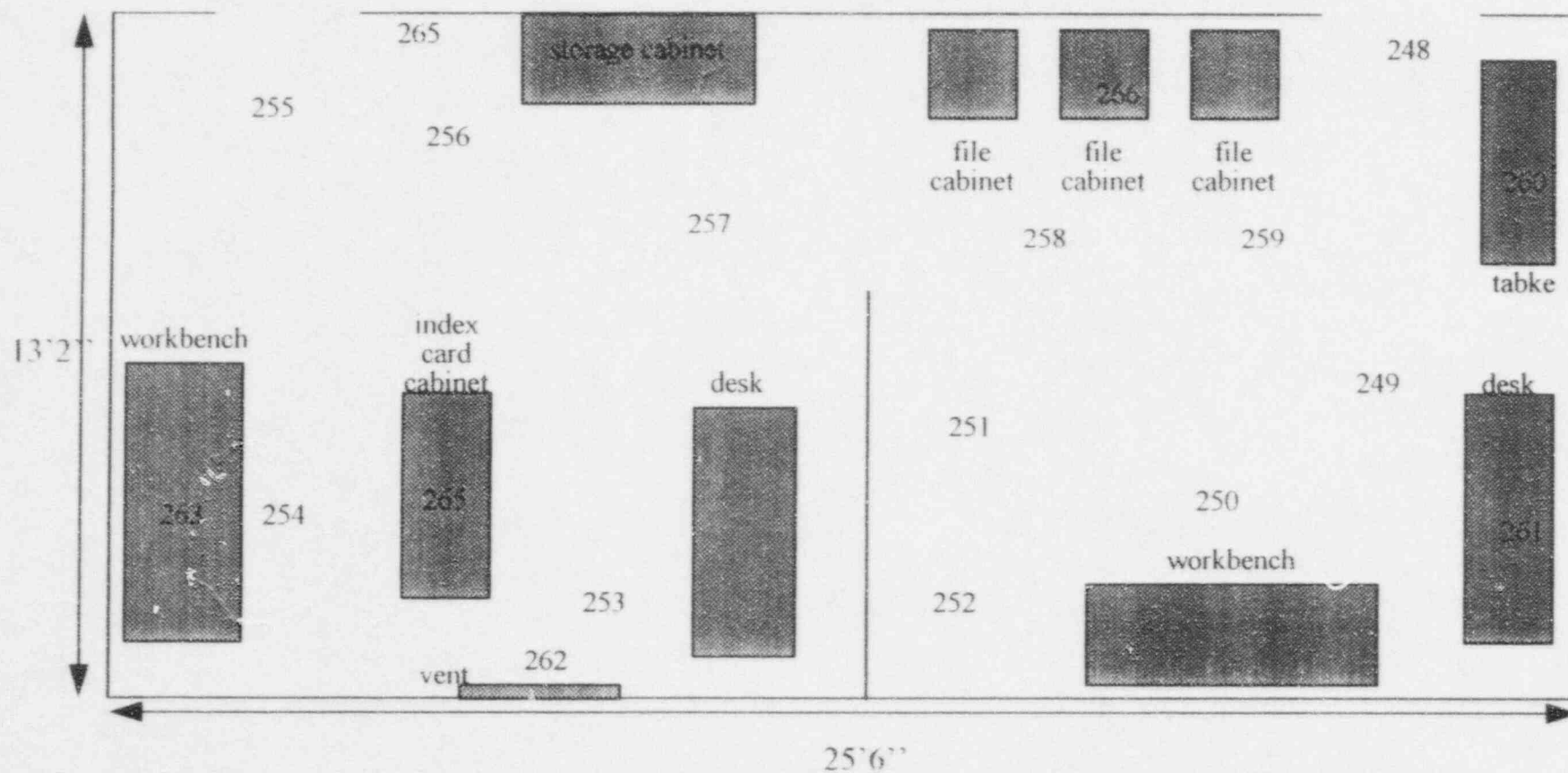
BLDG. 217

ROOM-203

JAN. 24, 1997



North



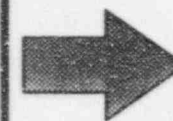


FEMA-WINCHESTER, VA..

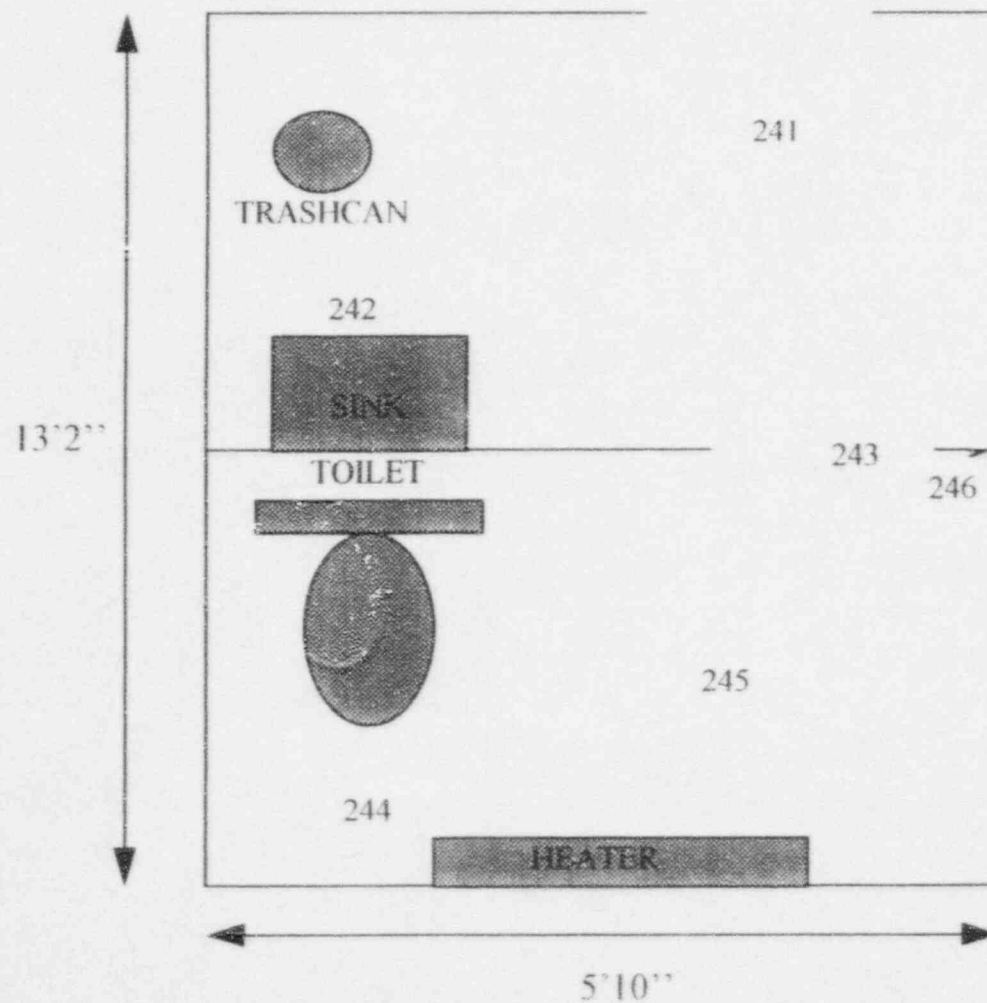
BLDG. 217

ROOM-214

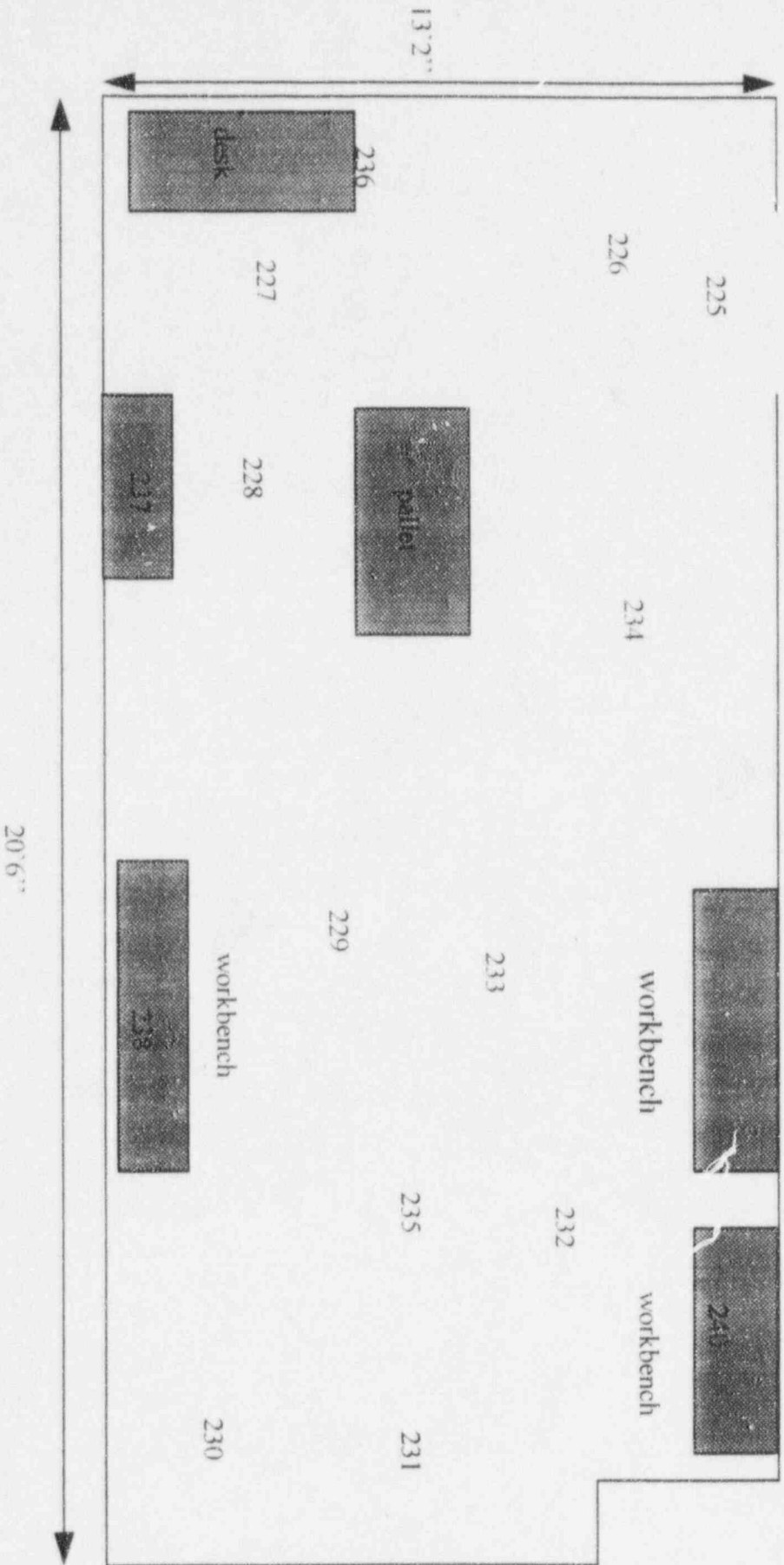
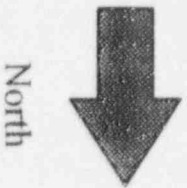
JAN. 24, 1997



North



FEMA-WINCHESTER, VA.  
BLDG. 217  
ROOM-204  
JAN. 24, 1997

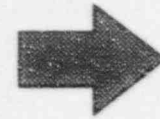


FEMA-WINCHESTER, VA.

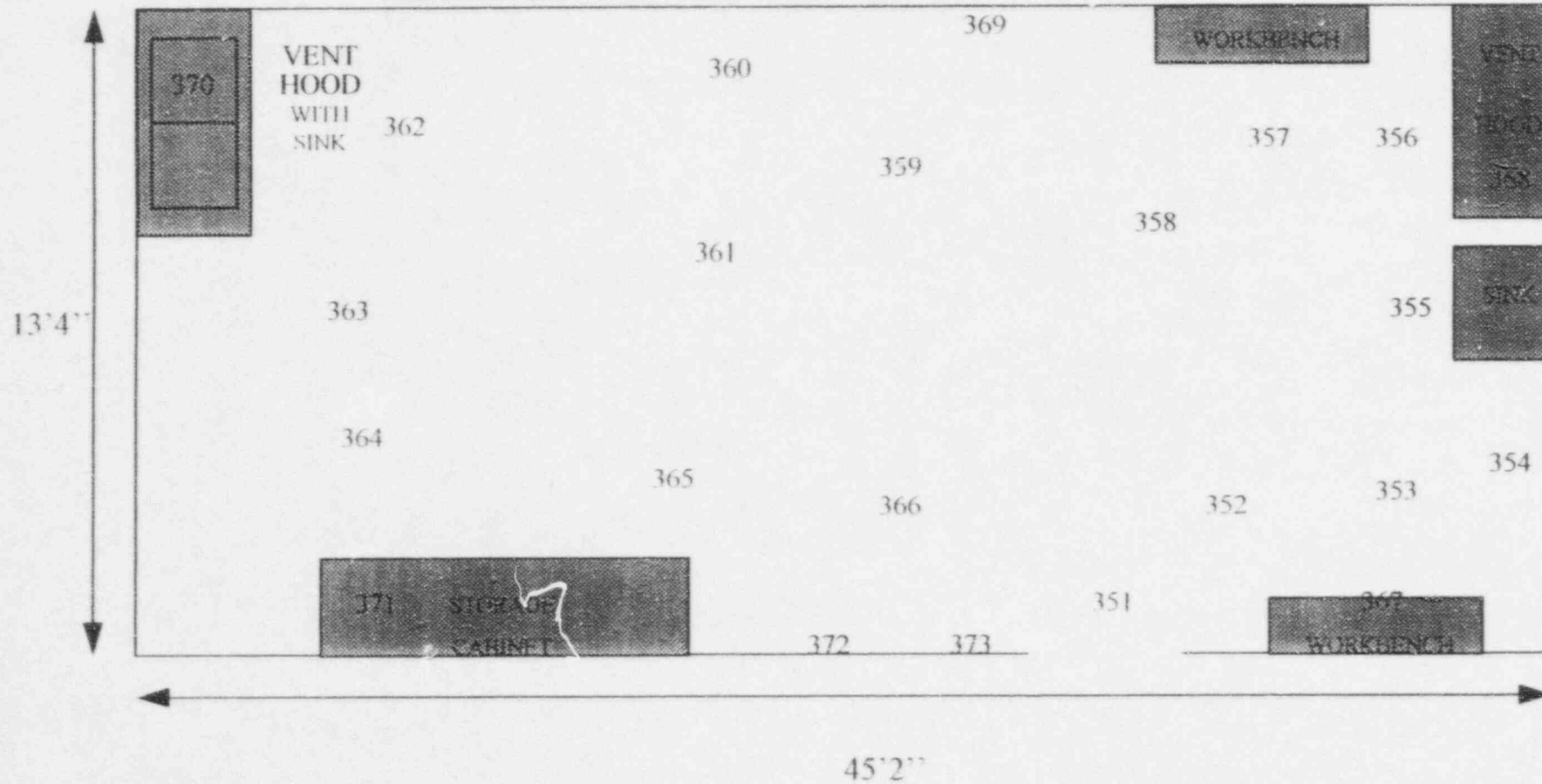
BLDG. 217

ROOM-205

JAN. 24, 1997



North



FEMA-WINCHESTER, VA.

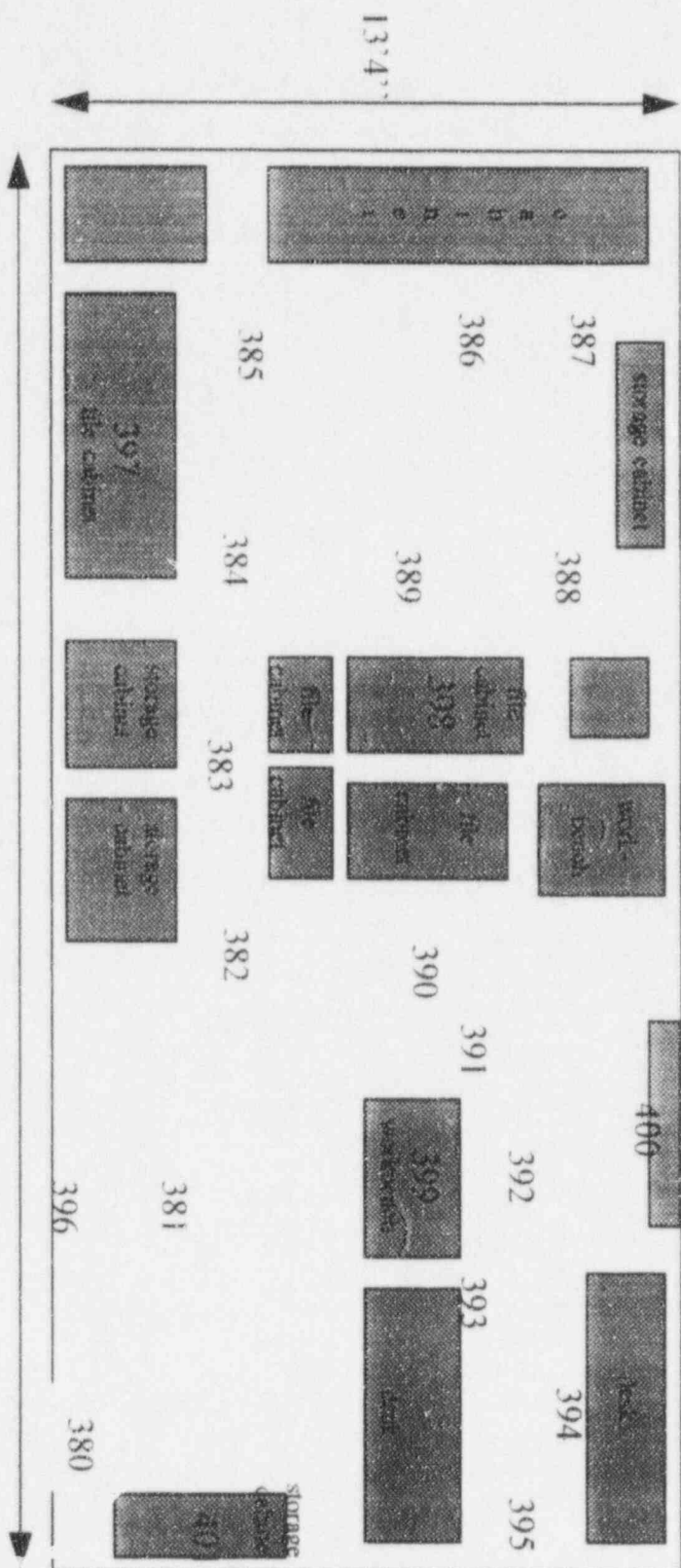
BLDG. 217

ROOM-206

JAN. 24, 1997



North

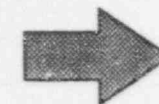


FEMA-WINCHESTER, VA.

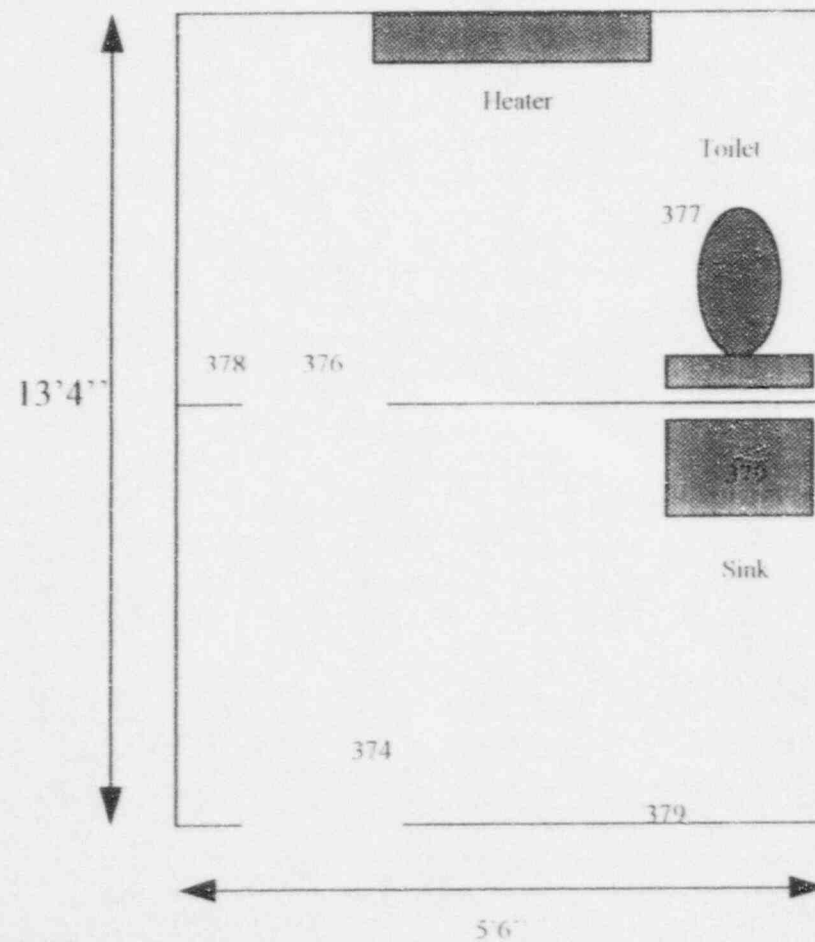
BLDG. 217

ROOM- 224

JAN. 24, 1997



North

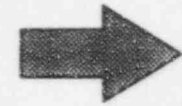


FEMA-WINCHESTER, VA.

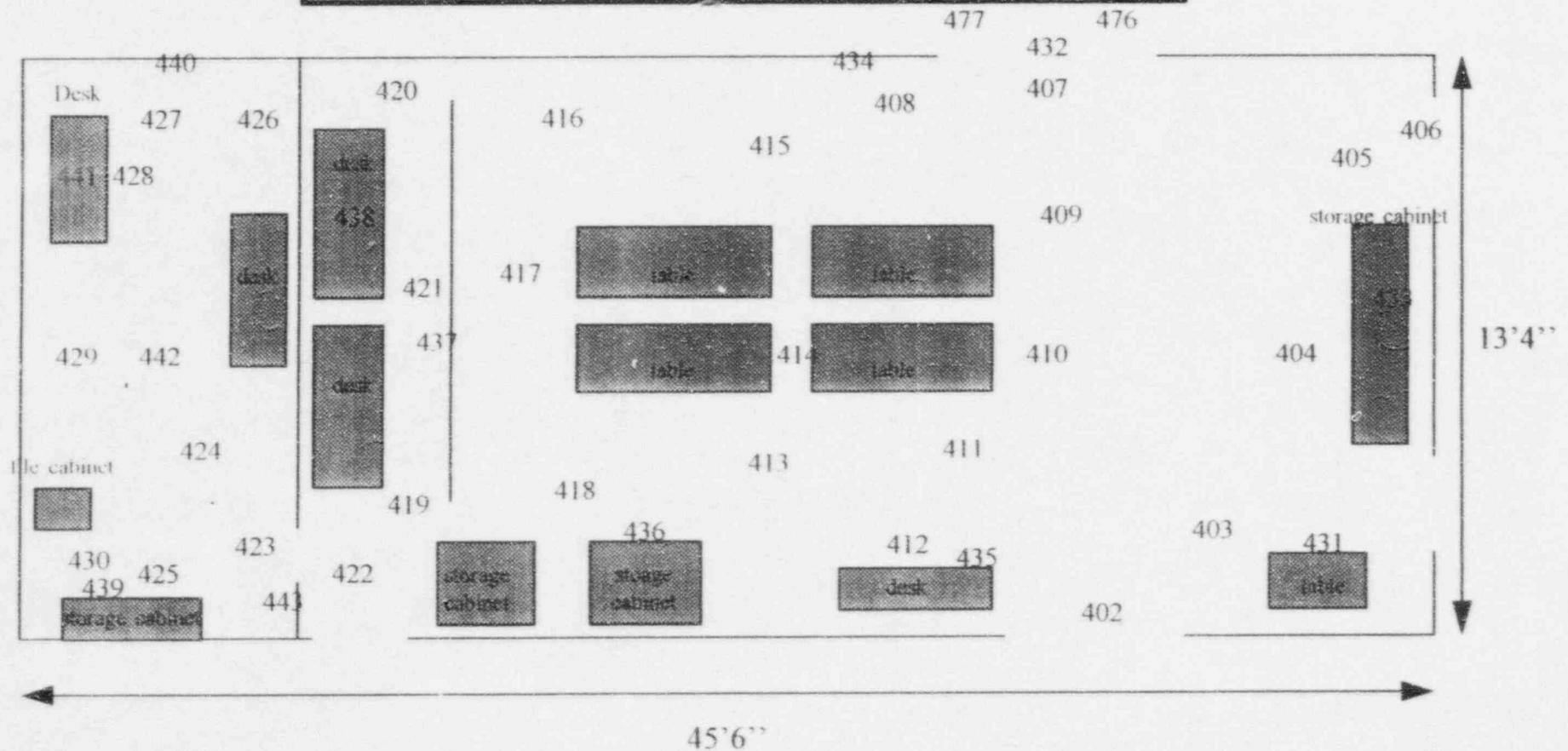
BLDG. 217

ROOM-207

JAN. 24, 1997



North

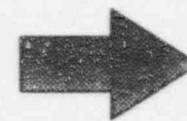


FEMA-WINCHESTER, VA.

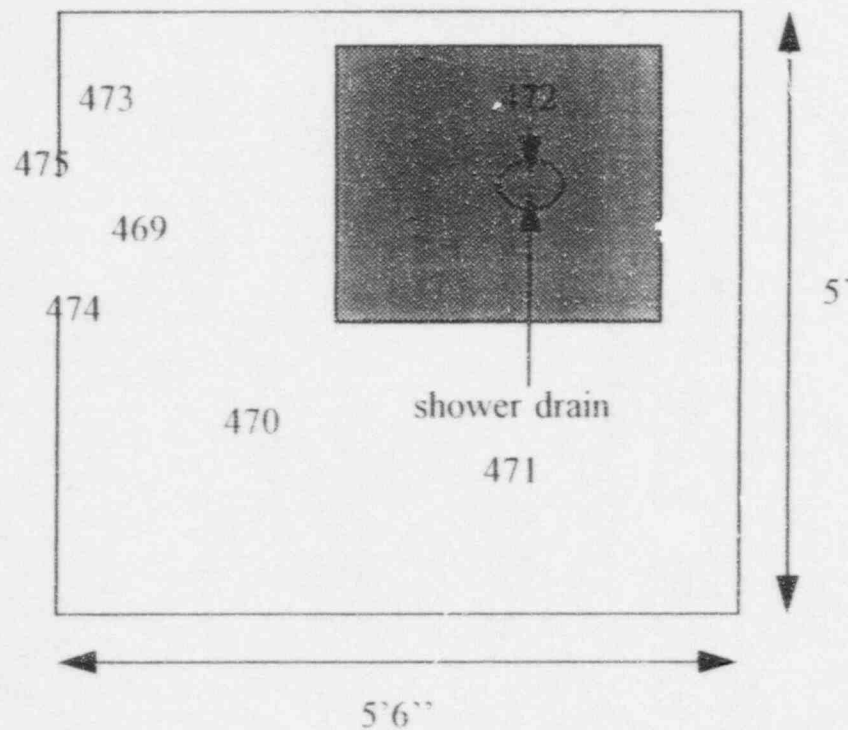
BLDG. 217

ROOM-207A

JAN. 24, 1997



north



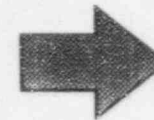


FEMA-WINCHESTER, VA.

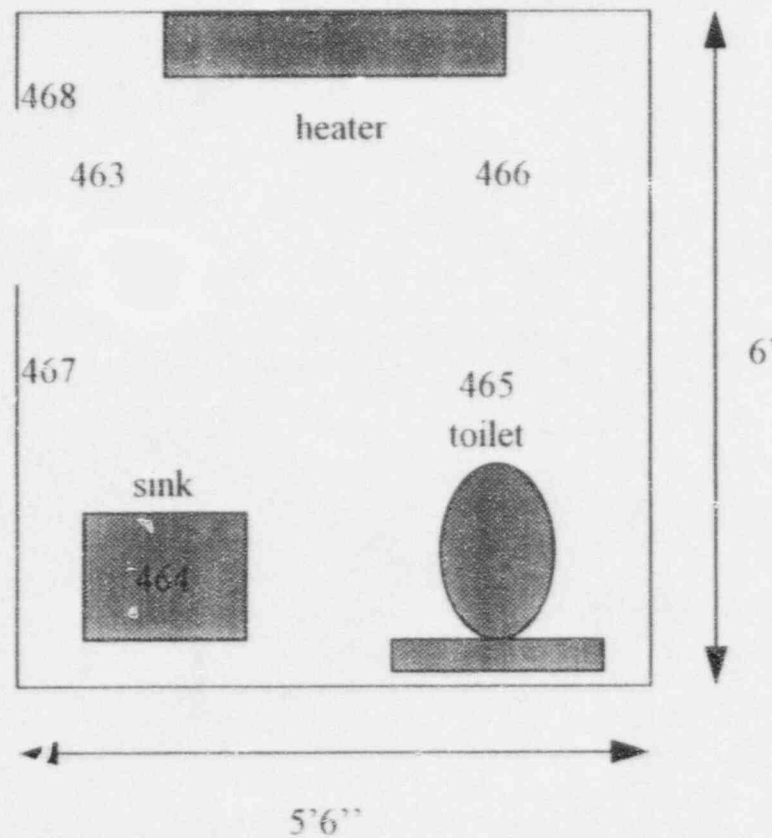
BLDG. 217

ROOM-234

JAN. 24, 1997



north



# RADIOLOGICAL SURVEY DATA REPORT

LOCATION

ZONE: FEMA

SUBZONE: N/A

BUILDING: 217

ROOM: 101

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.967	cpm	3.600	cpm		n/a
MDA	5.292	dpm/100cm <sup>2</sup>	5.676	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	
001	0	-3.524	0.0	-4.669	-62.2	
002	0	-3.159	0.0	-3.780	-54.4	
003	0	-3.524	-3.1	-4.224	-48.9	
004	-1	-3.524	-1.0	-4.002	-48.9	
005	0	-3.159	1.0	-3.557	-33.3	
006	0	-3.159	0.0	-4.447	-68.8	
007	0	-3.524	0.0	-3.113	-74.4	
008	-1	-3.159	-1.0	-2.890	-56.6	
009	0	-2.795	-1.0	-4.224	-28.9	
010	-1	-3.159	-1.0	-3.557	-61.1	
011	-1	-3.159	1.0	-4.891	20.0	

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A	
	BUILDING: 217	ROOM: 101A	

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	.6	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.967	cpm	3.600	cpm		n/a
MDA	5.293	dpm/100cm <sup>2</sup>	5.676	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	
012	1	-3.524	-3.1	-4.891	-4.4	
013	0	-3.159	2.1	-2.446	-52.2	
014	0	-3.159	-1.0	-3.335	-62.2	
015	-1	-3.524	3.1	-3.335	-31.1	
016	0	-3.524	-1.0	-3.780	-37.8	

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA BUILDING: 217	SUBZONE: N/A ROOM: 101B
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## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.967	cpm	3.600	cpm		n/a
MDA	5.293	dpm/100cm <sup>2</sup>	5.676	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>
017	-1	-3.159	-2.1	-5.114	-56.6	
018	-1	-3.524	0.0	-4.891	-102.2	
019	-1	-3.524	1.0	-2.890	-37.8	
020	-1	-3.524	-1.0	-3.113	13.3	

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA BUILDING: 217	SUBZONE: N/A ROOM: 102
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## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.967	cpm	3.600	cpm		n/a
MDA	5.293	dpm/100cm <sup>2</sup>	5.676	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>
021	-1	-3.159	1.0	-4.669	-62.2	
022	-1	-2.795	-3.1	-4.224	-66.6	
023	-1	-3.524	-2.1	-3.557	-65.5	
024	-1	-3.159	-1.0	-3.780	-58.9	
025	0	-3.159	1.0	-3.335	-89.9	
026	0	-3.524	0.0	-3.780	-60.0	
027	0	-3.524	0.0	-3.780	-43.3	
028	-1	-2.795	3.1	-4.669	-54.4	
029	1	-3.159	-1.0	-2.668	0.0	
030	-1	-3.159	0.0	-3.780	-58.9	
031	0	-3.524	2.1	-3.780	-48.9	
032	-1	-3.524	-3.1	-4.224	-74.4	
033	0	-2.430	-3.1	-1.556	-51.1	
034	0	-2.795	1.0	-3.113	-76.6	
035	0	-3.524	0.0	-4.669	-74.4	

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A	
	BUILDING: 217	ROOM: 103	

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.967	cpm	3.600	cpm		n/a
MDA	5.293	dpm/100cm <sup>2</sup>	5.676	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
036	-1	-3.159	-2.1	-5.336	-62.2
037	0	-3.159	1.0	-4.002	-40.0
038	0	-3.524	6.2	-5.781	-48.9
039	1	-3.159	-3.1	-4.891	-34.4
040	1	-2.430	-1.0	-3.113	-55.5
041	0	-3.524	-1.0	-4.002	-48.9
042	0	-2.795	-1.0	-3.335	-61.1
043	0	-3.159	-1.0	-2.446	-44.4
044	-1	-3.159	-1.0	-4.447	-66.6
045	0	-2.795	0.0	-2.446	-63.3
046	0	-3.159	-3.1	-2.001	-81.1
047	0	-3.524	-2.1	-4.447	-81.1
048	0	-3.159	-1.0	-2.446	-65.5
049	-1	-3.524	2.1	-4.224	8.9
050	0	-3.159	2.1	-4.891	41.1

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A	
	BUILDING: 217	ROOM: 104	

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.333	cpm	2.133	cpm		n/a
MDA	3.336	dpm/100cm <sup>2</sup>	4.249	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
060	-1	-0.347	0.0	0.592	-47.7
061	-1	-0.847	1.0	1.702	-44.4
062	0	-1.209	0.0	-0.962	-57.7
063	0	-1.209	-1.0	0.370	-66.6
064	0	-0.484	-2.1	-0.296	-48.9
065	1	-1.209	-3.1	-0.962	-35.5
066	0	-1.209	0.0	-0.740	-35.5
067	0	-1.209	1.0	-0.296	-54.4
068	-1	-1.209	-3.1	-0.296	-99.9
069	-1	-0.484	-1.0	0.370	-73.3
070	0	-0.484	-2.1	-0.962	-64.4
071	-1	-1.209	-2.1	0.814	-68.8
072	0	-1.209	-2.1	-0.074	-47.7
073	-1	-1.209	3.1	-0.296	-10.0



# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A
	BUILDING: 217	ROOM: 105

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	(8	cpm)	(532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.333	cpm	2.133	cpm		n/a
MDA	3.336	dpm/100cm <sup>2</sup>	4.249	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	
074	0	-1.209	-2.1	1.036	-74.4	
075	0	-0.847	0.0	-0.074	-47.7	
076	2	-1.209	2.1	-2.517	7.8	
077	1	-1.209	-3.1	-1.628	-1.1	
078	1	-0.847	-2.1	-0.518	-8.9	
079	1	-0.847	-1.0	1.258	-46.6	
080	1	-1.209	0.0	0.148	-32.2	
081	0	-0.847	-2.1	-2.517	-34.4	
082	0	-0.484	-3.1	0.814	-73.3	
083	0	-0.484	-1.0	-0.074	-54.4	
084	-1	-1.209	-1.0	-0.518	-44.4	
085	0	-0.847	-1.0	0.148	-23.3	
086	1	-0.847	1.0	-0.296	-78.8	
087	0	-0.847	6.2	-2.295	46.6	
088	1	-0.847	-1.0	-0.296	-13.3	
089	3	-0.484	1.0	-0.296	136.6	
090	1	-0.484	-1.0	-1.406	-23.3	
091	1	-0.121	-1.0	0.370	-36.6	
092	0	-1.209	6.2	0.148	-1.1	
093	0	-0.484	2.1	-0.074	-57.7	
094	0	-1.209	1.0	0.370	-34.4	
095	0	-0.484	1.0	0.148	-75.5	

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION

ZONE: FEMA

SUBZONE: N/A

BUILDING: 217

ROOM: 106

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.333	cpm	2.133	cpm		n/a
MDA	3.336	dpm/100cm <sup>2</sup>	4.249	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
096	0	-1.209	-3.1	0.148	-47.7
097	-1	-1.209	6.2	0.814	-30.0
098	-1	-0.484	6.2	0.592	-58.9
099	0	-0.847	1.0	-1.184	-48.9
100	-1	-0.484	-1.0	0.592	-32.2
101	0	-0.304	0.0	0.854	-72.2
102	0	-0.304	0.0	1.299	-30.0
103	0	-0.304	2.1	0.631	-44.4
104	1	0.790	-2.1	1.076	-24.4
105	0	-0.304	1.0	0.186	-71.1
106	0	-0.304	-1.0	1.076	-50.0
107	-1	-0.304	1.0	-0.037	-52.2
108	0	0.425	1.0	1.744	-56.6
109	-1	0.061	3.1	-0.037	-86.6
110	-1	-0.304	1.0	1.076	6.7
111	-1	-0.304	-1.0	-1.150	-46.6
112	-1	-0.304	2.1	-0.928	6.7
113	-1	-0.304	3.1	-0.705	-70.0
114	-1	-0.304	0.0	1.522	-62.2
115	0	0.061	-1.0	0.186	-61.1
116	0	-0.304	1.0	0.408	77.7
117	0	-0.304	-3.1	0.854	-50.0

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
118	0	0.425	-2.1	-0.037	-58.9
119	0	0.061	1.0	1.522	-81.1
120	0	0.061	2.1	1.522	-48.9
121	0	0.790	1.0	-0.037	-105.5
122	0	0.061	-3.1	0.854	-54.4

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA BUILDING: 217	SUBZONE: N/A ROOM: 107
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## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.083	cpm	1.717	cpm		n/a
MDA	2.169	dpm/100cm <sup>2</sup>	3.883	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	
123	0	0.061	4.1	-1.373	-63.3	
124	0	-0.304	1.0	0.854	-36.6	
125	0	1.884	0.0	1.076	-38.9	
126	0	-0.304	0.0	3.080	-22.2	
131	0	0.061	3.1	0.186	-83.3	
132	0	-0.304	-1.0	1.076	-28.9	
133	0	0.425	4.1	-0.037	-33.3	
134	0	-0.304	2.1	1.076	-45.5	
135	0	-0.304	0.0	-0.260	-51.1	
136	0	0.425	4.1	-0.260	-56.6	
137	0	-0.304	3.1	-0.037	-42.2	
138	1	-0.304	0.0	0.186	-53.3	
139	0	0.061	5.2	0.186	-60.0	
140	0	0.061	2.1	0.854	-47.7	
141	-1	0.061	2.1	1.076	-92.2	
142	-1	0.061	-1.0	-2.041	-93.3	
143	0	0.425	-1.0	0.408	-71.1	
144	-1	0.061	-2.1	0.854	-114.4	
145	0	0.061	7.2	-0.705	-44.4	
146	0	0.425	3.1	0.186	-28.9	
147	1	-0.304	-1.0	-0.037	-60.0	
148	0	0.061	1.0	0.186	-37.8	

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
149	0	0.061	1.0	-0.037	-68.8
150	0	0.061	5.2	1.076	-52.2
151	0	0.229	1.0	-0.240	-75.5
152	0	-0.828	-1.0	-0.893	-85.5
153	0	-0.123	0.0	0.632	-91.1
154	0	-0.828	1.0	-1.111	-91.1
155	-1	0.229	3.1	1.068	-60.0
156	-1	-0.123	0.0	-1.547	-75.5
157	-1	-0.828	1.0	-0.458	-83.3
158	0	-0.123	-1.0	-0.893	-71.1
159	0	-0.828	-1.0	0.850	-54.4
160	-1	-0.828	-2.1	0.414	-84.4
161	0	0.229	1.0	3.247	-57.7
162	-1	-0.123	3.1	-2.201	-35.5

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA BUILDING: 217	SUBZONE: N/A ROOM: 118
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## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.333	cpm	2.133	cpm		n/a
MDA	3.336	dpm/100cm <sup>2</sup>	4.249	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>
051	-1	-1.209	0.0	-1.184	-54.4	
052	-1	-0.484	1.0	-0.518	-56.6	
053	0	-0.847	4.1	-2.739	-26.7	
054	0	-0.484	2.1	1.258	-51.1	
055	0	-1.209	1.0	-0.074	-72.2	
056	0	-0.847	-1.0	-0.962	-72.2	
057	0	-1.209	-1.0	-2.739	-11.1	
058	-1	-0.847	0.0	-0.740	-33.3	
059	0	-0.484	-1.0	-0.074	-64.4	

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A
	BUILDING: 217	ROOM: 134

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.083	cpm	1.717	cpm		n/a
MDA	2.169	dpm/100cm <sup>2</sup>	3.883	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	
127	0	-0.304	-1.0	-0.260	-55.5	
128	0	0.061	1.0	0.854	-53.3	
129	0	-0.304	3.1	0.408	-13.3	
130	0	-0.304	-2.1	1.076	6.7	



# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A	
	BUILDING: 217	ROOM: HS1	

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.150	cpm	2.483	cpm		n/a
MDA	2.569	dpm/100cm <sup>2</sup>	4.545	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
444	0	-0.182	2.1	-2.410	-13.3
445	0	-0.182	1.0	-1.742	-11.1
446	1	-0.546	3.1	-1.520	-17.8
447	2	-0.546	-1.0	-1.520	-12.2
448	2	-0.546	2.1	0.037	-30.0
449	2	-0.546	0.0	-2.187	68.8
450	1	-0.182	-2.1	-0.408	2.2
451	2	0.229	0.0	1.064	-20.0
452	1	0.582	-2.1	0.630	-27.8
453	1	-0.123	7.2	-0.239	-65.5
454	1	-0.123	1.0	1.499	-58.9
455	0	0.229	0.0	-1.542	-44.4
456	0	1.287	2.1	-1.108	-43.3
457	-1	-0.123	2.1	1.282	-46.6
458	0	-0.123	1.0	0.413	-94.4
459	0	-0.476	5.2	0.195	-40.0
460	0	-0.476	4.1	-0.022	-24.4
461	1	-0.476	4.1	0.413	-70.0
462	1	-0.476	-2.1	1.064	0.0

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION

ZONE: FEMA

SUBZONE: N/A

BUILDING: 217

ROOM: HS2

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.235	cpm	2.110	cpm		n/a
MDA	2.738	dpm/100cm <sup>2</sup>	3.912	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
208	-1	0.580	-1.0	-0.675	-42.2
209	0	-0.123	-1.0	0.849	-44.4
210	0	-0.826	2.1	0.632	1.1
211	0	-0.123	0.0	-0.022	-43.3
212	0	0.580	-2.1	0.414	15.5
213	0	0.580	1.0	-0.675	-73.3
214	1	-0.474	-1.0	-1.329	-41.1
215	2	0.580	-1.0	-0.457	-17.8
216	3	-0.826	2.1	-0.893	-18.9
217	3	0.228	3.1	-0.457	-62.2
218	2	-0.123	2.1	-0.457	-16.7
219	1	-0.474	1.0	0.632	-4.4
220	0	-0.123	3.1	2.156	-26.7
221	0	-0.826	1.0	-0.893	-47.7

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION

ZONE: FEMA

SUBZONE: N/A

BUILDING: 217

ROOM: MH1

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.235	cpm	2.110	cpm		n/a
MDA	2.745	dpm/100cm <sup>2</sup>	3.914	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	
163	0	-0.476	-1.0	0.196	-51.1	
164	0	-0.476	1.0	0.196	-81.1	
165	0	-0.476	0.0	0.414	-71.1	
166	-1	-0.828	1.0	-0.458	-62.2	
167	-1	-0.476	0.0	0.196	-86.6	
168	-1	-0.123	2.1	-0.676	-108.8	
169	-1	0.229	-1.0	-0.676	-43.3	
170	-1	-0.828	3.1	-0.022	-62.2	
171	-1	0.229	-2.1	0.632	-114.4	
172	-1	-0.123	-2.1	1.504	-74.4	
173	-1	-0.476	4.1	0.414	-36.6	
174	0	1.286	-1.0	-0.240	-13.3	
175	-1	-0.476	-2.1	0.632	-114.4	
176	0	0.229	-3.1	0.632	-47.7	
177	0	0.229	0.0	-0.893	-86.6	
178	-1	-0.123	4.1	-1.547	-44.4	
179	-1	-0.476	1.0	0.632	-20.0	
180	-1	-0.123	0.0	0.414	-53.3	
181	-1	0.229	7.2	-0.022	-63.3	
182	-1	-0.476	0.0	0.632	-60.0	
183	-1	0.229	-1.0	0.632	-51.1	
184	-1	-0.476	-2.1	1.068	-87.7	

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
185	-1	0.229	4.1	1.939	-48.9
186	-1	-0.476	1.0	1.068	-88.8
187	-1	-0.828	-2.1	-0.676	-48.9
188	-1	-0.123	-1.0	0.632	-65.5
189	-1	-0.828	2.1	-0.893	-54.4
190	-1	-0.476	-2.1	-0.022	-84.4
191	-1	0.581	4.1	-0.893	-46.6
192	-1	-0.476	1.0	0.196	-46.6
193	-1	0.581	4.1	0.850	-6.7
194	-1	-0.123	2.1	-0.240	-82.2
195	-1	0.229	-3.1	-0.022	-84.4
196	-1	0.229	3.1	-0.022	22.2
197	-1	-0.123	-1.0	-0.893	-56.6
198	-1	0.229	1.0	-1.111	-57.7
199	-1	-0.828	1.0	1.068	-86.6
200	-1	0.581	-2.1	-1.111	-26.7
201	-1	0.228	-1.0	0.196	-80.0
202	0	-0.826	-3.1	0.196	-61.1
203	0	0.228	5.2	-0.675	-60.0
204	0	0.228	1.0	3.245	-62.2
205	-1	0.580	3.1	-0.893	-12.2
206	-1	-0.474	1.0	1.721	-8.9
207	0	-0.123	-2.1	1.067	-73.3

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A
	BUILDING: 217	ROOM: 201

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.133	cpm	2.200	cpm	n/a
MDA	2.478	dpm/100cm <sup>2</sup>	4.307	dpm/100cm <sup>2</sup>	n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
285	-1	-0.485	5.2	-0.888	-95.5
286	-1	-0.485	-2.1	0.000	-95.5
287	-1	-0.121	-1.0	-0.444	-68.8
288	-1	-0.485	0.0	-1.777	-35.5
289	-1	-0.121	0.0	-0.444	-81.1
290	-1	-0.485	1.0	0.000	-36.6
291	-1	-0.121	-1.0	-1.111	-74.4
292	-1	-0.121	1.0	-1.555	-32.2
293	-1	-0.485	-1.0	-1.333	-93.3
294	-1	-0.121	1.0	1.333	-48.9
295	-1	-0.121	2.1	-0.222	-84.4
296	-1	-0.485	-2.1	-0.666	-74.4
297	-1	-0.485	1.0	0.888	-67.7
298	0	-0.121	6.2	-3.110	68.8
299	0	-0.485	-2.1	-1.333	-63.3
300	0	0.424	0.0	0.779	30.0

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION

ZONE: FEMA

SUBZONE: N/A

BUILDING: 217

ROOM: 201A

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.083	cpm	2.050	cpm		n/a
MDA	2.160	dpm/100cm <sup>2</sup>	4.188	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	
301	-1	0.061	0.0	3.896	-51.1	
302	-1	-0.303	-2.1	1.002	-84.4	
303	-1	0.424	-1.0	-0.334	-60.0	
304	-1	-0.303	-1.0	-0.334	-17.8	
305	-1	0.061	-3.1	-1.670	-68.8	
306	-1	-0.303	-3.1	-0.111	-72.2	

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A
	BUILDING: 217	ROOM: 202

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.133	cpm	2.200	cpm		n/a
MDA	2.478	dpm/100cm <sup>2</sup>	4.307	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	
267	-1	-0.485	-1.0	-1.777	-63.3	
268	-1	-0.485	0.0	-3.332	-63.3	
269	0	-0.485	1.0	0.666	-14.4	
270	0	-0.485	-2.1	-0.444	-85.5	
271	-1	-0.121	1.0	0.222	-83.3	
272	-1	-0.485	-2.1	-0.444	-76.6	
273	-1	-0.485	0.0	-0.888	-41.1	
274	0	-0.485	-1.0	-0.222	-43.3	
275	0	-0.485	-3.1	-1.333	-32.2	
276	-1	-0.485	0.0	2.221	-56.6	
277	-1	-0.485	-1.0	-0.444	-47.7	
278	-1	0.243	5.2	0.444	-72.2	
279	-1	-0.121	0.0	-0.222	-55.5	
280	-1	-0.485	1.0	-1.777	-73.3	
281	-1	-0.121	-3.1	-1.555	-104.4	
282	-1	-0.121	-3.1	-2.221	-119.9	
283	-1	-0.121	-1.0	-0.222	-121.0	
284	-1	-0.485	0.0	-0.888	-76.6	



# RADIOLOGICAL SURVEY DATA REPORT

LOCATION

ZONE: FEMA

SUBZONE: N/A

BUILDING: 217

ROOM: 203

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.235	cpm	2.110	cpm		n/a
MDA	2.738	dpm/100cm <sup>2</sup>	3.912	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	
248	-1	-0.474	4.1	-1.329	-93.3	
249	-1	0.228	1.0	-0.457	-95.5	
250	-1	0.580	-1.0	0.414	-66.6	
251	-1	-0.121	-2.1	-1.111	-71.1	
252	-1	0.607	2.1	-0.888	-61.1	
253	-1	-0.485	-1.0	0.000	-74.4	
254	-1	-0.485	0.0	0.000	-53.3	
255	-1	-0.121	3.1	-1.777	-96.6	
256	-1	-0.121	-3.1	-0.222	-77.7	
257	-1	-0.485	0.0	-1.777	-67.7	
258	-2	-0.121	0.0	-1.333	-103.3	
259	-1	-0.121	-2.1	-0.888	-52.2	
260	-1	-0.485	-1.0	0.222	-97.7	
261	0	-0.121	-3.1	-1.111	-87.7	
262	-1	-0.485	-1.0	0.222	-60.0	
263	0	-0.121	1.0	0.888	-78.8	
264	-1	-0.485	6.2	-0.666	-95.5	
265	-1	-0.485	3.1	-0.666	3.3	
266	-1	0.243	0.0	-0.444	-97.7	

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A
	BUILDING: 217	ROOM: 204

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.235	cpm	2.110	cpm		n/a
MDA	2.738	dpm/100cm <sup>2</sup>	3.912	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>
225	-1	-0.474	0.0	0.849	-78.8	
226	-1	-0.123	-3.1	-0.022	-63.3	
227	-1	-0.123	-3.1	-2.418	-61.1	
228	-1	-0.474	-2.1	-1.764	-71.1	
229	0	1.282	-2.1	-1.111	-11.1	
230	0	-0.474	-1.0	0.414	-51.1	
231	0	0.228	2.1	-0.457	-63.3	
232	0	0.228	-1.0	0.196	-72.2	
233	-1	-0.123	-1.0	-0.457	-80.0	
234	-1	0.228	-3.1	0.849	-73.3	
235	0	-0.474	1.0	1.067	-72.2	
236	0	-0.474	0.0	0.414	-84.4	
237	-1	-0.826	3.1	1.285	-104.4	
238	0	-0.123	4.1	-0.240	28.9	
239	0	-0.826	1.0	-1.546	-89.9	
240	-1	0.228	0.0	-0.457	-61.1	

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A
	BUILDING: 217	ROOM: 204A

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.235	cpm	2.110	cpm		n/a
MDA	2.738	dpm/100cm <sup>2</sup>	3.912	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	
222	-1	0.228	-2.1	-0.457	-94.4	
223	0	0.228	-2.1	-0.022	3.3	
224	0	-0.826	0.0	-0.022	-43.3	

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A	
	BUILDING: 217	ROOM: 205	

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.235	cpm	2.110	cpm		n/a
MDA	2.741	dpm/100cm <sup>2</sup>	3.919	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	
351	-1	0.932	1.0	1.506	-65.5	
352	-1	-0.475	-3.1	-0.458	-71.1	
353	-1	0.229	3.1	3.251	-48.9	
354	0	-0.123	3.1	-0.676	-82.2	
355	0	-0.827	0.0	-1.331	-34.4	
356	1	0.229	1.0	-0.458	-38.9	
357	0	0.932	1.0	-0.022	-37.8	
358	0	0.229	2.1	-0.022	-85.5	
359	0	-0.123	1.0	-1.549	-87.7	
360	0	-0.123	4.1	-0.240	-31.1	
361	0	-0.123	5.2	-0.240	-55.5	
362	-1	0.229	-1.0	0.196	-52.2	
363	0	-0.123	3.1	3.033	-73.3	
364	-1	-0.475	0.0	-1.986	-62.2	
365	0	-0.475	-1.0	0.196	-65.5	
366	-1	-0.123	-1.0	-1.331	-63.3	
367	-1	0.580	-2.1	0.415	-63.3	
368	1	0.229	6.2	-0.458	1.1	
369	1	-0.123	6.2	-0.676	119.9	
370	0	-0.123	-1.0	-0.895	-38.9	
371	0	-0.123	5.2	-0.895	-98.8	
372	-1	-0.475	4.1	0.196	24.4	

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
373	-1	0.229	2.1	-1.549	-6.7

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A
	BUILDING: 217	ROOM: 206

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.235	cpm	2.110	cpm		n/a
MDA	2.741	dpm/100cm <sup>2</sup>	3.919	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	
380	-1	0.229	6.2	0.633	-53.3	
381	-2	-0.475	3.1	0.196	-64.4	
382	-2	0.229	-1.0	-0.240	-22.2	
383	-2	-0.475	6.2	0.415	-88.8	
384	-2	-0.475	3.1	-1.113	-80.0	
385	-2	-0.475	2.1	0.196	-75.5	
386	-1	0.580	1.0	1.287	-74.4	
387	-1	0.229	0.0	-0.458	-43.3	
388	0	-0.827	3.1	-1.331	-43.3	
389	0	-0.123	-1.0	1.069	-76.6	
390	-1	-0.475	0.0	-1.331	-60.0	
391	-1	-0.827	4.1	0.851	-71.1	
392	-1	-0.123	3.1	1.069	-51.1	
393	0	0.580	3.1	1.287	-21.1	
394	0	-0.475	2.1	-2.422	-31.1	
395	-1	-0.827	3.1	0.633	-75.5	
396	-1	0.229	1.0	-0.895	-74.4	
397	-1	0.580	3.1	0.633	-108.8	
398	-1	0.580	0.0	-0.240	-107.7	
399	-1	-0.123	4.1	-0.240	-102.2	
400	0	0.580	-2.1	3.906	4.4	
401	-1	-0.182	7.2	-2.187	-51.1	

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A	
	BUILDING: 217	ROOM: 207	

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.150	cpm	2.483	cpm		n/a
MDA	2.569	dpm/100cm <sup>2</sup>	4.545	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
402	-2	-0.182	5.2	-1.742	-70.0
403	-2	-0.182	2.1	-1.965	-78.8
404	-1	0.182	3.1	-0.630	-71.1
405	-1	0.546	0.0	2.261	-56.6
406	0	-0.182	5.2	-1.965	-48.9
407	-1	-0.182	1.0	-0.630	-47.7
408	0	-0.546	2.1	-0.185	-55.5
409	-1	-0.182	-1.0	-2.854	-65.5
410	-1	-0.546	-1.0	-2.854	-46.6
411	-1	-0.546	7.2	-1.520	-88.8
412	-1	-0.182	3.1	-2.187	-77.7
413	-1	0.182	0.0	0.259	-60.0
414	-1	0.182	-2.1	-3.299	-75.5
415	-1	-0.546	-1.0	-1.742	-64.4
416	-1	-0.546	-1.0	-1.742	-50.0
417	-1	-0.546	1.0	0.704	-67.7
418	-1	-0.546	-1.0	-0.185	-83.3
419	-1	-0.546	2.1	-1.520	-57.7
420	-1	-0.546	-1.0	-1.965	-48.9
421	-1	-0.182	1.0	-0.853	-61.1
422	-1	-0.182	1.0	-1.075	-83.3
423	-1	1.274	1.0	-2.854	-76.6



Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
424	-1	-0.546	-2.1	-0.408	-75.5
425	-1	0.182	-2.1	-0.853	-25.5
426	0	-0.182	-1.0	-2.187	-25.5
427	0	-0.182	5.2	-1.520	-21.1
428	1	-0.546	3.1	-2.187	3.3
429	0	-0.182	1.0	-1.965	-64.4
430	-1	-0.546	2.1	-1.075	-81.1
431	-1	-0.182	5.2	-1.742	-73.3
432	-1	-0.546	-3.1	-0.630	-37.8
433	-1	-0.546	-1.0	0.259	-41.1
434	0	-0.546	6.2	-1.520	-53.3
435	-1	-0.546	-1.0	-1.520	-75.5
436	-1	-0.546	0.0	-3.077	-58.9
437	-1	-0.546	0.0	-3.077	-70.0
438	-1	-0.182	-1.0	-1.297	-66.6
439	-1	-0.182	0.0	-0.853	-104.4
440	0	-0.546	5.2	0.482	75.5
441	1	-0.546	0.0	-0.408	8.9
442	0	-0.546	2.1	-1.520	-75.5
443	1	-0.182	-2.1	-1.075	-46.6
476	0	-0.123	2.1	1.499	-55.5
477	0	-0.476	1.0	-1.542	-34.4

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A	
	BUILDING: 217	ROOM: 207A	

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	(5	cpm)	(532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.235	cpm	2.110	cpm		n/a
MDA	2.748	dpm/100cm <sup>2</sup>	3.901	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	
469	-2	0.229	2.1	0.195	-92.2	
470	-2	-0.123	4.1	1.933	-86.6	
471	-2	-0.123	6.2	-0.673	63.3	
472	-1	-0.476	3.1	3.236	-145.5	
473	-2	-0.476	2.1	-0.456	-26.7	
474	-2	0.582	-1.0	-0.673	-51.1	
475	-2	0.229	-2.1	-0.239	-16.7	

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A	
	BUILDING: 217	ROOM: 214	

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.235	cpm	2.110	cpm		n/a
MDA	2.738	dpm/100cm <sup>2</sup>	3.912	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
241	-1	1.634	2.1	-0.457	-91.1
242	-1	-0.123	0.0	-0.022	-73.3
243	-1	-0.826	0.0	-0.893	-78.8
244	-1	0.228	-1.0	2.374	-67.7
245	-1	0.580	2.1	-1.546	-70.0
246	-1	0.580	-3.1	-1.546	-45.5
247	-1	-0.826	1.0	0.849	-65.5

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A
	BUILDING: 217	ROOM: 224

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.235	cpm	2.110	cpm		n/a
MDA	2.741	dpm/100cm <sup>2</sup>	3.919	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma		Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>
374	-1	0.229	2.1	0.633	-81.1	
375	-1	-0.475	4.1	1.506	-80.0	
376	-1	-0.475	3.1	-1.549	-76.6	
377	0	-0.827	2.1	-1.113	-65.5	
378	0	-0.475	7.2	-2.422	-25.5	
379	-1	-0.827	-2.1	-0.240	-31.1	

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A	
	BUILDING: 217	ROOM: 234	

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.235	cpm	2.110	cpm		n/a
MDA	2.748	dpm/100cm <sup>2</sup>	3.901	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
463	0	-0.123	0.0	-1.325	-43.3
464	0	-0.123	0.0	-0.022	-56.6
465	0	-0.476	2.1	0.195	-52.2
466	0	-0.476	1.0	-1.325	-38.9
467	0	-0.829	-1.0	-0.456	-40.0
468	0	-0.476	3.1	-1.108	-17.8

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A	
	BUILDING: 217	ROOM: MH2	

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	4	dpm/100cm <sup>2</sup>	295	dpm/100cm <sup>2</sup>	5	microR/hour
	( 8	cpm)	( 532	cpm)		
MDA	11	dpm/100cm <sup>2</sup>	76	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	33.53	percent	31.16	percent		n/a
Probe area	578	cm <sup>2</sup>	578	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.083	cpm	2.050	cpm	n/a
MDA	2.160	dpm/100cm <sup>2</sup>	4.188	dpm/100cm <sup>2</sup>	n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
307	-1	-0.303	3.1	0.779	-25.5
308	-1	-0.303	-1.0	0.111	-96.6
309	-1	-0.303	0.0	-0.334	-67.7
310	-1	-0.303	1.0	-0.779	-45.5
311	-1	0.787	1.0	-1.002	-13.3
312	-1	0.061	-1.0	-1.447	-22.2
313	-1	-0.303	-1.0	1.002	-91.1
314	-1	0.424	-3.1	0.779	-89.9
315	-1	0.061	0.0	-0.557	-78.8
316	-1	0.061	-2.1	-1.002	-105.5
317	-2	-0.303	0.0	0.779	-32.2
318	-2	0.061	-1.0	-0.334	-48.9
319	-2	-0.303	0.0	1.670	-92.2
320	-1	0.061	0.0	0.334	40.0
321	-2	0.424	-2.1	0.111	-75.5
322	-1	0.061	-2.1	-0.111	-78.8
323	-1	0.061	0.0	-1.447	-53.3
324	-1	-0.303	-1.0	0.334	-74.4
325	-2	0.061	0.0	0.779	-2.2
326	-2	-0.303	0.0	0.779	-103.3
327	-2	0.061	-1.0	-1.224	-80.0
328	-2	0.061	4.1	-0.557	-92.2

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
329	-1	-0.303	1.0	-1.670	-72.2
330	-1	0.061	3.1	-0.111	-34.4
331	-1	-0.303	0.0	-1.002	-57.7
332	-1	0.061	0.0	-1.224	-41.1
333	-2	0.424	2.1	0.557	-89.9
334	-1	0.061	-2.1	-0.557	-81.1
335	-1	-0.303	1.0	-0.557	-75.5
336	-1	0.061	3.1	0.111	-54.4
337	-1	0.061	-1.0	-2.115	-81.1
338	-1	0.061	2.1	-1.002	-66.6
339	-1	0.061	4.1	-0.334	-32.2
340	-2	-0.303	-2.1	-1.447	-94.4
341	-1	0.424	3.1	0.557	-54.4
342	-1	0.061	-1.0	-0.334	-68.8
343	-1	-0.303	3.1	0.557	-50.0
344	-1	-0.303	1.0	0.334	-2.2
345	-1	0.061	-1.0	1.224	-106.6
346	-1	-0.303	-1.0	-1.002	-80.0
347	-1	-0.303	-1.0	1.670	-76.6
348	0	0.061	0.0	-0.334	-40.0
349	0	-0.303	4.1	-0.779	-2.2
350	-1	0.061	3.1	-1.447	-6.7



FEMA, Winchester, VA.  
Building 218  
Survey points

Machine shop, room 110

- 1 - 28 taken on floor
- Wipe 29 on door
- Wipe 30 on isocut machine east side by exit
- 31 and 32 on workbench
- 33 on drill press
- 34 on north side of room on sheet metal machine
- 35 on table saw
- 36 on table press
- 37 on jig boring machine
- 38 on sheet metal machine
- 39 on lite green lathe machine
- 40 on southwest corner work bench
- 41 on yellow lathe machine
- 42 on purple lathe machine
- 43 - 63 on floor
- 64 on band saw in the southeast corner
- 65 on workbench on east side of building
- 66 on vertical band saw
- 67 in the center of the room on the workbench
- 68 is on the horizontal grinder in the north west corner
- 69 in the northwest corner on the blue grinder
- 70 on the work bench by the blue grinder
- 71 is on the tool grinding machine
- 72 in the southwest corner on jig grinder
- 73 is on the west wall
- 74 is on the Hammond grinder
- 75 is on the injection molder
- 76 on the work bench
- 77 on southeast sheet metal machine
- 78 on honing machine
- 79 is on the sink counter top

Room 108, loading dock

- 80 - 100 are taken on the floor ( 89 on drain )
- 210 on garage door
- 211 on machine shop locker on east wall
- 212 on x-ray equipment
- 209 on source bay hallway door
- 208 on door leading in to room 109

Source bay hallway

- 101 - 130 on the floor
- 131 on top of east side of the file cabinet
- 132 on east side file cabinet
- 133 on door leading into room 114
- 134 on door leading into room 113

- 135 - 138 on east wall HP counting station
- 139 on east wall work bench
- 140 on door leading into room 112
- 141 on door leading into room 111
- 142 on desk at south end of hallway

Room 111, old x-ray machine room

- 143 - 163 on the floor
- 164 and 165 in wooden storage cabinets on Northeast wall
- 166 in wooden storage cabinets on north wall
- 167 at the bottom of steps near the north wall
- 168 on metal storage cabinets in northwest corner
- 169 inside machine shop storage locker
- 170 inside metal storage locker
- 171 on south wall in west corner
- 172 on work bench
- 173 on electric panel
- 174 on storage cabinet east side
- 175 on storage cabinet east wall

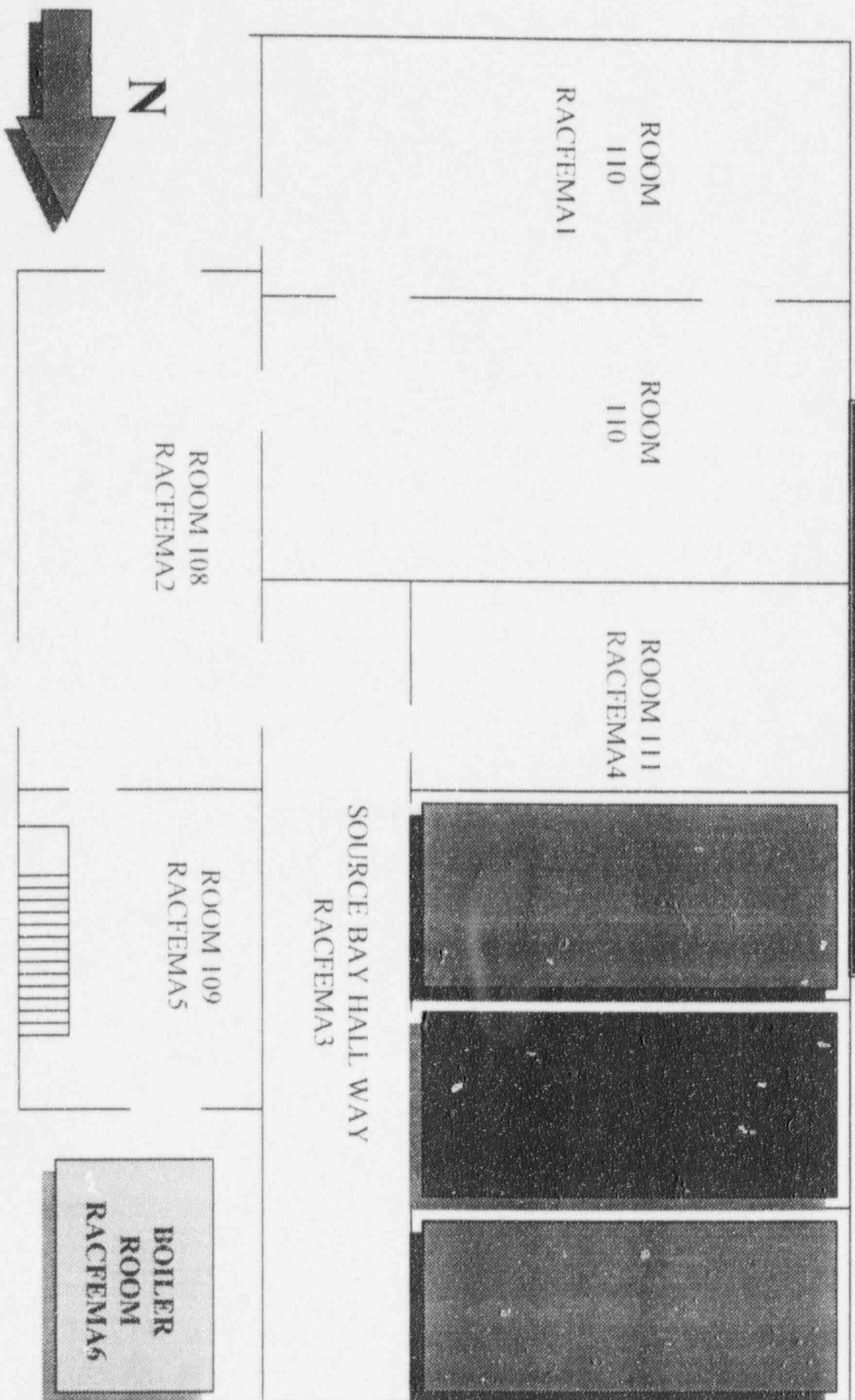
Room 109, Machine shop storage

- 176 - 187 on floor
- 188 on door ( south side )
- 189 on the electric panel
- 190 on the double door north wall
- 191 on the first landing going down the steps
- 192 on the twelfth step
- 193 on the drain at the bottom of the steps
- 194 on the outside of the boiler room door

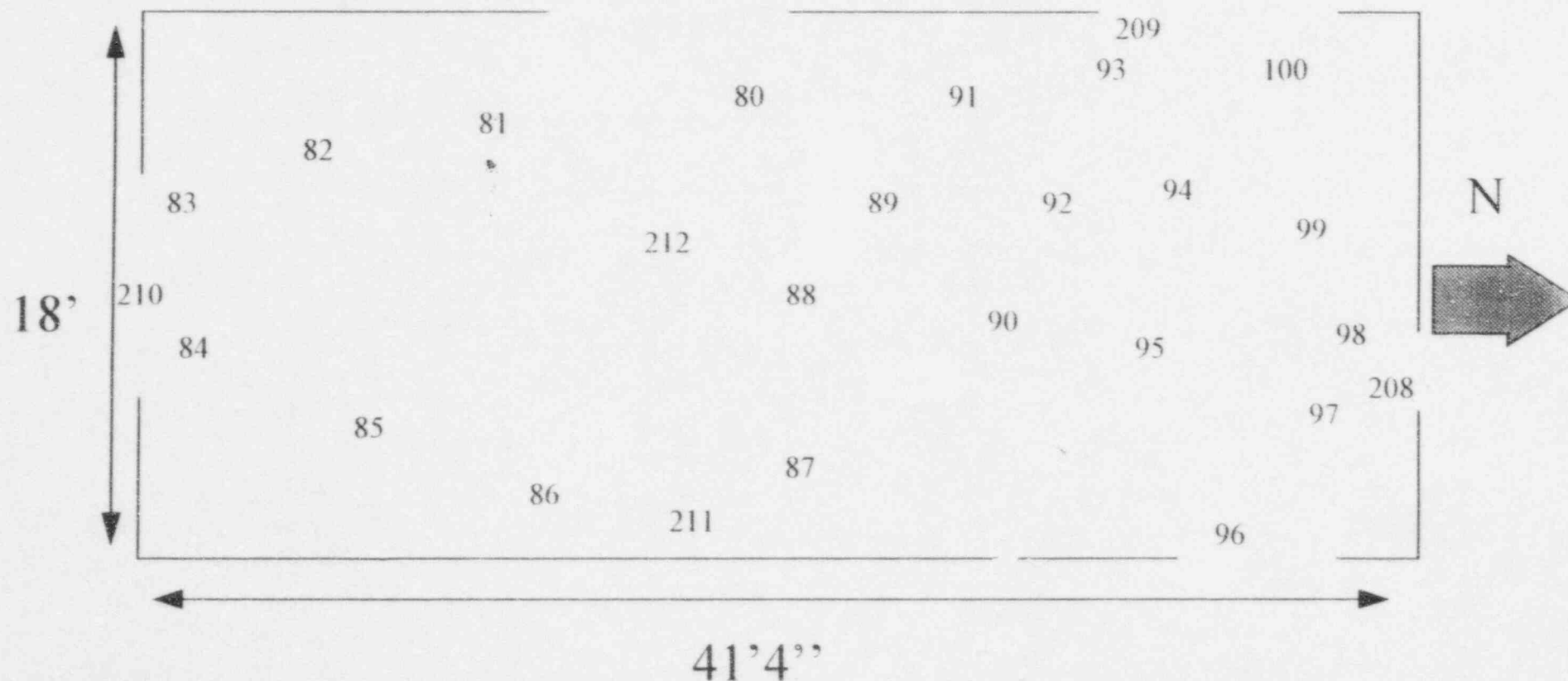
Boiler room

- 195 thru 202 on the floor
- 203 on the compressor in the northwest corner
- 204 on the electric panel on the west wall
- 205 - 206 on the floor
- 207 is on the door

FEMA. Winchester, VA.  
Building 218  
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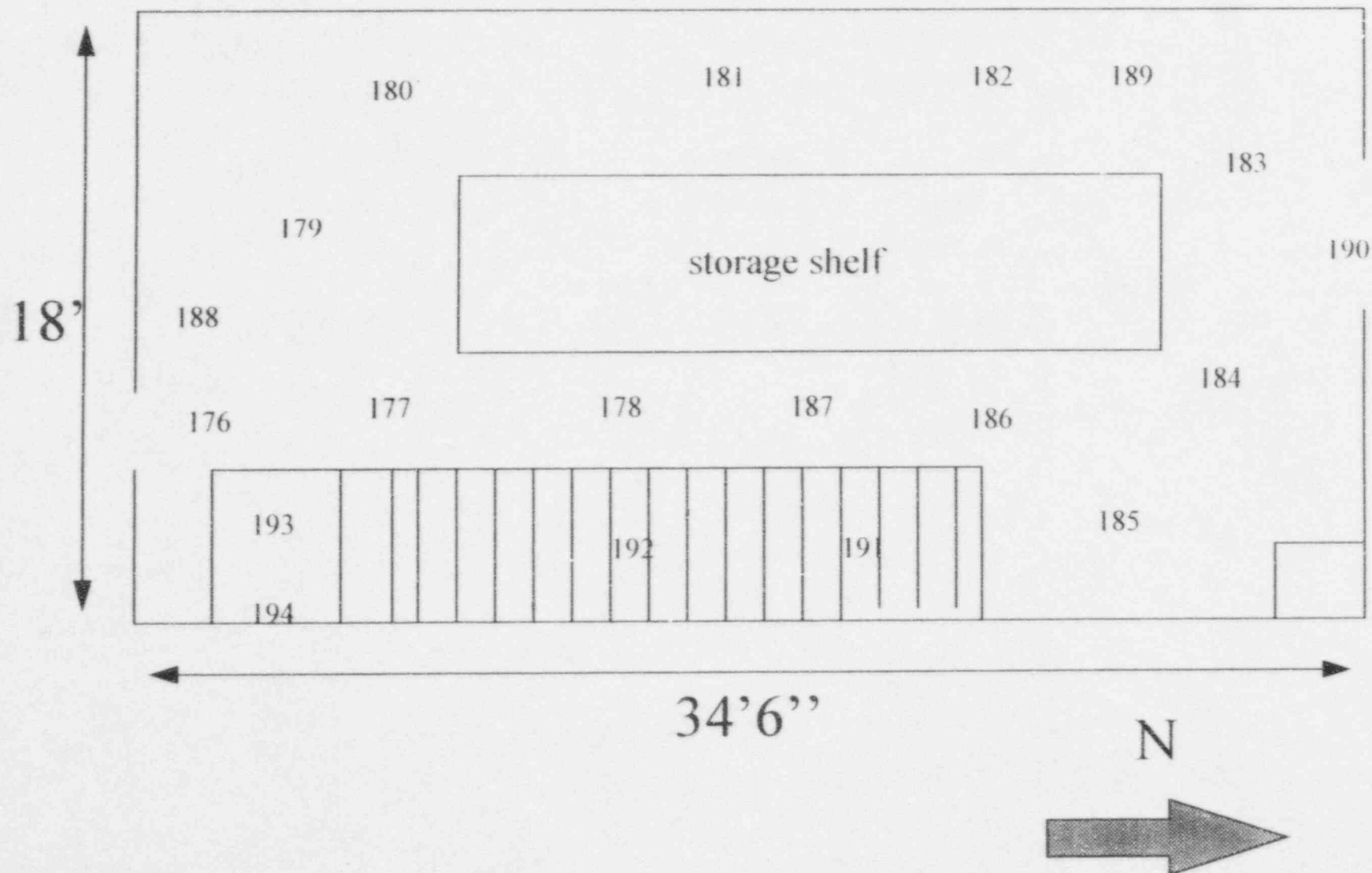


FEMA. Winchester, VA. Building 218, room 108  
January 30, 1997

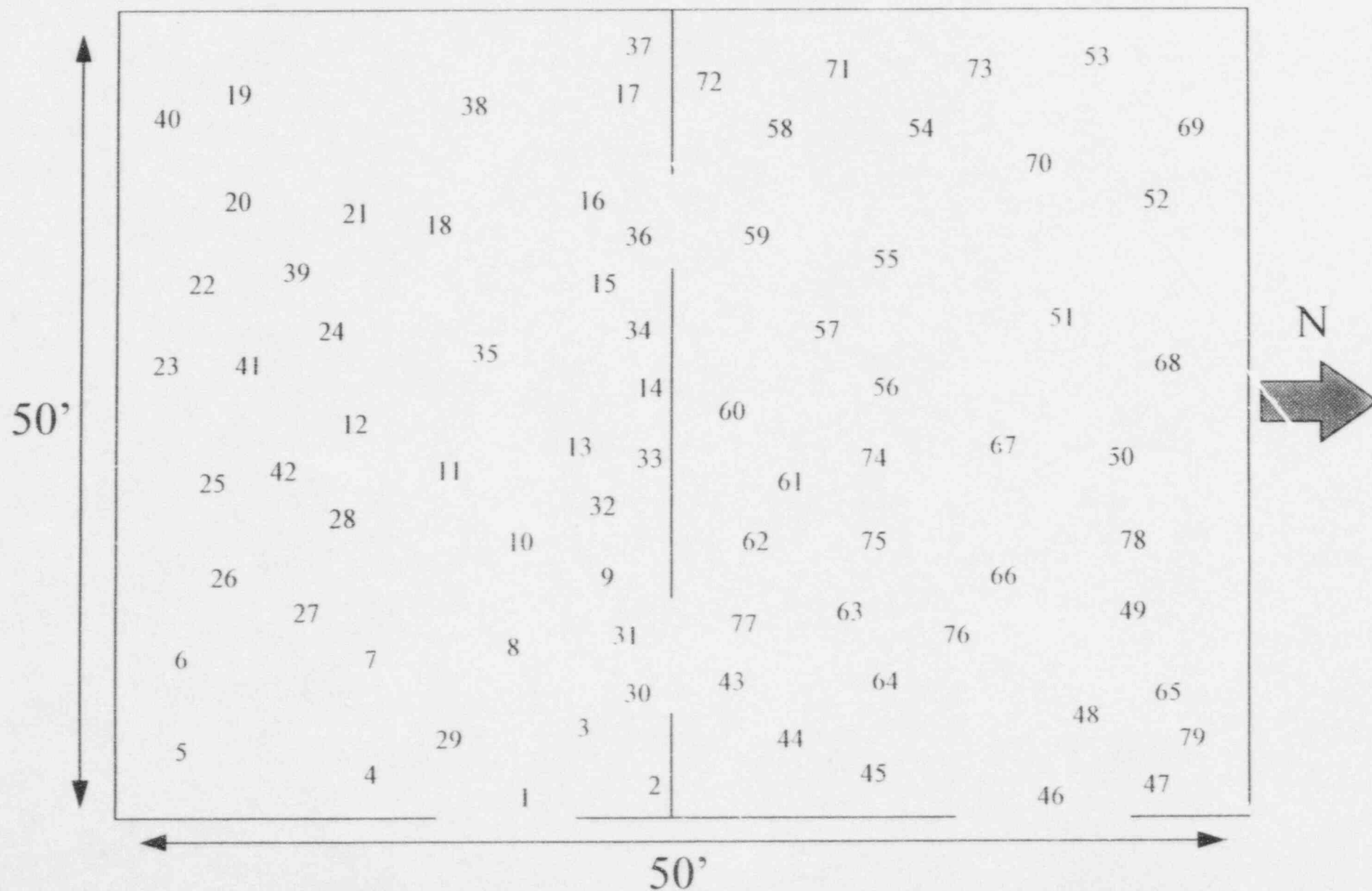


# FEMA. Winchester, VA. Building 218, room 109

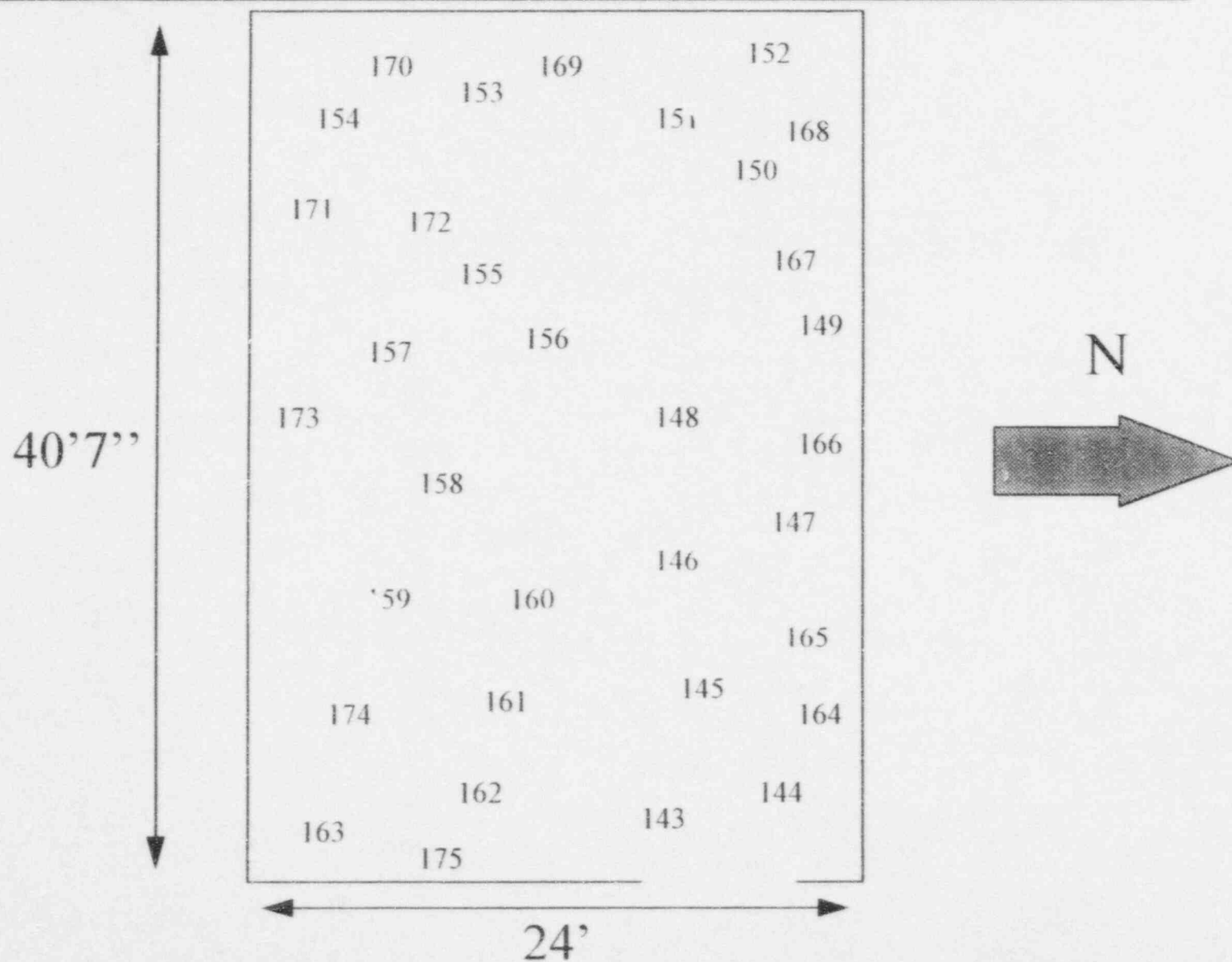
January 30, 1997



FEMA. Winchester, VA. Building 218, room 110  
January 30, 1997



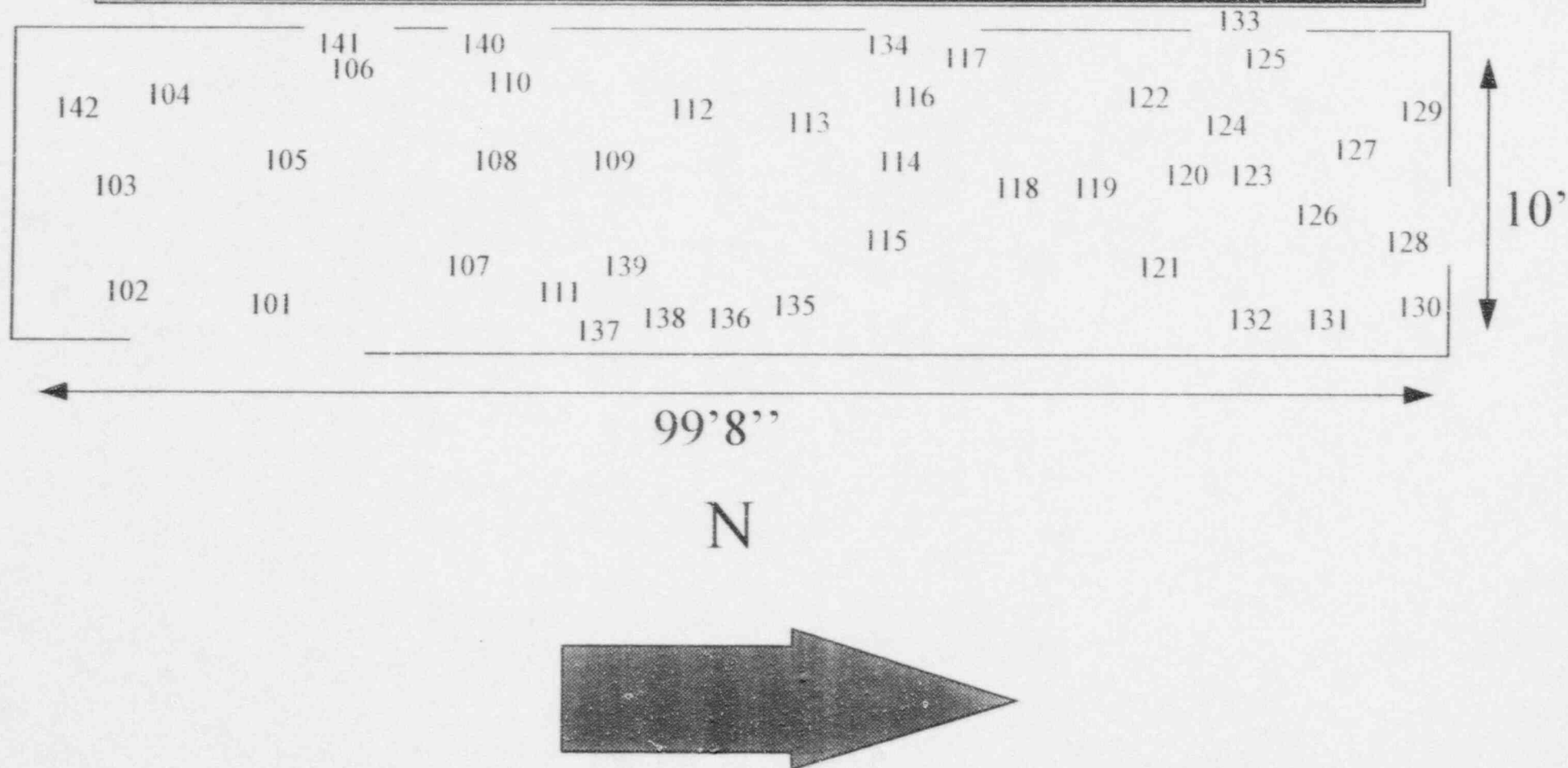
FEMA. Winchester, VA. Building 218, room 111  
January 30, 1997



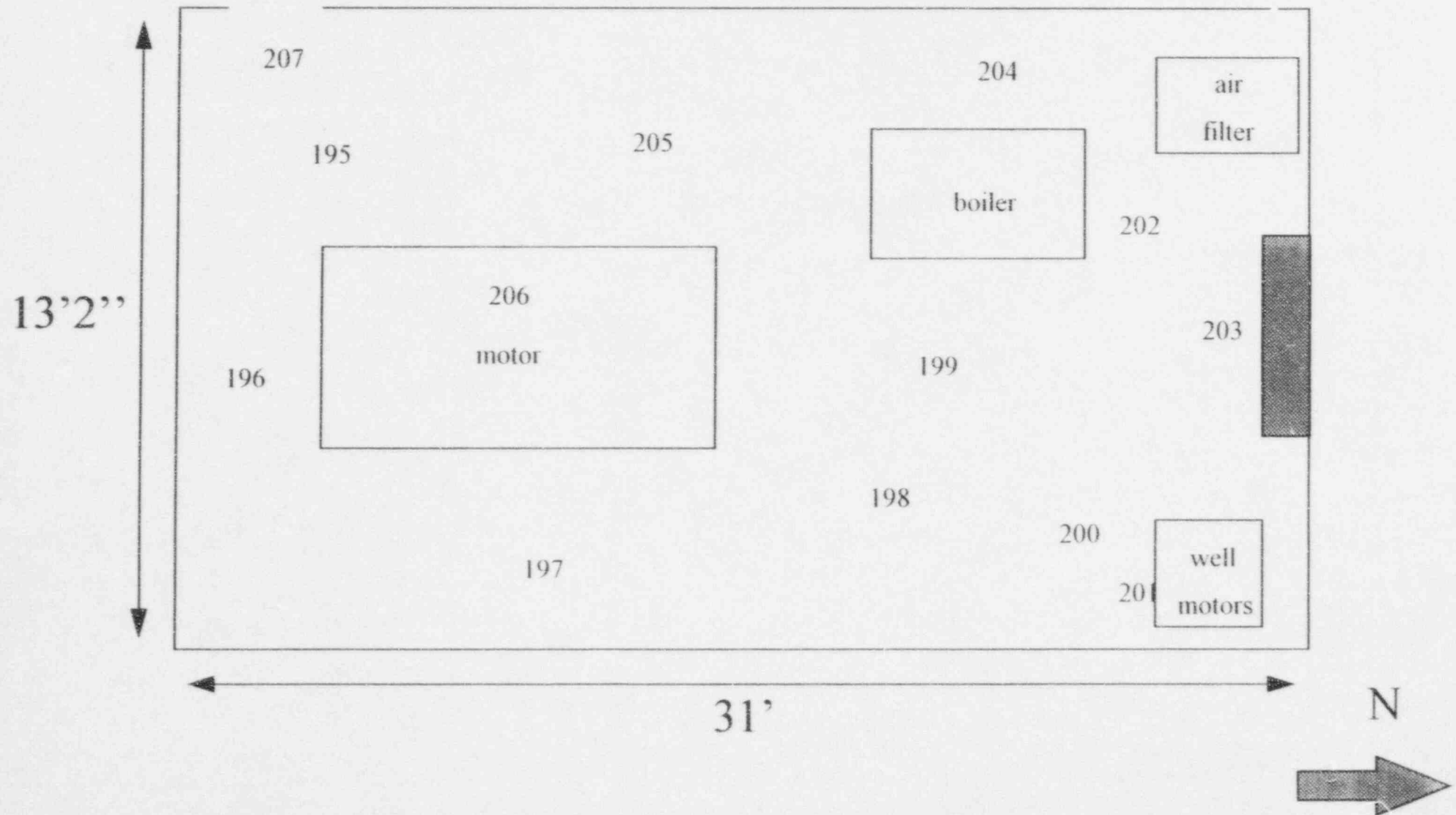


FEMA. Winchester, VA. Building 218, source bay hallway

January 30, 1997



FEMA. Winchester, VA. Building 218, boiler room  
January 30, 1997



# RADIOLOGICAL SURVEY DATA REPORT

LOCATION

ZONE: FEMA

SUBZONE: N/A

BUILDING: 218

ROOM: 108

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	1	dpm/100cm <sup>2</sup>	1380	dpm/100cm <sup>2</sup>	5	microR/hour
	( 1	cpm)	( 43	cpm)		
MDA	10	dpm/100cm <sup>2</sup>	1372	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	100.00	percent	20.11	percent		n/a
Probe area	100	cm <sup>2</sup>	15.5	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.117	cpm	2.150	cpm		n/a
MDA	2.391	dpm/100cm <sup>2</sup>	4.264	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
080	0	0.670	16.0	-2.554	-160.4
081	-1	-0.426	7.0	0.777	-224.6
082	-1	-0.426	7.0	-1.222	-32.1
083	-2	-0.426	12.0	-2.332	32.1
084	-1	-0.061	3.0	-0.333	32.1
085	0	0.304	7.0	-1.222	-160.4
086	0	-0.061	7.0	-1.666	-160.4
087	0	-0.426	3.0	-0.555	-160.4
088	-1	0.304	7.0	-1.666	-288.7
089	-1	0.304	12.0	-1.888	32.1
090	-1	-0.061	3.0	-0.333	417.1
091	-1	-0.061	3.0	-1.666	32.1
092	-1	-0.426	0.0	-1.222	-224.6
093	-2	-0.426	12.0	-0.777	-32.1
094	0	-0.061	12.0	-0.777	-673.7
095	-1	-0.426	16.0	-2.110	-96.2
096	0	-0.426	3.0	-2.776	-352.9
097	0	-0.426	7.0	-1.888	-96.2
098	0	-0.426	12.0	-2.554	32.1
099	-1	1.400	7.0	-1.888	160.4
100	0	1.035	3.0	-1.444	160.4
208	0	0.488	12.0	-2.118	-609.6

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
209	0	0.488	7.0	-2.563	-160.4
210	0	-0.244	3.0	-3.009	-737.9
211	-1	0.122	7.0	-1.003	-417.1
212	-1	-0.610	3.0	-2.118	-481.2

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION	ZONE: FEMA	SUBZONE: N/A
	BUILDING: 218	ROOM: 109

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	1	dpm/100cm <sup>2</sup>	1380	dpm/100cm <sup>2</sup>	5	microR/hour
	(1	cpm)	(43	cpm)		
MDA	10	dpm/100cm <sup>2</sup>	1372	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	100.00	percent	20.11	percent		n/a
Probe area	100	cm <sup>2</sup>	15.5	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.167	cpm	2.250	cpm		n/a
MDA	2.668	dpm/100cm <sup>2</sup>	4.364	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
176	0	-0.244	0.0	-1.449	32.1
177	0	-0.610	3.0	-0.557	-160.4
178	-1	0.122	3.0	-1.226	-96.2
179	-1	0.122	7.0	-2.340	737.9
180	-1	-0.610	0.0	-1.003	-224.6
181	-1	-0.244	7.0	-1.449	288.7
182	-1	-0.244	3.0	-1.672	481.2
183	-1	0.488	12.0	0.334	-352.9
184	0	0.488	3.0	-1.895	288.7
185	1	0.122	16.0	-1.003	224.6
186	0	-0.610	3.0	-0.780	-737.9
187	0	0.122	7.0	-1.895	96.2
188	-1	-0.244	3.0	-2.786	-673.7
189	-1	-0.610	3.0	-0.111	-737.9
190	0	-0.610	3.0	-1.672	-288.7

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION

ZONE: FEMA

SUBZONE: N/A

BUILDING: 218

ROOM: 110

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	1	dpm/100cm <sup>2</sup>	1380	dpm/100cm <sup>2</sup>	5	microR/hour
	(1	cpm)	43	cpm)		
MDA	10	dpm/100cm <sup>2</sup>	1372	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	100.00	percent	20.11	percent		n/a
Probe area	100	cm <sup>2</sup>	15.5	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.235	cpm	2.110	cpm		n/a
MDA	2.751	dpm/100cm <sup>2</sup>	3.904	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
001	-1	-0.124	7.0	1.065	96.2
002	-1	0.936	0.0	0.848	-352.9
003	-1	0.936	3.0	1.935	160.4
004	-1	0.230	3.0	0.630	96.2
005	-1	0.583	3.0	1.065	288.7
006	-1	-0.477	0.0	-0.239	-481.2
007	-1	-0.124	3.0	-0.457	288.7
008	-1	-0.477	3.0	-0.022	545.4
009	-1	0.230	3.0	0.413	-481.2
010	-2	-0.830	16.0	-2.196	-417.1
011	0	-0.124	3.0	-0.022	160.4
012	-1	0.583	0.0	0.630	160.4
013	-1	-0.124	3.0	-1.761	-545.4
014	-2	-0.124	3.0	1.500	-160.4
015	-1	-0.124	3.0	0.196	-288.7
016	-1	-0.477	0.0	0.196	-481.2
017	-1	-0.124	0.0	-0.891	-481.2
018	-1	-0.477	3.0	-1.544	288.7
019	0	-0.124	16.0	-0.891	-609.6
020	-2	0.230	7.0	-1.326	-32.1
021	-1	-0.477	16.0	-0.891	160.4
022	-1	-0.830	3.0	-0.457	352.9

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
023	-2	0.230	7.0	-0.891	-481.2
024	-1	0.230	7.0	-0.457	-417.1
025	-2	-0.477	7.0	-0.457	-32.1
026	-2	0.583	12.0	-1.978	-481.2
027	-1	-0.477	11.0	-0.674	-417.1
028	-1	-0.124	7.0	-0.891	-609.6
029	-1	-0.830	3.0	-0.891	-673.7
030	-2	-0.124	16.0	-0.022	-417.1
031	-1	-0.477	12.0	-0.457	-288.7
032	-2	-0.124	7.0	1.500	-96.2
033	-2	-0.124	3.0	-0.457	-609.6
034	-2	-0.477	12.0	-1.978	-609.6
035	-1	0.230	16.0	-1.109	-288.7
036	-2	-0.830	7.0	-0.891	-481.2
037	-2	-0.830	11.0	0.630	-609.6
038	-2	-0.830	11.0	0.196	-288.7
039	-2	0.583	7.0	-0.457	-802.0
040	-2	1.289	11.0	1.283	-737.9
041	-2	-0.124	7.0	0.413	-352.9
042	-2	0.583	11.0	0.413	32.1
043	-1	-0.477	7.0	-0.022	-96.2
044	-2	0.230	12.0	1.065	-288.7
045	-1	-0.477	3.0	-0.239	-352.9
046	-1	-0.830	7.0	0.196	-160.4
047	0	0.230	12.0	0.413	-224.6
048	-1	0.230	16.0	-1.544	-417.1
049	-1	-0.830	12.0	-1.109	-545.4
050	-1	0.230	11.0	-0.674	-481.2
051	-1	0.670	12.0	-0.555	-417.1
052	0	-0.061	3.0	-1.666	96.2
053	-1	-0.061	11.0	-1.666	-288.7
054	-1	1.035	12.0	-1.888	-288.7
055	-1	-0.061	16.0	-0.777	-352.9
056	-1	-0.426	7.0	-2.554	160.4
057	-1	-0.061	12.0	-1.222	-160.4
058	-1	-0.061	16.0	-0.333	-96.2
059	-1	-0.426	7.0	-2.332	-32.1
060	0	-0.061	7.0	-0.777	-224.6
061	-2	-0.061	12.0	-0.111	-224.6
062	-1	-0.061	12.0	-1.444	96.2
063	-1	-0.061	7.0	-0.333	-32.1



Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
064	-2	-0.061	12.0	-1.888	-417.1
065	-1	-0.426	7.0	-1.666	417.1
066	-1	-0.426	16.0	-1.888	-545.4
067	-1	-0.061	7.0	-0.333	-224.6
068	-1	-0.426	0.0	-2.111	-609.6
069	-2	-0.061	16.0	-0.555	-417.1
070	-1	-0.426	3.0	-2.776	-224.6
071	-2	-0.426	16.0	-1.444	-481.2
072	-1	0.304	7.0	-2.554	-866.2
073	-1	-0.061	0.0	-2.999	32.1
074	-1	0.304	12.0	-1.222	-224.6
075	-2	1.400	16.0	-1.666	160.4
076	-1	-0.426	12.0	-0.555	-160.4
077	-2	-0.061	3.0	-0.111	-224.6
078	-2	0.304	11.0	-1.888	-288.7
079	0	-0.426	7.0	-0.777	-288.7

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION

ZONE: FEMA

SUBZONE: N/A

BUILDING: 218

ROOM: 111

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	1	dpm/100cm <sup>2</sup>	1380	dpm/100cm <sup>2</sup>	5	microR/hour
	(1	cpm)	(43	cpm)		
MDA	10	dpm/100cm <sup>2</sup>	1372	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	100.00	percent	20.11	percent		n/a
Probe area	100	cm <sup>2</sup>	15.5	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.167	cpm	2.250	cpm		n/a
MDA	2.668	dpm/100cm <sup>2</sup>	4.364	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
143	0	-0.244	12.0	-1.895	352.9
144	0	-0.610	3.0	-2.340	288.7
145	0	0.122	12.0	-2.118	-352.9
146	0	0.488	7.0	-1.895	288.7
147	0	-0.244	11.0	-2.340	-224.6
148	0	0.122	7.0	-1.449	-417.1
149	0	-0.244	7.0	-2.340	-224.6
150	0	-0.610	7.0	0.334	32.1
151	-1	0.122	12.0	-1.895	-224.6
152	-1	-0.244	3.0	-2.118	-737.9
153	-1	-0.244	3.0	-1.895	-160.4
154	-1	0.488	3.0	-1.895	-224.6
155	-1	0.122	11.0	-2.786	96.2
156	-1	-0.610	3.0	-2.118	160.4
157	0	0.122	0.0	-2.563	-160.4
158	0	-0.244	0.0	-1.226	352.9
159	0	-0.244	0.0	-1.226	-32.1
160	0	0.488	0.0	-2.786	-545.4
161	0	-0.610	11.0	-1.003	288.7
162	0	1.585	7.0	-1.895	-96.2
163	0	-0.244	7.0	-1.226	32.1
164	-1	-0.610	12.0	-1.895	-96.2

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
165	0	0.488	7.0	-2.118	352.9
166	0	-0.244	3.0	-2.786	-930.4
167	-1	-0.610	16.0	-2.786	-96.2
168	-1	0.122	12.0	-1.449	-673.7
169	-1	0.122	0.0	-1.449	-32.1
170	-2	-0.610	3.0	-1.226	352.9
171	-1	0.488	11.0	-1.449	-32.1
172	-1	-0.244	7.0	-0.780	-96.2
173	-1	-0.244	11.0	-1.895	-545.4
174	-1	0.122	3.0	-0.557	-32.1
175	-1	-0.610	16.0	-0.334	-481.2

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION

ZONE: FEMA

SUBZONE: N/A

BUILDING: 218

ROOM: SBHW

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	1	dpm/100cm <sup>2</sup>	1380	dpm/100cm <sup>2</sup>	5	microR/hour
	(1	cpm)	(43	cpm)		
MDA	10	dpm/100cm <sup>2</sup>	1372	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	100.00	percent	20.11	percent		n/a
Probe area	100	cm <sup>2</sup>	15.5	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.167	cpm	2.250	cpm		n/a
MDA	2.668	dpm/100cm <sup>2</sup>	4.364	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
101	-1	0.488	3.0	-1.672	32.1
102	0	-0.244	12.0	-2.786	-224.6
103	0	-0.244	3.0	-1.895	160.4
104	-1	0.122	3.0	-1.449	-96.2
105	0	-0.610	12.0	-1.449	96.2
106	0	0.488	0.0	-1.672	-417.1
107	0	0.122	7.0	-1.449	-288.7
108	0	-0.244	3.0	-1.672	96.2
109	0	0.122	2.0	-2.118	-288.7
110	-1	-0.244	12.0	-1.672	-481.2
111	-1	-0.244	7.0	-1.672	-224.6
112	-1	-0.610	3.0	-1.003	-417.1
113	-1	-0.610	16.0	-0.557	-417.1
114	-1	-0.244	7.0	-1.003	-288.7
115	0	0.488	7.0	-3.232	-545.4
116	0	-0.244	7.0	-0.111	-802.0
117	0	-0.610	16.0	-1.226	352.9
118	1	-0.244	11.0	-3.232	-288.7
119	1	-0.244	3.0	-1.449	224.6
120	1	-0.244	0.0	-1.449	-288.7
121	1	-0.244	7.0	-0.780	-481.2
122	1	-0.610	3.0	-1.449	-224.6

# RADIOLOGICAL SURVEY DATA REPORT

LOCATION

ZONE: FEMA

SUBZONE: N/A

BUILDING: 218

ROOM: BOILER

## FIELD SURVEY

CONSTANTS	Alpha		Beta		Gamma	
BKG	1	dpm/100cm <sup>2</sup>	1380	dpm/100cm <sup>2</sup>	5	microR/hour
	(1	cpm)	(43	cpm)		
MDA	10	dpm/100cm <sup>2</sup>	1372	dpm/100cm <sup>2</sup>		n/a
Detector Efficiency	100.00	percent	20.11	percent		n/a
Probe area	100	cm <sup>2</sup>	15.5	cm <sup>2</sup>		n/a

## COUNTING LAB

BKG	0.167	cpm	2.250	cpm		n/a
MDA	2.668	dpm/100cm <sup>2</sup>	4.364	dpm/100cm <sup>2</sup>		n/a

All data on this report is background corrected. Negative values in the report are calculated activities that were below measured background.

Sample Point	Gamma	Alpha		Beta	
	Field (microR/hr)	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>	Lab dpm/100cm <sup>2</sup>	Field dpm/100cm <sup>2</sup>
195	0	-0.244	16.0	-1.672	-96.2
196	0	0.122	0.0	-0.111	-288.7
197	0	-0.244	7.0	-2.118	609.6
198	0	1.219	12.0	-1.672	224.6
199	0	-0.244	12.0	-1.226	-224.6
200	0	-0.244	3.0	-2.786	32.1
201	0	-0.244	3.0	-2.118	-160.4
202	0	-0.244	12.0	-0.111	-352.9
203	0	-0.244	7.0	-2.118	-673.7
204	-1	0.488	12.0	-0.334	224.6
205	-1	0.122	3.0	-1.003	-288.7
206	-1	-0.610	7.0	-1.672	32.1
207	-1	-0.244	3.0	-0.557	-802.0