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DRAFT A

DEACTIVATION, DECONTAMINATION & DECOMMISSIONING PLAN FOR BUILDING 889

BDP-889-00
REVISION: 0

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1.0 PURPOSE

Due to Rocky Flats Environmental Technology Site's (Site) mission change from a nuclear weapons production facility to environmental restoration, there is no further use or mission for the 889 building complex. The Department of Energy/Rocky Flats Field Office (DOE/RFFO) has selected Building 889 and Trailer T889 as a pilot Deactivation, Decontamination and Decommissioning (D^3) project to be included in the Rocky Flats Cleanup Agreement (RFCA).

The purpose of Building 889 and Trailer T889A D^3 activities:

- Remove the equipment in Building 889 and Trailer T889A and prepare the property for decontamination and demolition.
- Eliminate the building's baseline operating costs through the elimination of system surveillance, preventive maintenance, and corrective maintenance.
- Eliminate or reduce the risks to human health and the environment.
- Support the Idle Equipment Management Plan.
- Demonstration of the environmental regulatory process as it applies to D^3 projects.
- Close interim status Resource Conservation and Recovery Act (RCRA) units and portion of Operable Unit Number 9 (OU 9).
- Release of Trailer T889A for reuse at the site.

2.0 DEACTIVATION, DECONTAMINATION & DECOMMISSIONING PROCESS

2.1 Deactivation, Decontamination & Decommissioning Objectives

This section describes the objectives to be achieved during the D^3 of Building 889 and Trailer T889A.

D^3 of Building 889 and Trailer T889A will:

- Perform closure of RCRA Unit Number 40.
- Characterize of the building and facility equipment for asbestos, radiological, beryllium contamination and other hazardous constituents identified through process knowledge and sampling.
- Decontaminate Building 889 facility equipment, building structure, and Trailer T889A to unrestricted release levels or as low as technically achievable with current technology.
- Identify reusable equipment, decontaminate as necessary, and remove from the building for release to other uses.
- Dispose of non-reusable equipment as a solid waste or decontaminate for recycling or disposal.
- Deactivate building systems including ventilation, fire detection, fire suppression, Life Safety Disaster Warning system (LS/DW), electrical service, water and sewer.
- Repackage associated backlogged waste located outside and inside of Building 889.
- Repackage used contaminated High Efficiency Particle Air (HEPA) filters currently stored in a 20 foot trailer located north of Building 889.

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Upon completion of the deactivation of the building the structure will be razed. The building razing will be decontaminated as applicable under a separate demolition plan. The remaining concrete foundation will be excavated, and disposed as a solid waste or a low level radioactive waste depending on radiological contamination levels. The excavation will be filled with clean soil and reseeded.

The goals to be achieved during the performance of the pilot project are:

- Maintain personnel exposure As Low As Reasonably Achievable (ALARA).
- Minimize waste generation during the D3 process within the constraints of the available funding.
- Reduce associated system classification to the lowest level achievable.
- Decontaminate equipment and rooms to a minimum of low level waste criteria where practical, and as permitted by the available funding.
- Complete the project as cost effectively as possible.
- Focus the D3 activities in a logical manner to get the largest liability reduction for the funding that is allocated.

2.2 Building 889 Background Information

Building 889 was designed and used as the non-Perimeter Security Zone decontamination, size reduction, and repackaging facility and as a data communications hub site based upon its location in relationship between amplifiers in the 800 area, 400 area and the Protected Area (PA). Combustible materials, surplus equipment, and HEPA filters contaminated with low levels of Uranium 238 and Beryllium entered Building 889. Surplus equipment was decontaminated by steam cleaning for reuse at the site or for sale through Property Utilization and Disposal (PU&D). HEPA filters, combustible wastes,and unusable equipment were compacted, placed in crates and shipped offsite for disposal. The waste water from the steam cleaning operations was collected by two floor pits "A" and "B" which were permitted and are known as RCRA Unit 4. Process waste piping transferred the liquid waste to two underground concrete storage tanks. From the underground concrete storage tanks the liquid was pumped to tanker trucks for movement to Building 886. There it was stored until shipment to Building 374 for treatment. This method of liquid transfer was dicontinued when a pumping and piping system was installed in pits "A" and "B" to directely move the liquid waste to Building 374. The pit drain system was removed from service. No plutonium contaminated material was processed in this facility. The facility consists of three Radiologically Controlled Areas (RCA's), rooms 105, 108 and 106.

2.3 Existing Configuration

The D3 activities for Building 889 will be performed within the following areas:

- {Reference Rocky Flats Plant (RFP) drawing no.'s 14285-1, 14286-1 through 14286-9, 14287-1 through 14287-7, 14288-1 through 14288-4, and 14289-1 through 14289-3}

The original Building 889 was constructed in approximately 1968 as an equipment decontamination facility for uranium and beryllium contamination from the south side of the plant. It included the part of the facility that is

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enclosed by concrete masonry units (CMU). The original building (refer to Attachment 2: Building Floor Plan) included an office (presently room 100), locker room (presently room 102), mechanical equipment and storage room (presently room 104), hood room (presently the south half of room 108), four decontamination rooms (presently room 106 and the north half of room 108), filter plenum room (presently room 105), a covered but non-enclosed wash area (presently room 101), and a mezzanine area above the mechanical equipment room (presently room 200). The decontamination rooms had two floor ventilation exhaust pits which were piped into the filter plenum and then ducted through an exhaust fan to a 30 foot tall steel stack on the west side of the facility. Process waste floor drains were located in each of the decontamination rooms, exhaust pits, wash area, hood room, and mechanical equipment room. The process waste gravity flowed to a two compartment (1000 gallons each) underground holding tank located approximately 45 feet west of Building 889. The holding tank included two pumps which transferred the waste by pipeline to the plant process waste system. Utilities, including health physics vacuum, plant air, plant steam, and high pressure water, were supplied to each decontamination room. The mechanical equipment room contained a high pressure water system, a condensate pump, motor control center (MCC), lighting panel, transformer, chemical storage cabinet, fire sprinkler main, and alarm valves. The hood room included a line of B-boxes and a line of fume hoods. The mezzanine contained a heating unit operated from plant steam, a hot water storage tank, air compressor, health physics vacuum pump, and an exhaust fan for the B-box and fume hoods. The exhaust from this fan and also the vacuum pump was directed through the building filter plenum. The building was protected by a fire sprinkler system. The high pressure water system in the mechanical room has since been removed.

- (Reference RFP drawing no.'s 18818-1 through 18818-3.)

In 1969, a CMU wall was constructed to separate what is presently room 106 and room 108. Additionally, an exhaust fan was added in the mezzanine to remove air from the B-boxes and the fume hood. The air was exhausted through the filter plenum. The B-boxes, fume hoods, exhaust ductwork, associated mezzanine exhaust fan, and the CMU wall between room 106 and room 108 have since been removed.

- (Reference RFP drawing no.'s 23914-1 through 23914-2)

In 1974 room 101 was enclosed with CMU walls.

- (Reference RFP drawing no.'s 26377-X01, 26377-1, 26377-2, 26377-5, 26377-10, 26377-11, 26377-13, 26377-15, 26378-X01, 26379-10, 26378-4.)

In 1982 the process waste floor drains and inlet and outlet piping to the process waste holding tank were filled with a concrete/grout mixture and capped. The piping and pumps in the holding tank were removed. A new process waste drain system was installed in Building 889. The system consisted of concrete pits with sump pumps that were installed in the existing floor. Sump pumps were also included in the exhaust pits. The waste was piped to two tanks in Building 866.

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Additionally, a 75kva transformer, new MCC, and new panel board were installed in room 104 to provide power for the pumps (see RFP drawing 26379-10).

- (Reference RFP drawing no.'s 37576-X01 through 37576-X09, 37576-011, 37576-100 through 37576-108, 37576-200 through 37576-202, 37576-300, 37576-400 through 37576-402, 37576-500 through 37576-503, 37576-600 through 37576-608)

After the concern with beryllium disease was heightened in the mid 80's, each facility that was involved with beryllium was required to include facilities to protect personnel. In approximately 1987, rooms 109, 110, and 111 were built on the south side of Building 889. These rooms included new shower and locker facilities. The existing office, room 100, became an airlock, and the existing shower and locker area, room 102, was modified to be a lunch/break room. An office was located in room 101A. A mezzanine was added above the office to provide room for a heating/cooling unit and a multi-stage, bag in-bag out HEPA filter exhaust plenum for the exhaust from the new addition, office area, and lunch/break room. A new stack was built on the roof to discharge the exhaust from this unit. The heating unit was operated from plant steam.

- (Reference RFP drawing no.'s 37599-X01, 37599-01)

In approximately 1987, a waste baler for compacting low level waste was installed in room 108. Additionally, a drum crusher that had previously been installed in room 108 was relocated within the same room. The drum crusher was used to crush HEPA filters within the drum and an adapter could be added to crush the drum.

- (Reference RFP drawing no.'s 38158-X01 through 38158-X05, 38158-001 through 38158-002, 38158-006 through 38158-008, 38158-011 through 38158-016, 38158-021 through 38158-032, 38158-036 through 38158-039, 38158-041 through 38158-060, 38158-900, 38158-901)

In approximately 1987, a 47 feet by 51 feet addition, also known as room 112, was constructed on the east side of Building 889 . The purpose of the addition was to house a new heating/cooling unit and a multi-stage, bag in/bag out HEPA filter exhaust plenum that would solve air balance problems in the existing facility. The units were placed on a mezzanine and the plenum air was exhausted through a stack on the roof of the addition using two exhaust fans. The heating unit uses plant steam. The new ductwork for both the exhaust plenum and the supply air was contained within room 112. Additionally, new tie-ins to the plant steam supply and condensate return systems were constructed.

- (Reference RFP drawing no.'s 38591-X01 through 38591-X07, 38591-201 through 38591-205, 38591-301 through 38591-302, 38591-501 through 38591-510, 38591-601 through 38591-603, 38591-701 through 38591-706)

The problem with the new exhaust system was that contamination was drawn from the existing decontamination rooms into the building addition when the existing roll-up or folding doors were open between the two areas. To solve this

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problem an additional multi-stage HEPA filter plenum was constructed underneath the mezzanine to exhaust the air from the original Building 889 decontamination rooms. This filter plenum would replace the existing building HEPA filter exhaust system. Two exhaust fans and an exhaust stack were added on the north side of the addition for the plenum. During operational start-up testing it was determined that the deluge system for the newest filter plenum did not provide adequate coverage to the upper section of the filters. The deluge system was redesigned but the Department of Energy decided not to provide any further funding for the project. Consequently both filter plenums and the air handling unit have never been operated.

The heating unit in room 200 was shut down after it was determined that the room 105 filter plenum was operating poorly and a negative pressure could not be maintained in the contaminated areas of the original building while the heating unit was operating. Unit steam heaters have been installed in each room to provide heat for the facility. No drawings could be located to detail the installation of these heaters.

- (Reference RFP drawing no.'s 38350-X01, 38350-X03, 38170-404, 26379-X01)

In approximately 1987 the sump pumps in the exhaust pits were locked out/tagged out and the new concrete pits and pumps were removed. The process waste piping from Building 889 was capped inside of Building 866 in the early 1990's. No process waste is permitted to exit Building 889 at this time.

2.4 Deactivation, Decontamination and Decommissioning Scope

The following describes the D3 scope for the systems associated with Building 889.

Project Plans and Procedures

- Development of a radiological characterization plan for identification of worker radiological hazards. This will aid in the evaluation of waste types (solid waste, low level waste, TRU-waste, or a mixed waste) and volumes requiring decontamination and disposal.
- Development of a Health and Safety Plan specific to the safety hazards that could be encountered during the deactivation of systems in Building 889.
- Development of a Beryllium sampling plan for the identification of worker hazards and to aid in equipment and facility decontamination to allow release for unrestricted use.
- Implementation of the site procedures for the assessment of asbestos in buildings at the site. The information obtained by sampling will identify the asbestos forms and volumes in Building 889 and Trailer T889A. This information will be used in the development of the building demolition plan.

Telecommunications

The Local Area Network (LAN) data communications hub, used for unclassified data as well as the encrypted Secure Local Area Networks (SLAN) for Building 460 and the Protected Area (PA), is currently located in Building 889. The LAN system is currently located in Building 889. To maintain the current functionality of the site Broadband LAN during D3 activities a new LAN

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system that has a physical path redundancy wil be installed. This new LAN system will provide a minimum of network down time during the transfer of communications from the old LAN pathway. This new LAN bypass will ultimately replace the system located in the building.

Upon completion of the deactivation phase of D^3 activities, Room 112 will be left in a condition suitable for industrial type usage, but may require modifications (i.e. addition of an HVAC and exhaust system) to be used on a daily basis. Rooms 104, 106, 108, and 200 will be in a safe, stable configuration for non-routine entry. Waste generated by these activities will be handled in accordance with site procedures, The Colorado Department of Public Health and the Environment, and the Environmental Protection Agency.

Deactivation Mechanical Engineering
The following mechanical deactivation will be performed for Building 889.

Room 112

1. Remove 100 feet of process waste piping (1 1/2"-PW-103-PA) from the process waste pit in room 112 to the tie-in point to the 2" process waste line in room 101 (see RFP drawing. 38158-036). The plenums presently drain to the pit. The piping was never used for process waste.

Room 108

1. Remove the drum crusher (approx. 40" diameter x 12' high).
2. Remove the prefilter housing (26"x26"x14") and all exhaust ductwork in the room (34' of 14" diameter and 18' of 18" diameter).
3. Remove the baler/compactor (6' high x 5' wide x 6' long).
4. Remove the health physics vacuum piping from the main header to the drum crusher, baler/compactor, and the exhaust prefilter housing (approx. 8' of 3/4" pipe).
5. Remove the supply air ductwork from the HVAC unit in room 200 (8' of 40x16, 20' of 30x16, 32' of 20x16, 4' of 20x10', 12' of 18x18, and 4 diffusers).
6. Remove the quick disconnects, valves, and piping (approx. 210' of 3/4" pipe) for the utility connections in the room (ie. health physics, plant air, steam, and former high pressure water system).

Room 200

1. Remove HVAC unit (3' high x 8' wide x 8' long, and 12' of 60x36 ductwork). The HVAC unit in room 200 is not operating because the existing filter plenum cannot maintain a negative pressure while it is operating (according to John Lyons). Steam heating units were installed to keep the fire sprinklers from freezing. A new building exhaust system will be required if personnel are to occupy the facility.
   Verify the existing room unit steam heaters will be adequate for freeze protection.

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2. Remove the health physics vacuum pump, vacuum piping through out the building, and exhaust piping (100' of 3/4" pipe and 6' of 18" diameter. duct). Cap the exhaust piping at the tie point to the exhaust ductwork (reference RFP drawing no. 38591-501).
3. Remove the health physics vacuum 1 1/4" exhaust piping that is presently capped off in room 104 but extends into the plenum above the plenum door.

Room 105

1. Remove the hepa filters (24x24x12, 4 high x 3 wide x 2 deep, total of 24 filters).
2. Remove the filter bank framing (7' wide x 9' high).
3. Remove the first and second stage filter plenum doors (3' x 7').
4. Remove the two motorized exhaust dampers (20x20).
5. Blank-off the two 20x20 exhaust ducts.

Room 106

1. Remove the quick disconnects, valves, and piping (126' of 3/4" pipe) for the utility connections in the room (ie. health physics, plant air, steam, and former high pressure water system).
2. Remove the supply air ductwork (52' of 20x10, 23' of 20x6, 18' of 18x18, and 6 diffusers) from the HVAC unit in room 200.
3. Remove the prefilter housing (24"x24"x24") and all exhaust ductwork (25' of 32x12, 60' of 9" diameter.) in the room.
4. Remove the sump pumps and process waste piping (75' of 2" pipe) from the exhaust pits.
5. Remove the welding hood and ductwork (45' of 8" round, 32' of 12" round, and 3' of 12" round duct).

Exterior of Building

1. Remove the plenum steel exhaust stack (28" round x 30' high) on the west side of the building. The stack foundation slab will be removed during the demolition phase of the pilot project.
2. Remove the plenum exhaust fan and ductwork (1' of 25" round duct) on the west side of the building.
3. Remove the health physics vacuum piping (10' of 3/4" pipe) to the exhaust stack.

Deactivation Electrical Engineering

The following electrical deactivation will be performed for Building 889. Building 889 currently provides electrical power to Building 884. Upon completion of the electrical deactivation activities in Building 889, electrical power will require redistributed prior to Building 889 being demolished. The electrical service for Building 884 currently comes from Building 883 through Building 889. A deactivated 5 KVA, 120/240 volt pole mounted transformer (XFMR) located north of Trailer 690 will be used as the new source of electrical power for Building 884. This unused electrical circuit will be reactivated to provide the electrical power for Building 884. The new circuit will be routed from the pole mounted XFMR to a steam line post fitted with a support device for aerial service. The electrical power line will then be routed to the existing electrical building service head.

The following electrical deactivation will be performed for building 889.

Room 112

1. Remove the sump pump and the level indicator from the process waste pit.

Room 108

1. Remove the drum crusher disconnect switch and panel box, conduit, and conductors back to the MCC.
2. Remove the overhead hoist, cord reel, disconnect switch and panel box, conduit, and conductors back to the drum crusher disconnect switch.
3. Remove the baler/compactor disconnect switch and panel box, conduit, and conductors.

Room 104

1. Remove fire alarm panel FPO-028. This panel was intended to cover two zones: the filter plenum in room 105 and heat detectors placed in the two exhaust pits in room 106. Fire protection engineering has previously indicated that the alarm panel should be decommissioned (see Bruce Campbell correspondence BGC-105-94).

Room 105

1. Remove filter fire detection equipment.
2. Remove filter instrumentation.
3. Remove the electrical receptacles and lighting.

Room 106

1. Remove the overhead hoist, cord reel, disconnect switch and panel box, conduit, and conductors.
2. Remove the level alarm instrumentation for the exhaust pits.
3. Remove the power to the exhaust pit pumps.

Deactivation Structural Engineering

The following structural deactivation will be performed in Building 889.

Room 112

1. Remove, crate, and prepare for disposal, all file cabinets (most of the cabinets are fire storage units with an asbestos lining). Remove and prepare for storage all miscellaneous drums, and misc. equipment that are being stored in room 112, but are not part of the filter plenum. The filter plenums and air handling unit shall remain.

2. Remove and dispose of the monorail beam shown on the roof plan on RFP drawing 38158-013 and 38158-014.

Room 108

1. Remove and prepare for storage all miscellaneous equipment,

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cabinets, tables, and ladders.

2. Remove and/or cut flush all wall brackets that are not in use. This material shall be disposed of.
3. Cut off all equipment anchor bolts flush with concrete floor surface.

Room 105

1. Dismantle room 105 from the building. Close the opening from room 105 to room 104 with masonry block.

Room 106

1. Remove and prepare for storage all miscellaneous equipment including: cabinets, tables, bench grinder, gas cylinders, toolboxes, and ladders.
2. Blank-off the exhaust pits with steel plates.
3. Remove and/or cut flush all wall brackets that are not in use. This material shall be disposed of as appropriate.

3.0 ENVIRONMENTAL COMPLIANCE AND WASTE MANAGEMENT

- The Waste Stream and Residue Identification and Characterization (WSRIC) for Building 889 will be upgraded to include D^3 activities.
- Compliance to standing order Number 22, Cessation of Process, Activities, and Operations That Generate Land Disposal Restricted (LDR) Mixed Wastes, PADC-94-01541.
- Compliance to standing order Number 24, Initial Response Actions to Releases of Hazardous Chemicals, Hazardous Materials, Hazardous Substances, Hazardous Wastes, or Unknowns, PADC-94-01476.
- The Federal Facility Agreement and Consent Order between the State of Colorado, the Environmental Protection Agency, and the United States Department of Energy, dated January 22,1991, will be applied to site D^3 activities as applicable.
- A National Environmental Policy Act (NEPA) review will be conducted.
- An Air Pollution Emission Notice (APEN) review for both non-radionuclide air pollutant emissions and radionuclide air emissions will be conducted.
- A National Pollution Elimination Discharge Elimination System (NPDES) evaluation will be performed.
- The RCRA Unit 40 as listed in the Part B RCRA permit application will be closed as required to support the D^3.
- Chemicals stored in Building 889 will be removed and processed as excess chemicals.
- The disposition of inventoried equipment, equipment reservoirs, and equipment containing oils, solvents, coolants, etc. in catch pans, drip pans, floors, etc. will be handled in accordance with the Management Plan for Idle Equipment, 94-MP/IE-0017, Revision 0.
- Asbestos contaminated material will be handled in accordance with

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the Toxic Substance Control Act (TSCA).

- Equipment and material found to be contaminated with hazardous and or radioactive substances will be managed in accordance with RCRA and radiological control requirements.
- Beryllium contaminated materials will be handled in accordance with the site Beryllium Control Program, 4-15310-IHPM-5.2, Revision 0 and the Beryllium Protection procedure, 1-15310-HSP-13.04, Revision 0.
- Waste generated from the D^3 of Building 889 will be handled in accordance with the following site procedures:
  1. 5-23000-WRP-WO-1100- Solid Radioactive Waste Packaging inside the PA.
  2. 1-C80-W01102-WRT- Waste/Residue Traveler Instructions
  3. 1-10000-WRM-WO-4034-Radioactive Waste Packaging Requirements
  4. Building 889 Waste Stream Residue Identification and Characterization Book
  5. 5-23000-WP-1201-Waste and Environmental Management System Container Inventory, Tracking and Control
  6. 1-10000-WRM-WP-1027-Non-radioactive Waste Packaging
  7. 1-C81-HWRM-23-Backlog Waste Reassessment
- Effort will be made to reduce chemical, asbestos, beryllium, and, radiological contamination levels to meet low level waste criteria as feasible.
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4.0 HEALTH & SAFETY REQUIREMENTS

The Health and Safety (H&S) Requirements for the D^3 of Building 889 include Industrial Hygiene, Occupational Safety and Health, Radiological Protection, ALARA reviews, and Fire Protection. These requirements are defined in the Task Specific Health and Safety Plan, Environmental Restoration Programs Division, Phase I, D^3 Pilot Project #5, Revision 0, Draft B, November 1994. In addition the project health and safety plan, existing RFP policies and procedures will be implemented throughout the D^3 process to ensure worker safety. These procedures include but are not limited to the Health and Safety Practices Manual, Radiological Operating Instructions, Radiological Control Manual and Integrated Work Control Program (IWCP). A safety screen and a ALARA review will be performed on each IWCP package prior to the start of the work associated with the package.

5.0 SITE USE REVIEW BOARD (SURB)

The SURB has reviewed the use for Building 889 and concluded that there is no future use identified, and that Building 889 could be D^3. Refer to SURB approval of Building 889 D^3 Pilot Project Proposal, Correspondence Control Number 04225RF94.

6.0 DEACTIVATION, DECONTAMINATION AND DECOMMISSIONING ORGANIZATION AND RESPONSIBILITIES

The deactivation responsibilities during the deactivation process are indicated in the Building Deactivation Process Guidance document 2-M44-ADM-001. The decontamination and decommissioning responsibilities during the D^3 process are indicated in the D^3 Draft Implementation Plan (dated, August 19, 1994). The Building 889 D^3 project organization can be found in attachment 1.

7.0 TRAINING

The existing RFP training and qualification program shall be adhered to for the D^3 of Building 889 and is adequate to support this program.

8.0 SCHEDULE

See attachment 5, Work Activity Schedule.

9.0 FUNDING AND COST ESTIMATE

Work Package Number 13003 describes the funding requirements for the deactivation work that occurred in Fiscal Year (FY)1994 and that scope that will occur in FY 1995 to support D^3 of Building 889. The cost estimate for the scope of work in FY 1995 is approximately $1500K. The fund source for this activity is EW-20.

10.0 STANDARDS REVIEW AND READINESS ASSESSMENT

A review of the standards applicable for D^3 activities in Building 889 will be performed. The review will address the degree of uncertainty and hazards associated with the planned activities and determine whether existing plant infrastructure is adequate to address necessary and sufficient standards applicable to the activity. A readiness assessment checklist will be developed and used to ensure required elements of the deactivation plan are complete and ready to support start of work to support the activity.

11.0 SAFEGUARDS AND SECURITY

The existing safeguards and security requirements for the 800 Area and Building 889 will be adhered to and are adequate to support D^3.

12.0 SAFETY ANALYSIS DOCUMENTATION

D^3 activities in Building 889 will not require an Unreviewed Safety Question Determination (USQD) in accordance with procedure 1-C11-NSM-04.05. Building 889 was considered in the site Safety Analysis Review (SAR) Project, Phase I Summary Report. From the SAR, Building 889 was determined to be radiological facility but not a nuclear one. Under this determination, DOE Order 5480.23, Nuclear Safety Analysis Reports, is not applicable and there is no nuclear hazard category applicable to Building 889.

13.0 REFERENCES

- Specification 02070 - Demolition
- Specification 02075 - Asbestos Removal
- Drawing 30889-001-03G Architectural Removal Plan
- Drawing 30889-001-03G Architectural Removal Sections and Details
- Drawing 14287-X002 Heating and Ventilation Plans and Details
- Drawing 14287-X003 Piping Plans and Details
- Drawing 14287-007 Piping Diagrams
- Drawing 26378-4-01C Process Waste Systems
- Drawing 38158-X036 Piping Plan
- Drawing 38158-X037 Partial Plan and Sections
- Drawing 38158-X038 Piping Sections
- Drawing 38591-X502 HVAC Sections and Details
- Drawing 31889-10J-02H Fire Security and Junction Box Layout
- Drawing 14288-4 Electrical Details
- Drawing 26379-10 Electrical Plans and Details
- Drawing 14288-1 Electrical Plot Plan
- Drawing 14288-2 Electrical Plans and Details
- Drawing 38170-703 Process Waste Leak Detection
- Drawing 37599-01 Low Level Waste Bailer
- Drawing 25719-28 Fire Detection Plans
- Drawing 25719 Fire Detection Schematics
- Drawing 25719-13 Fire Detection Mounting Detection
- Drawing 31213-546-M Pyrotronics Panel
- Drawing 38158-049 Decon Facility Miscellaneous Schedule
- Drawing 38158-043 Power Panel
- Drawing 38158-048 Miscellaneous Details
- Drawing 35889-101-01D 480 Voltage One Line
- Drawing 35889-200-01A 480 Voltage One Line
- Drawing SK989646-401 Piping Isometric Building 889 Stripout

- Drawing SK989646-402 Piping Isometric Building 889 Stripout
- Drawing SK989646-403 Piping Isometric Building 889 Stripout
- Drawing SK989646-404 Piping Isometric Building 889 Stripout

14.0 ASSUMPTIONS

- The Deactivation Activity Control Envelope process identified in procedure 2-M42-ADM-001 will not be applied to the D^3 activities. Existing Site infrastructure programs and procedures are adequate to provide the necessary and sufficient standards for the activities to be conducted.
- Two crews of RFP dedicated craft workers (electricians, alarm technicians, pipefitters, painters, and carpenters) will be made available for continuous work on Building 889 D^3 activities. Other crafts, will be provided as required for continuous work on Building 889 and Trailer T889A.
- The cabinets, cabinet contents, and furniture will be removed by building operations personnel.
- Three Radiological Control Technicians (RCT) will be assigned full time to support D^3 activities.
- All equipment that can not be released for unrestricted use will be targeted as low level waste except for the exhaust ducts and HEPA filter holders, which will be targeted as tru-waste. The final determination will be made by the RCT field counts or for large items, the drum/crate counter will be utilized. (This assumption is for radiological levels only and does not consider hazardous waste classifications.)
- The RCRA decontamination activities for Unit 40 will take place during the deactivation phase of D^3 activities. The removal of the RCRA Unit will take place during the demolition phase of D^3 activities.

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ATTACHMENT 1
Building 889 Project Organizational Flow Chart

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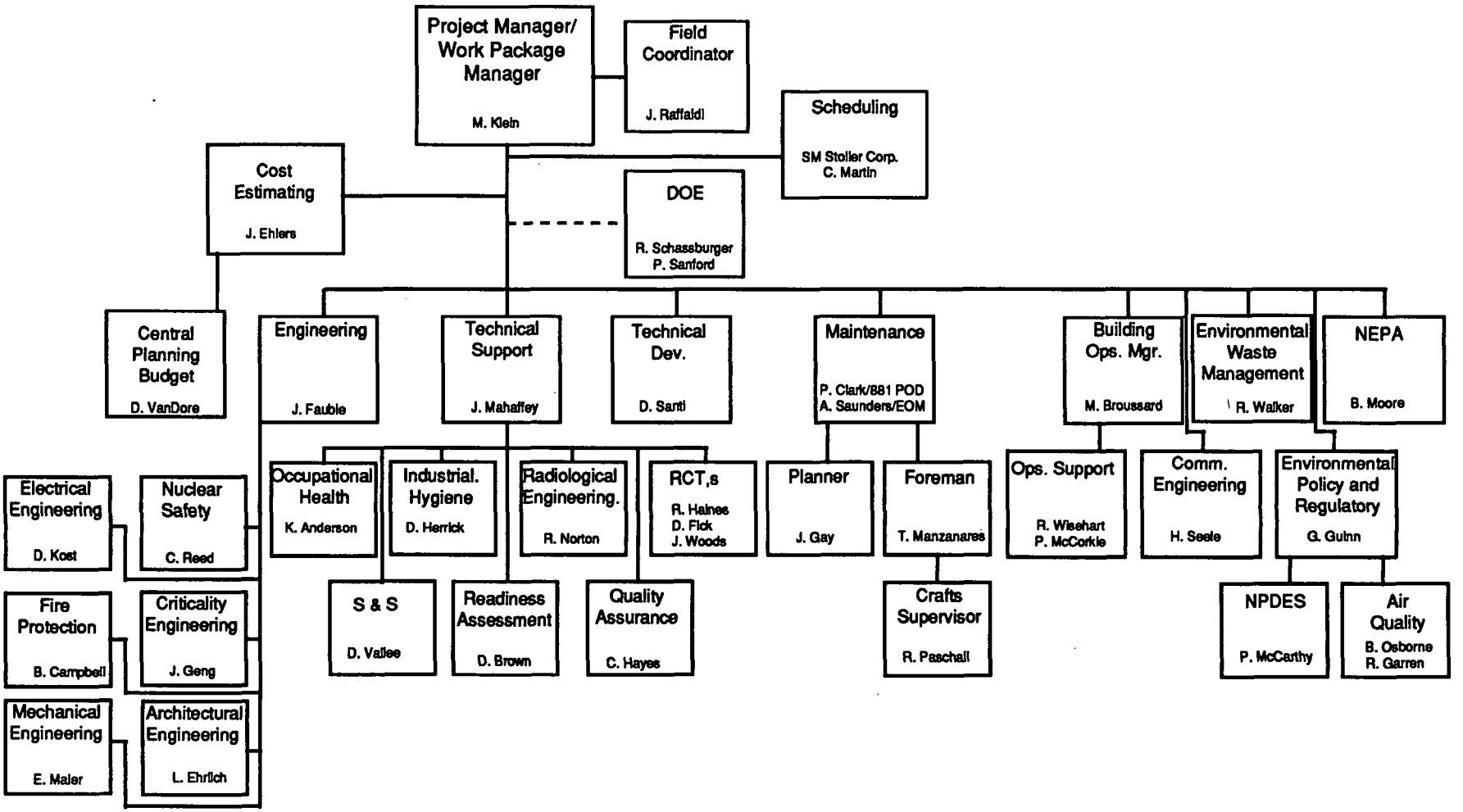
BUILDING 889 PROJECT ORGANIZATIONAL FLOW CHART



March 28, 1995

ATTACHMENT 2
Building 889 Floor Plan

ATTACHMENT 3
Beryllium Sampling Plan

BERYLLIUM SAMPLING PLAN

DECONTAMINATION & DECOMMISSIONING PROJECT #5
BUILDING 889

PREPARED: JANUARY 4, 1995

BY: D.V. HERRICK

EG&G ROCKY FLATS, INC.

DVH-002-95

REVISION 0

Industrial Hygienist

Peer Reviewer

IH Manager

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1. INTRODUCTION

A beryllium sampling plan was developed to characterize the levels of beryllium contamination in Building 889 in support of the D&D #5 Project. This characterization will be accomplished by conducting a two-part survey. One part is an equipment surface sample survey and the other is a building surfaces survey.

2. BUILDING SURFACE SURVEY

A surface sampling survey will be conducted which uses the existing radiological survey strategy as a foundation (see "Baseline Radiological Characterization Survey - Building 889", November 30, 1994, by R.W. Norton and D.A. Russell). The Norton and Russell radiological survey strategy was developed using DOE Office of Environmental Guidance document Environmental Implementation Guide for Radiological Survey Procedures. Their strategy basically classifies surfaces of the building into three categories, depending upon the likelihood for radiological contamination.

The three categories are Risk Levels I through III, with Risk Level I surfaces being those which have the greatest potential of contamination based upon history of operations. Risk Level I areas will be divided into 1-meter grids, Risk Level II areas into 2-meter square grids, and Risk Level III areas into 3-meter square grids. Each grid will have five smears collected at random points for radiological evaluation.

For the Beryllium Sampling Program, one smear will be collected from one of the random sampling points per every four grids (or one out of every 20 radiological smears), but in no case will less than 10 smears be collected per room. Based on the numbers presented in the Norton-Russell document, this will result in more than 228 Beryllium smears collected from the building surfaces. Beryllium smears will be collected using Whatman 4 paper, to be analyzed for beryllium following counting on the Eberline and Tennelec smear counters for radioactive contamination.

Once the samples have been collected they shall be placed in glassine bags and labeled with the sample number. The sample number and detailed description of the surface sample shall be documented on the RFP beryllium smear sample log. A copy of this sample log is contained in Appendix 1. The smear samples shall be counted to determine the removable alpha and beta radiological levels. This information shall be documented on the beryllium smear sample log. The alpha and beta levels shall be utilized in determining to which laboratory the samples shall be sent. All samples with less than 100 disintegrations per minute (dpm) per 100 square centimeters alpha and less than 200 dpm per 100 square centimeters beta shall be sent to Building 123 laboratory for analysis. All samples greater than 100 dpm per 100 square centimeters alpha or greater than 200 dpm per 100 square centimeters beta shall be sent to Building 559 laboratories for analysis.

The application of this strategy is consistent with the basis of the proposed methodology in the plantwide "Beryllium Baseline Sample Plan", dated July 15, 1994, by L.A. Holwager. It also enables the use of a statistical analysis approach that will provide a 95% confidence level that

the distribution of the analytical values represent at least 98% of the surfaces of the room, as presented by Statistical Applications (Appendix 1 of the plant-wide Beryllium Baseline Sample Plan). Statistical Applications' methodology is presented in two documents: "Proposed Statistical Methodology For Sampling and Analysis In Support Of Beryllium Surveys", report number SA/94-003 published January 31, 1994; and "Addendum To The Statistical Applications Report SA/94-003 Proposed Methodology For Sampling and Analysis In Support Of Beryllium Surveys", report number SA/94-005 dated May 17, 1994.

The sample results will be compared to the RFP internal standard of 25 micrograms per square foot (ug/ft^2) in accordance with the proposed statistical methodology discussed earlier. Please note that 2.7 micrograms per 100 square centimeters is equivalent to 25 ug/ft^2.

3. EQUIPMENT

Equipment to be sampled within the building will essentially be chosen according to professional judgement. The factors which will be taken into consideration for selecting a piece of equipment for sampling include:

- Whether it is in an area that is likely to have involved beryllium.
- Whether it was part of a process that is likely to have involved beryllium.
- Whether it can be logically grouped with other pieces of equipment.
- Its relative cleanliness.

Equipment will be sampled using the same collection method as for the building surfaces. The number of smears (samples) collected on each piece of equipment will be dependant upon the : 1) the amount of surface area of the equipment, 2) the number of discrete functional areas that the equipment has (and the amount of surface area of the functional areas). Thus, a relatively small piece of equipment (e.g. - a vacuum cleaner) may have only one sample collected from its surface. In all cases, the equipment will be sampled at locations that would have had the greatest likelihood for contact with beryllium. In the case of a vacuum cleaner, this would be the bottom of the collection vessel. In the case of a compactor, the compaction chamber would be sampled, but other areas, such as the motor compartment, might also be sampled.

Pieces of equipment in areas in which beryllium use was not suspected will be grouped together logically and a single sample will be collected from the piece most likely to have had any contact with the materials from the process areas or is visibly the dirtiest. For example, in the locker rooms the piece of equipment to be sampled may include the floor of one of the locker cabinets because it is the surface most likely to have come into contact with any beryllium, if any was ever tracked into the room. In no case will more than 20 pieces of equipment be grouped together and represented by a single sample. In areas in which beryllium use or contamination is suspected, the number of subjects in a grouping will likely be smaller.

Individual pieces of equipment on which contamination is found above acceptable limits will be held for further sampling to better evaluate the extent of contamination, or will be decontami-

nated and resampled. In the case of a group sample indicating contamination, all of the equipment in the grouping will be assumed to be contaminated and resampling will be performed accordingly. Because of the smaller number of smears collected from equipment, the surface contamination of beryllium will need to be below one-half of the Plant standard, or less than 12.5 $\mu g/ft^2$, for unrestricted release.

APPENDIX 1

BERYLLIUM SMEAR SAMPLE LOG

RFP BERYLLIUM SMEAR SAMPLE LOG

Page ___ of ___

NAME: _____ DATE: _____

LABORATORY: _____

DATE OF ANALYSIS: _____

SAMPLE NUMBER	BUILDING	ROOM	DESCRIPTION	AREA SURVEYED	ug per SAMPLE	ug/ft2 or ug/100 cm2	ALPHA dpm	BETA dpm

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ATTACHMENT 4
Baseline Radiological Characterization Survey

BASELINE RADIOLOGICAL CHARACTERIZATION SURVEY

BUILDING 889

NOVEMBER 30, 1994

SUBMITTED BY:

DENNIS A. RUSSELL

RICHARD W. NORTON

RADIOLOGICAL ENGINEERING

U/NU

REVIEWED FOR CLASSIFICATION/UCNI
By N. A. Lourge
Date 3/1/95

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I. EXECUTIVE SUMMARY

Decontamination & Decommissioning (D&D) Management requested Radiological Protection Environmental Restoration & Waste Management (RPER&WM) to prepare a survey plan to allow the demolition of Building 889. This plan will be broken down into two phases. In phase 1, detailed in this document, the entire building will be divided into grids and surveyed to provide the baseline characterization of the building. Phase 2 will consist of the final surveys to determine which rooms/building materials can be released and which rooms/building materials will be disposed of as low level waste. The phase 2 plan will also provide for the necessary in-process surveys for the demolition.

-The phase I plan outlined in the following pages will ensure that sufficiently detailed radiological information will be obtained to allow preparation of the Integrated Work Control Packages (IWCPs) related to the D & D of Building 889.

-Building 889 has an extensive amount of permanently installed equipment which will be removed prior to demolition of the building. This survey will provide the data necessary to radiologically characterize the building prior to beginning ripout activities.

-Portions of the building have not been used for any radiological work and therefore will be released for unrestricted use based on the required surveys while other portions have been used extensively for many years and therefore may not be releasable for unrestricted use.

-This baseline characterization survey will give adequate information to determine the degree of radiological controls that will be required to perform ripout activities.

II. BACKGROUND

The purpose of this radiological characterization survey is to evaluate the radiological contamination that maybe presently affixed to the interior surfaces of the building. This plan will facilitate later decisions on what radiological controls will be necessary for ripout activities.

The primary source document used by Radiological Engineering for the development of the survey methodology was the Environmental Implementation Guide for Radiological Survey Procedures [Draft of November 1992] developed by the Department of Energy Office of Environmental Guidance.

The primary source document used to develop release criteria was DOE Order 5400.5, "Radiation Protection of the Public and the Environment" and DOE Order 5480.11, "Radiation Protection for the Occupational Worker".

The primary source documents used to control exposure to beryllium are Rocky Flats Plant 1-15310-HSP-13.04, Revision 0, "Beryllium Protection", 4-15310-IHPM-

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5.2, "Beryllium Control Program", and 4-I20-IHPM-5.2.1, "Beryllium Activity Swipe Tester (BeAST)".

III. HISTORY OF BUILDING 889

The original Building 889 was constructed in approximately 1968 as a decontamination facility for uranium and beryllium equipment. See Figures 1 and 2 for location of rooms. The original building included an office (presently room 100), locker room (presently room 102), mechanical equipment and storage room (presently room 104), hood room (presently room 108), four decontamination rooms (presently rooms 106 and 108), and a mezzanine area (room 200) above the mechanical equipment room. The original building was enclosed by concrete masonry units (CMU). The fume hoods and B-boxes that were installed have been removed.

In 1969 a CMU wall was constructed to separate what is presently room 106 and room 108.

In 1974 room 101 was enclosed with CMU walls.

In 1982 the process waste floor drains and inlet and outlet piping to the process waste holding tank were cemented and capped. These items are presently under Operable Unit (OU) 9.

In approximately 1987 the sump pumps were locked out/tagged out and the process waste piping was capped at its exit in Building 865. This is also under OU 9.

In approximately 1987 a 47 foot by 51 foot addition, also known as room 112 was constructed on the east side of Building 889. The purpose of the addition was to house a new heating/cooling unit and a multi-stage HEPA filter exhaust plenum that would solve air balance problems in the existing facility. During operational start-up testing it was determined that the deluge system for the newest filter plenum did not provide adequate coverage to the upper section of the filters. The deluge system was redesigned but the Department of Energy decided not to provide any further funding for the project.

The following information was compiled from interviews with personnel that have worked in or have supported Building 889.

* There is no information on the radiological controls that were in place in the early days of operation of the facility.

* During the 1969 fire, circuit boards that may have contained low level contamination were sent to Building 889 from Building 776 for final decontamination. The equipment was rinsed in a solution and the solution was sampled prior to being released. [There is no documentation to back this finding] It is assumed in this document that residual amounts of plutonium may be present in rooms 106, 107, and 108.

* The inside of the building has been painted several times and there is no documentation available as to whether the area was surveyed prior to being painted.

* Decontamination of equipment was conducted in room 106. Room 108 was used to crush HEPA filters from Buildings 881, 883, 865, and 444. The filters contained beryllium and uranium contamination. It is assumed that rooms 106, 107, and 108 contain uranium (U-235 and U-238) and beryllium contamination.

IV. PRESENT USE OF BUILDING 889

There is no work being conducted in the building (some materials which have been left in the building over the years are in the process of being removed). Currently, rooms 106, 107, and 108 are being controlled as RCAs.

V. GENERAL CHARACTERIZATION SURVEY METHODS AND MATERIALS

Risk levels will be assigned to each room of the facility. The following risk levels have been assigned based on the history of activities that occurred in the room and the probability that contamination may have been spread to these areas. Risk level I areas are those with the highest probability of contamination being found and risk level III areas are those with the lowest probability of contamination being found based on the histories of the areas.

* RISK LEVEL I: Risk level I will be assessed to areas with the greatest potential of contamination based on history of operations. These areas will be divided into one meter grids due to the higher probability that contamination was spread to these areas.

* RISK LEVEL II: Risk level II will be assessed based on the history of operations that the work performed was not at a level of high activity and the potential for contamination is lower due to the operations that were performed. These areas will be divided into two meter grids due to the lower probability that contamination was spread to these areas.

* RISK LEVEL III: Risk level III will be assessed based on the history of operations that no work activity had occurred that could have the potential to spread contamination. These areas will be divided into three meter grids due to the extremely low probability that contamination was spread to these areas.

In rooms 100, 101, 101 mezzanine, 101A, 102, 104, and the hallway around rooms 101 and 101A the floors will be considered risk level II and the walls and ceilings will be considered risk level III. The floors are considered risk level II because those rooms are adjacent to areas where work was performed on contaminated components. There is some probability that contamination could have been tracked into these rooms due to poor radiological work practices that may have been used in the early days of this building. Since no work was actually performed in these rooms the probability of contamination

being anywhere other than on the floor is considered very low. If any contamination is found on the floors the risk level associated with the other surfaces will be reevaluated.

In rooms 106 and 107 the floors and walls below six feet will be considered risk level I. The walls above six feet will be considered risk level II. The ceilings will be considered risk level III. Although decontamination work was performed in these rooms, the work was all with cold fluids and therefore the probability of contamination above the six foot mark is considered lower than the floor or walls below six feet. Furthermore, the ceiling has an even lower probability based on the work that was performed in these rooms. If any contamination is found on the floors or walls the risk level associated with the other surfaces will be reevaluated.

All the surfaces in rooms 105 and 108 will be considered risk level I. Room 108 was used for hot decontamination methods which could have spread contamination to all surfaces in the room due to high temperature fluids being used to perform decontamination work carrying particles throughout the room. Room 105 is a filter plenum room and is level I because of the high probability that contamination was spread throughout the room during HEPA filter changeout activities. The plenums in room 105 have no survey history; however, the inlets will be surveyed to aid in determining the extent of contamination present in the ductwork.

In rooms 109, 110, and 111 all surfaces will be considered risk level III. Since these rooms have not been used for any radiological work, nor are they adjacent to any rooms used for radiological work, they are considered to have an extremely low probability that contamination is present.

All the surfaces in room 112 including the mezzanine will be considered risk level III except a two meter wide floor area adjacent to room 106 which will be consider risk level I. Although this room is a recent addition there is a possibility that contamination might have been spread into this room from room 106. However the probability that contamination was spread pass the two meter wide area is considered extremely low. The plenum in the room is also considered to have an extremely low probability of contamination since it was never put into operation.

In room 200 the floors will be considered risk level II, and the walls and ceiling risk level III. Room 200 was a storage room above room 104 and there is some possibility that contamination was spread into this room from improperly surveyed equipment from the RCAs; however, the probability is low that contamination would have been spread to the walls or ceiling.

Within each grid, five random survey points will be selected. A direct alpha reading, a direct beta/gamma reading, and a smear sample counted for alpha and beta/gamma will be taken from each of the five sample points.

Additionally, there are three pits and several drain lines which are under OU 9 controls. In accordance with guidance received from OU 9 management, these areas will be

sampled in a similar manner to the rest of the building. Copies of the correspondence providing this guidance are included in Appendix D.

For the purpose of this plan, the limits for removable and fixed plus removable will be the limits that are in Radiological Operating Instruction 4-61300-ROI-03.02, Table I, "Radioactive Surface Contamination Limits for Unrestricted Release" provided in Appendix C.

If a direct reading taken in the grid is greater than the allowable limits, a more detailed scan survey will be performed. Radiological Engineering will provide additional guidance as necessary.

If a smear sample is above anticipated limits for the area being surveyed, the sample will be counted again after it decays for 1/2 hour. If the sample is still above the allowable limits, and shows no indication of decay, then Radiological Engineering will be notified for guidance on follow-up survey requirements and posting of the area.

VI. ROUTINE SAMPLING

During the first phase in-process surveys will be performed during the gridding and baseline survey process and during ripout activities to ensure the radiological condition of rooms not involved in the ripout activities are not effected.

VII. SURVEYS OF INSTALLED EQUIPMENT

Survey requirements will be determined on a case by case basis for installed equipment based on the potential for contamination to be present.

VIII. ALPHA SURVEY EQUIPMENT AND TECHNIQUE

The alpha fixed plus removable surveys will be conducted using a Bicron Frisk-Tech with the A100 detector to perform a 1 minute count in accordance with ROI 6.5. A SAC-4 alpha scintillation counter will be used for counting smears for removable alpha contamination by counting for 1 minute in accordance with ROI 6.3. ROI 3.1 will be used for additional guidance on performance of surveys.

IX. BETA/GAMMA SURVEY EQUIPMENT AND TECHNIQUE

The beta/gamma fixed plus removable surveys will be conducted using the Bicron Frisk-Tech with the B50 detector to perform a 1 minute count in accordance with ROI 6.5. An Eberline BC-4 will be used for removable beta/gamma smear counting by counting for 1 minute in accordance with ROI 6.4. ROI 3.1 will be used for additional guidance on performance of surveys.

X. TENNELEC SMEAR COUNTER

A Tennelec Model LB5100-W alpha-beta smear counter will be used to count smears for alpha and beta contamination in addition to the above listed equipment.

XI. DOSE RATE SURVEYS

General area dose rate surveys will be performed in accordance with ROI 1.1 to verify there are no high radiation dose levels. These surveys will not be repeated unless material movements occur which could effect the general area dose levels.

XII. BERYLLIUM CONTAMINATION

Industrial Hygiene will be informed of the work to be performed and will determine any special requirements concerning the possibility of beryllium contamination. Surveys for beryllium contamination will be coordinated through Industrial Hygiene.

XIII. RADON MONITORING

Kits for monitoring for radon will be installed in the building to determine if there is a radon contamination problem. Appropriate action will be taken upon obtaining results.

XIV. BASELINE RADIOLOGICAL CHARACTERIZATION SURVEY DOCUMENTATION REQUIREMENTS

All sample results will be documented and submitted on a daily basis to Radiological Operations Supervision for approval, in accordance with ROI 3.1, "Performance of Surface Contamination Surveys". All approved survey results shall be placed in a designated location for Radiological Engineering review and evaluation on a daily basis. Copies of surveys will be maintained by Radiological Engineering and by D & D as part the Building 889 Project History File.

Upon completion of the baseline characterization survey Phase I, Radiological Engineering will prepare a summary and evaluation report.

XV. MARKING GRID LOCATIONS

Grids will be marked on the surfaces using permanent means. Each grid will be identified using a permanent method. The grids will remain marked and numbered until completion of Building 889 D & D operations.

XVI. ESTIMATED TIMES

The following times are estimated for taking samples in each grid considering that there are five samples taken within each grid.

Alpha direct	= 5.0 minutes
Beta/gamma direct	= 5.0 minutes
Alpha/beta smear	= 0.5 minutes
Total sampling time within each grid	= 10.5 minutes
Time to mark each grid	= 10.0 minutes
Total time per grid	= 20.5 minutes
Total number of grids (excluding plenums)	= 912 grids
(Total number of samples)	=(4560 samples)
Total time to mark & survey grids	= 18696 minutes =312 hours
Time for RCT's to perform instrument checks (1 hr/day X 30 days)	= 30 hours
Total time to perform sampling	= 342 hours*

*This estimate does not include any time for additional sampling in areas where contamination above the limits is detected.

Figure 1: Floor Plan - First Floor Building 889

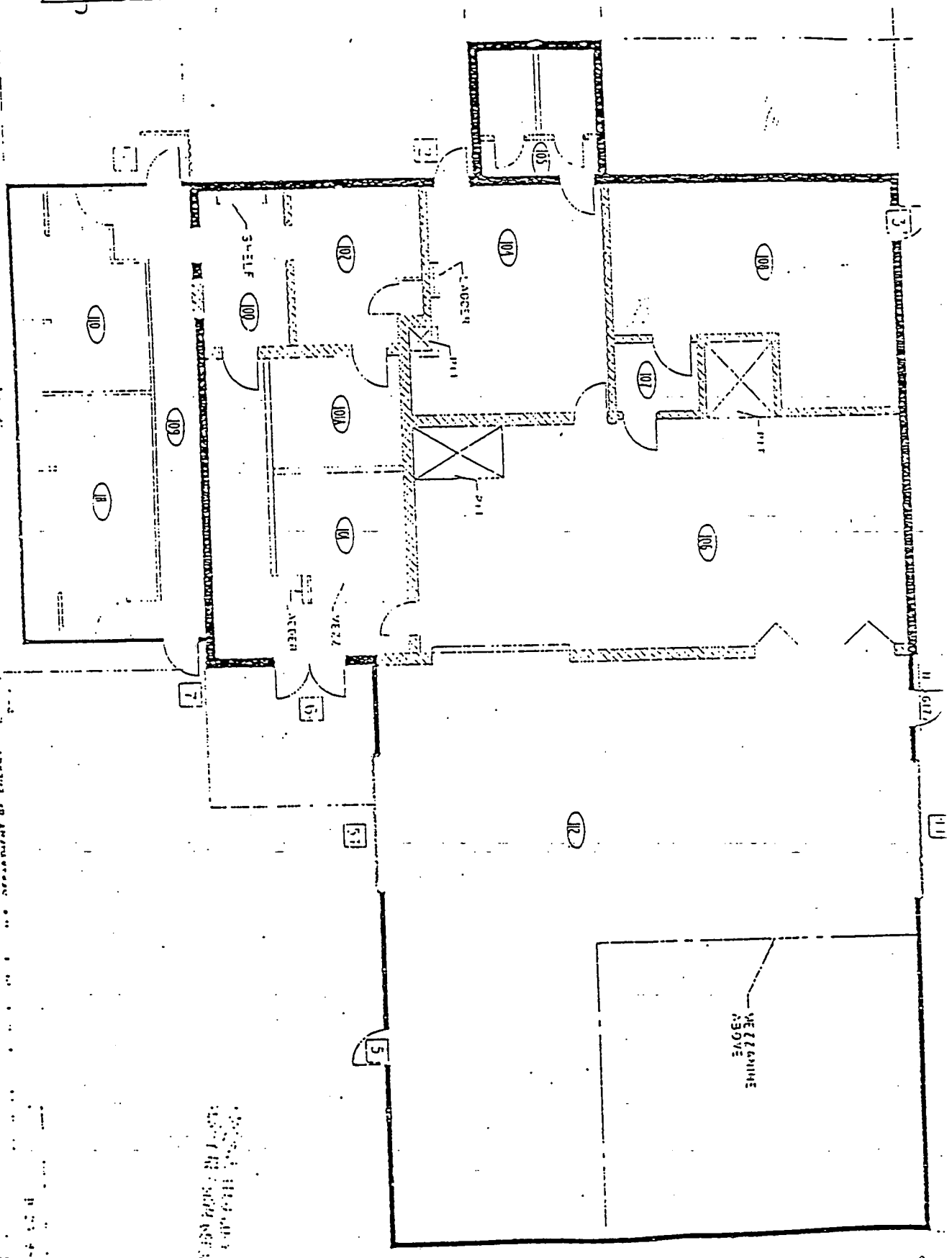

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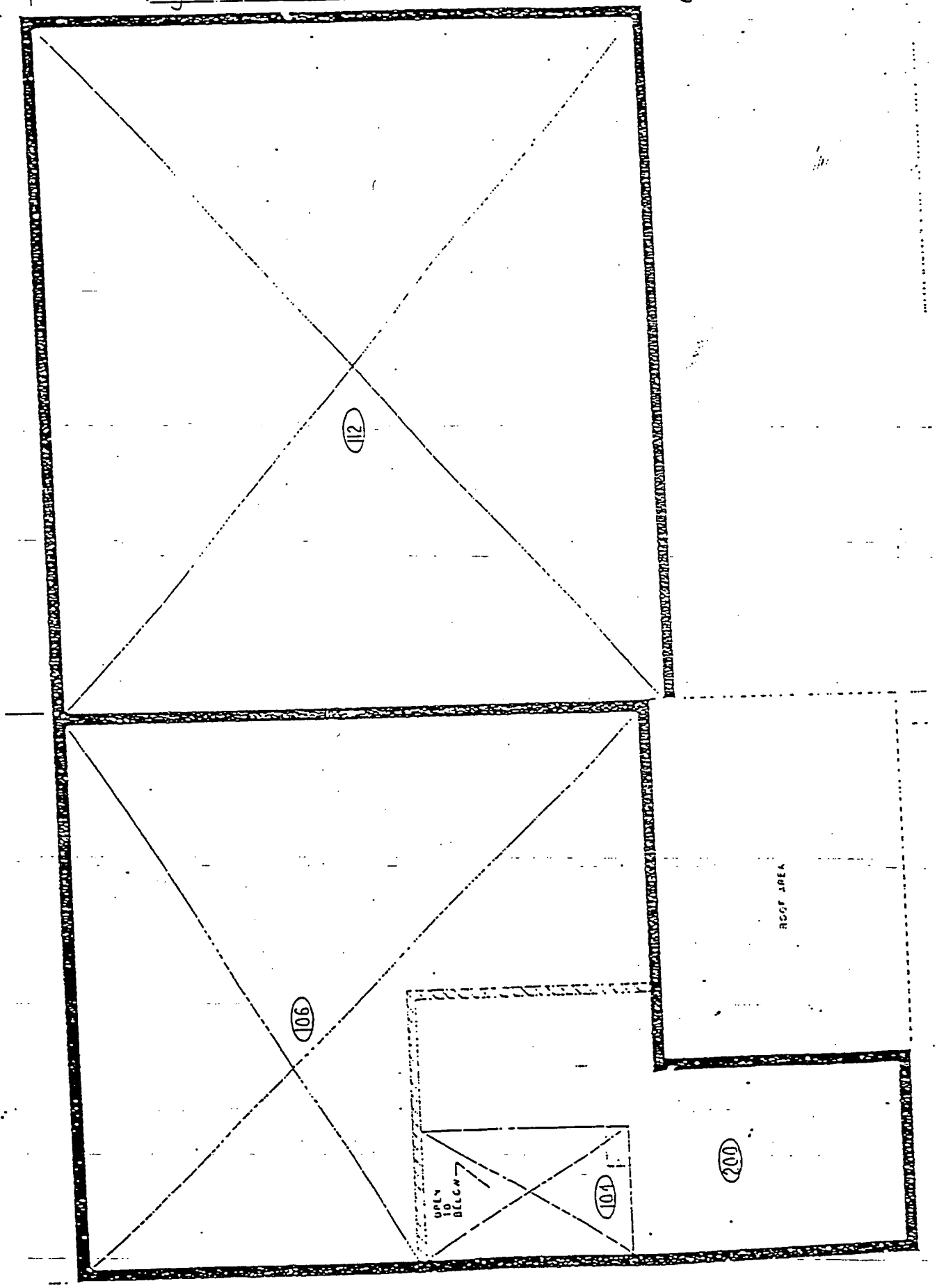
Figure 2. Floor Plan - Second Floor Building 889



BASELINE RADIOLOGICAL CHARACTERIZATION SURVEY

BUILDING 889

APPENDIXES

APPENDIX - A

ALARA REVIEW

(Since the number of grids decreased from those in Rev. 0, the ALARA Review/Dose Estimate was not revised since the job person-mr would decrease a negligable amount.)

RE-1002, ALARA JOB REVIEW, APPENDIX C
ALARA PERSON-REM ESTIMATE WORKSHEET

JOB DESCRIPTION:This ALARA Person-Rem Estimate covers activities associated with the Baseline Radiological Characterization Survey of Building 889. The characterization survey will be performed by Radiological Control Technicians. The marking of the grids will be performed by Facility Operations personnel.

The radiological hazards associated with the performance of the baseline surveys in Building 889 are minor. Recorded radiation levels in the areas of concern are less than 1 mr/hr and contamination levels are less than 20 DPM/100 cm2. Some localized areas of fixed or removable contamination above the limits are anticipated to be found during the surveys of the building. However, based upon reviews of past contamination surveys and interviews with workers, it is not anticipated that removable contamination above 5000 DPM/100 cm2 will be found during characterization surveys. RWP's governing baseline survey work will specify appropriate precautionaryclothing to protect personnel from minor contact with low-level residual contamination.

Rooms to be included in this exposure extimate are only those within the RCA.. These are rooms 104, 105, 106, 107, 108, and 200. Each of the rooms has been divided into different size grids based on their potential to have contamination present. Each grid will have five randomly picked survey points. Each survey point will have an alpha scan, beta/gamma scan, and a smear survey performed. For performance of this exposure estimate, it will be assumed that it will take 10.0 minutes (.167 hours) per grid to mark the grids and 10.5 minutes (.175 hours) per survey point to complete the required surveys. An exposure rate of 1 mr/hr is a conservative number based on the available surveys.

Room	Task	Time(#grids x hrs./grid X 1 Pers.)		Av. Dose (mR/Hr)		Pers.-mR
104	marking	110 X .167 X 1 Pers.	X	0.1	=	1.8
104	surveys	110 X .175 X 1 Pers.	X	0.1	=	1.9
105	marking	114 X .167 X 1 Pers.	X	0.1	=	1.9
105	surveys	114 X .175 X 1 Pers.	X	0.1	=	2.0
106	marking	204 X .167 X 1 Pers.	X	0.1	=	3.4
106	surveys	204 X .175 X 1 Pers.	X	0.1	=	3.6
107	marking	23 X .167 X 1 Pers.	X	0.1	=	0.4
107	surveys	23 X .175 X 1 Pers.	X	0.1	=	0.4
108	marking	248 X .167 X 1 Pers.	X	0.1	=	4.1
108	surveys	248 X .175 X 1 Pers.	X	0.1	=	4.3
200	marking	100 X .167 X 1 Pers.	X	0.1	=	1.7
200	surveys	100 X .175 X 1 Pers.	X	0.1	=	1.8
				Total Estimated Job Person-mR		27.3

Conclusions: The criteria for a more detailed ALARA review in HSP 1.02 was not met. Job/Task specific ALARA work practices and precautions for various phases of work will be specified in the individual RWP's supporting this job.

Radiological Building Engineer: D.A. Russell (Print) D.A. Russell 8/3/94 (Signature/Date)

ALARA Engineering Comments:

ALARA Engineering Approval: GARY L. MASTERS (Print) Gary L. Masters 8/3/94 (Signature/Date)

APPENDIX B

BASELINE RADIOLOGICAL CHARACTERIZATION

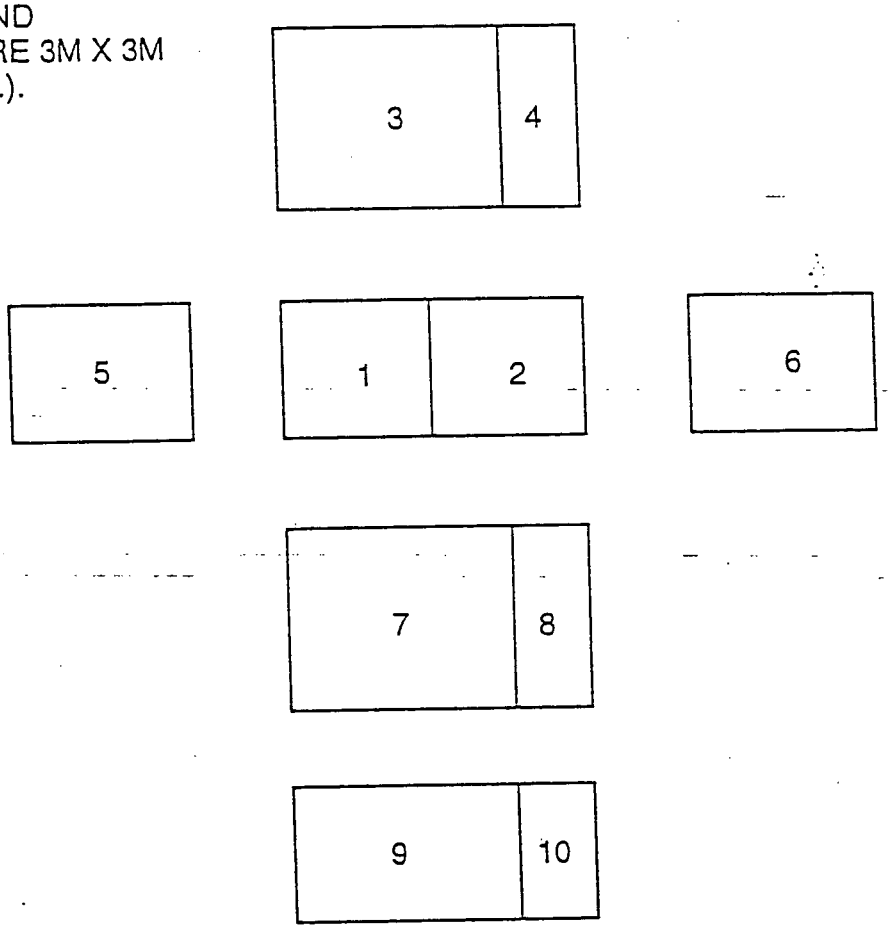
BUILDING 889

(The following grid maps are preliminary and may change upon commencement of work and a more detailed examination of the rooms to be surveyed. However, the number of grids in each room should not change. Maps for the plenums have not been provided because of the lack of detailed drawings. They will be developed after commencement of work in Building 889.)

BUILDING 889
ROOM 100

1. FLOOR IS 2M X 2M GRIDS (MAX.).

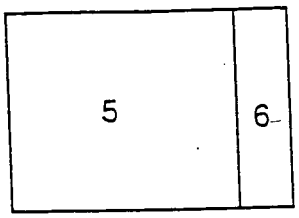
2. WALLS AND CEILINGS ARE 3M X 3M GRIDS (MAX.).

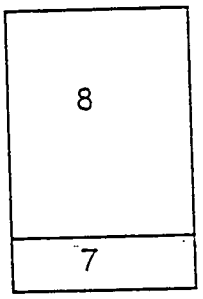


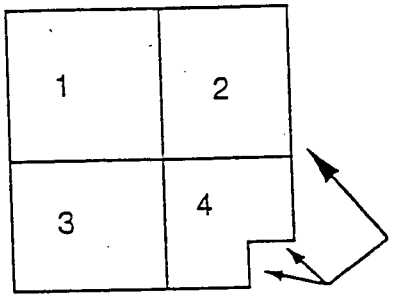
BUILDING 889
ROOM 101

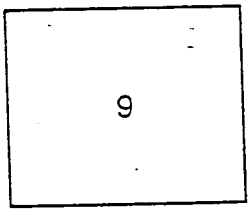
1. FLOOR IS IN 2M X 2M GRIDS (MAX.).

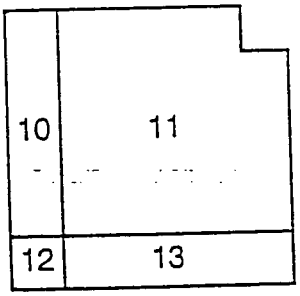
2. WALLS AND CEILING ARE IN 3M X 3M GRIDS (MAX.).







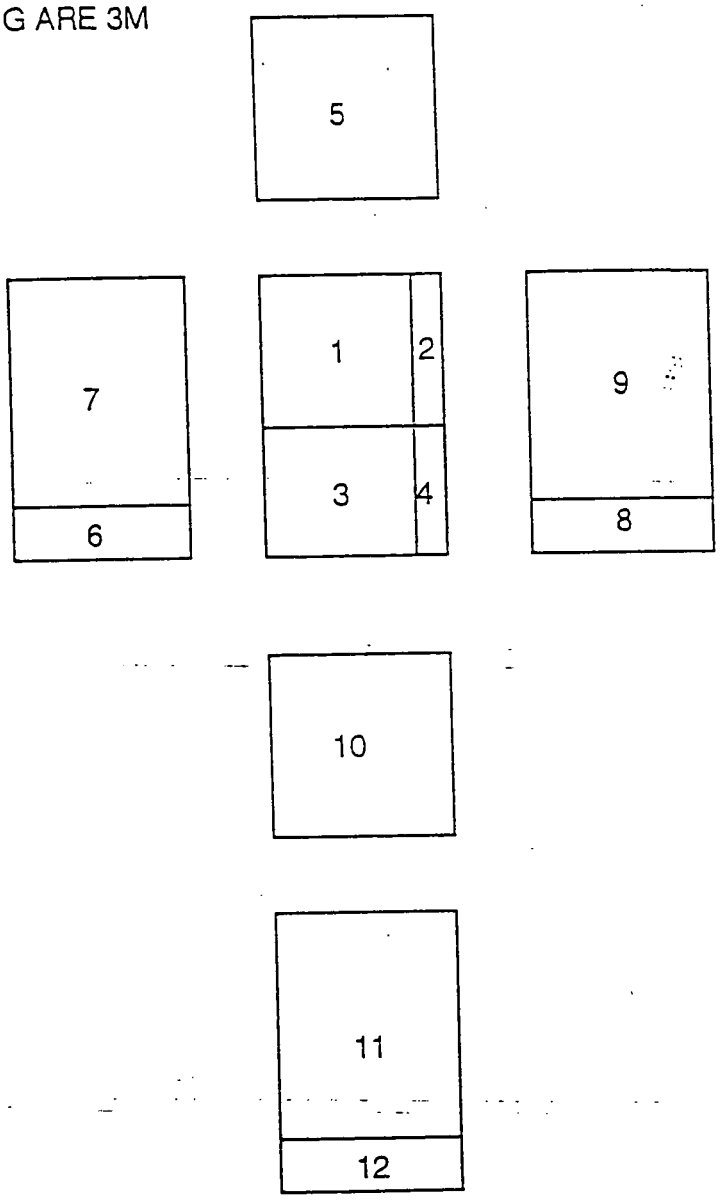




BUILDING 889
ROOM 101A

1. FLOORS ARE 2M X 2M GRIDS (MAX.).

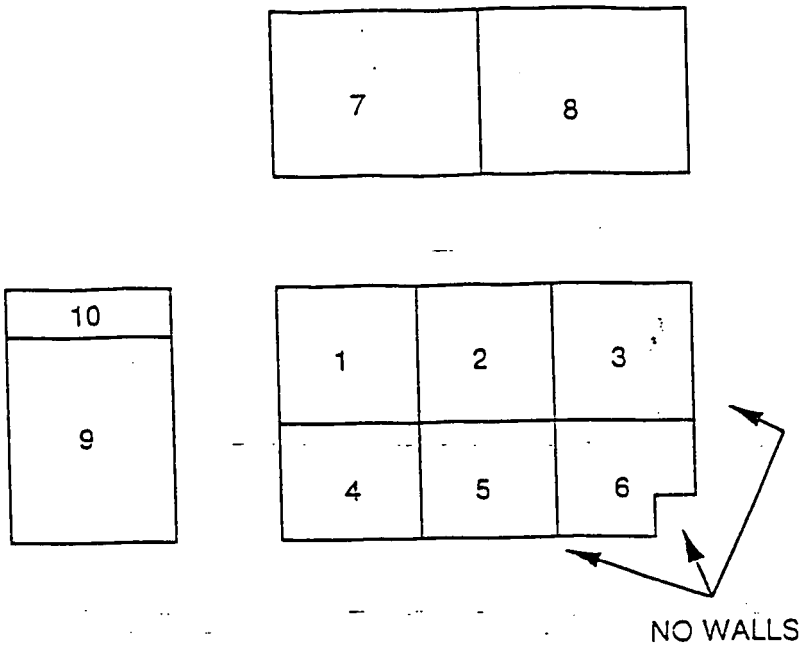
2. WALLS AND CEILING ARE 3M X 3M GRIDS (MAX.).



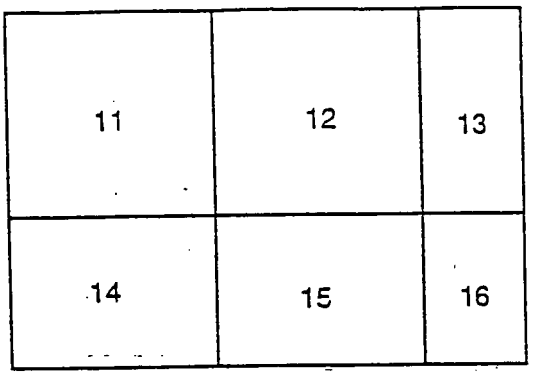
BUILDING 889
ROOM 101
MEZZANINE

1. FLOOR IS IN 2M X 2M GRIDS (MAX).

2. WALLS AND CEILING ARE IN 3M X 3M GRIDS (MAX).



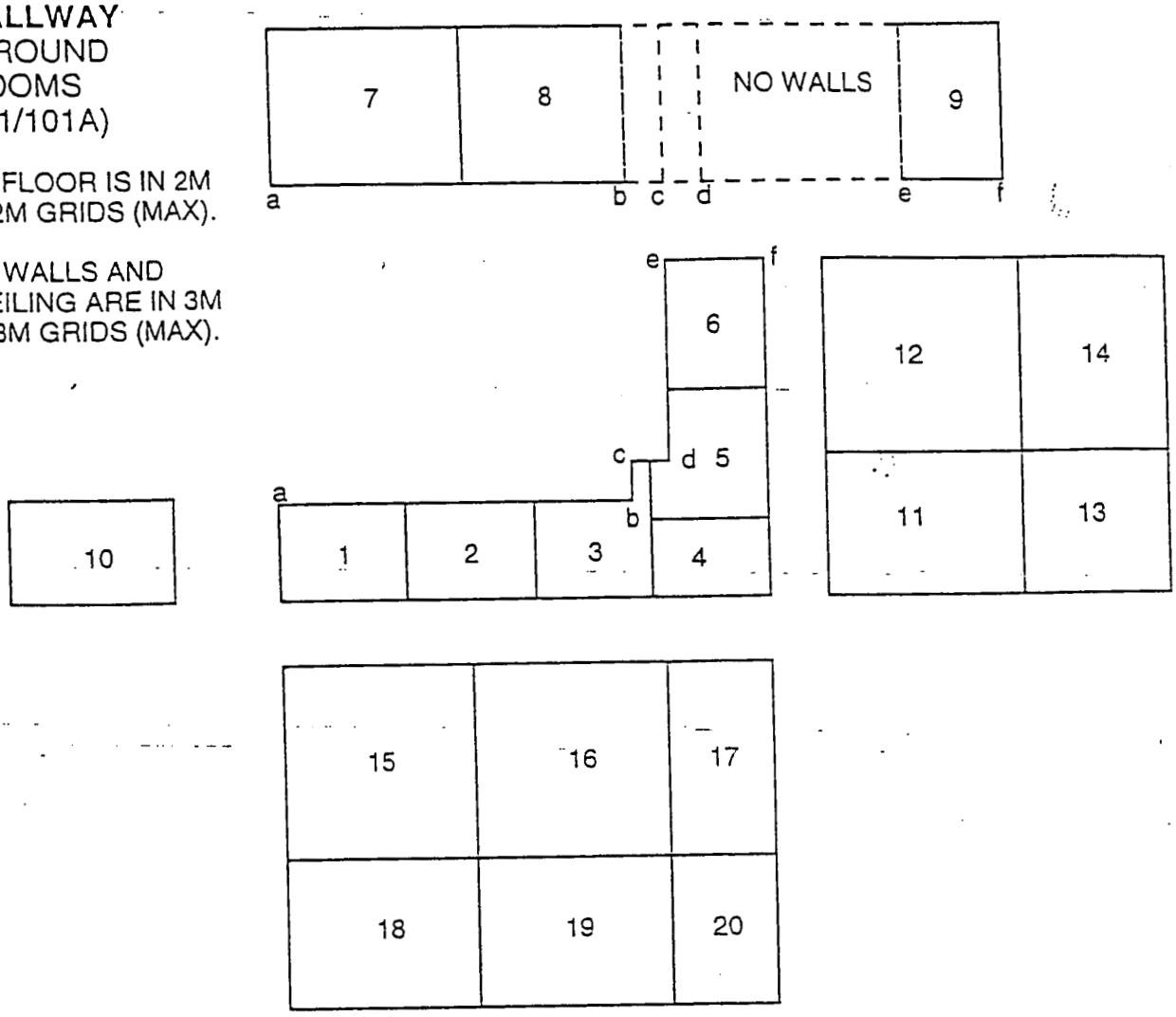
CEILING OF 101 MEZZANINE AND 101/101A HALLWAY →



BUILDING 889 HALLWAY (AROUND ROOMS 101/101A)

1. FLOOR IS IN 2M X 2M GRIDS (MAX).

2. WALLS AND CEILING ARE IN 3M X 3M GRIDS (MAX).

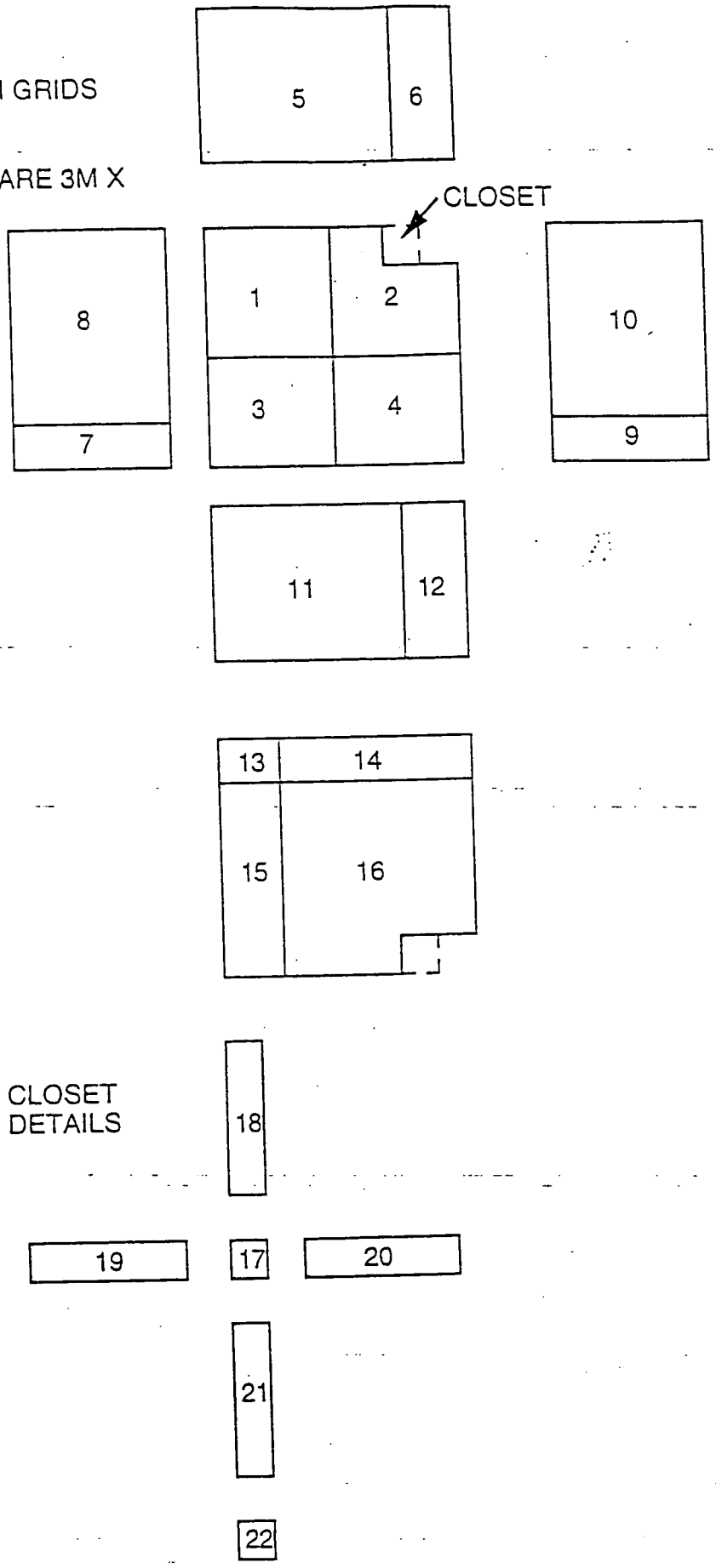


FOR CEILING OVER 101/101A HALLWAY SEE MAP FOR 101 MEZZANINE

BUILDING 889
ROOM 102

1. FLOORS ARE 2M X 2M GRIDS (MAX.).

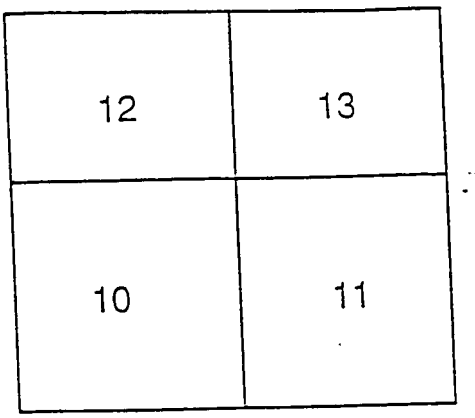
2. WALLS AND CEILING ARE 3M X 3M GRIDS (MAX.).

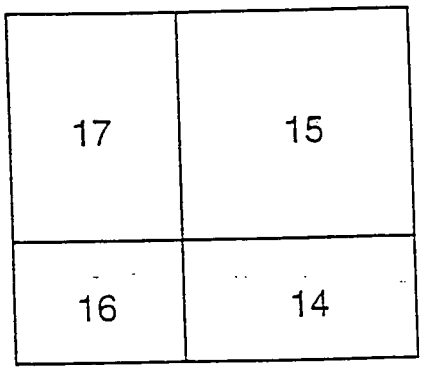


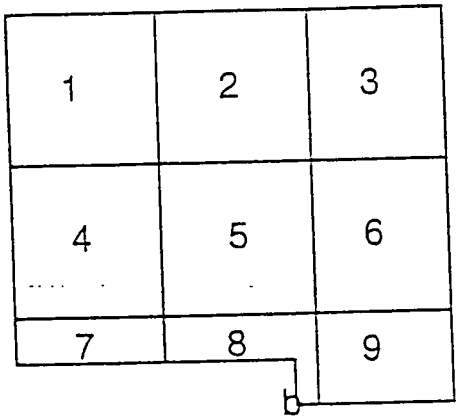
BUILDING 889
ROOM 104

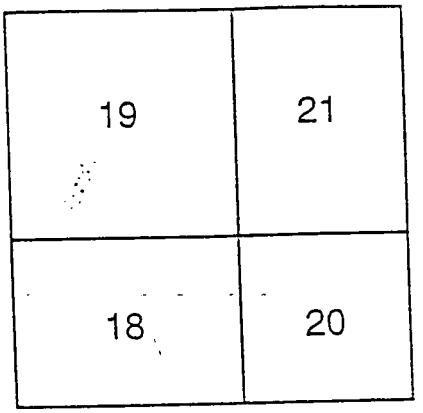
1. FLOOR IS IN 2M X 2M GRIDS (MAX.).

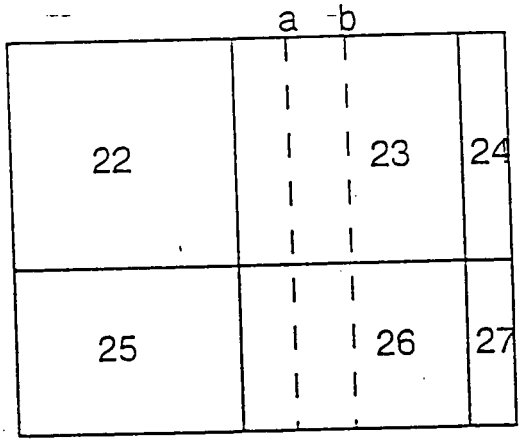
2. WALLS AND CEILING ARE IN 3M X 3M GRIDS (MAX.).

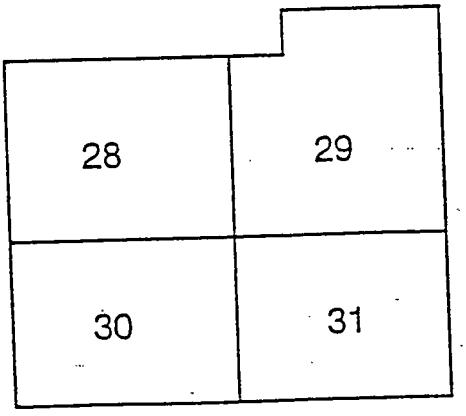








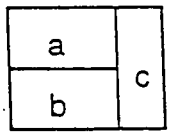




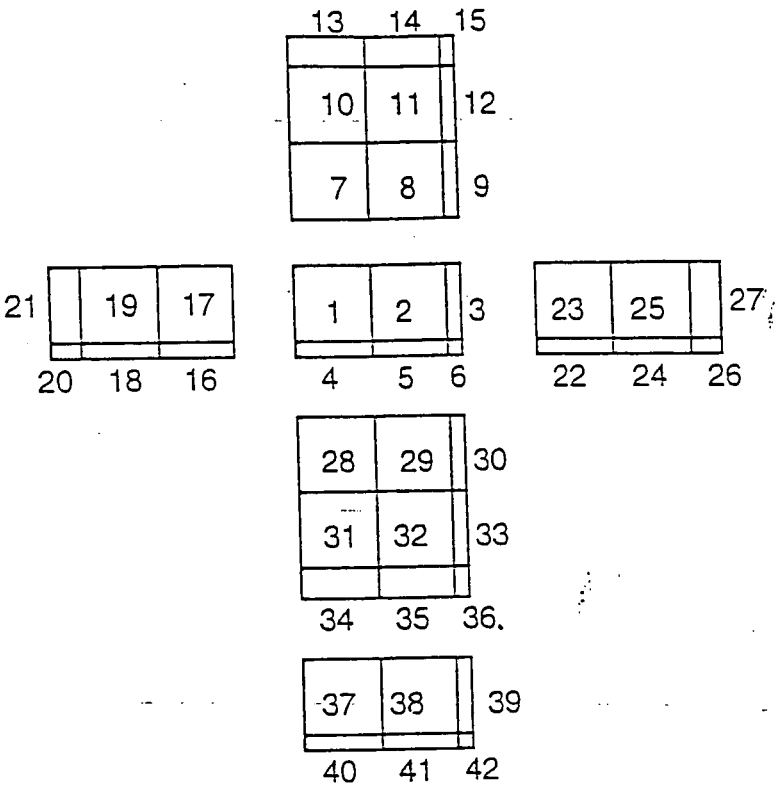
BUILDING 889
ROOM 105

ALL SURFACES 1M X 1M GRIDS (MAX.).

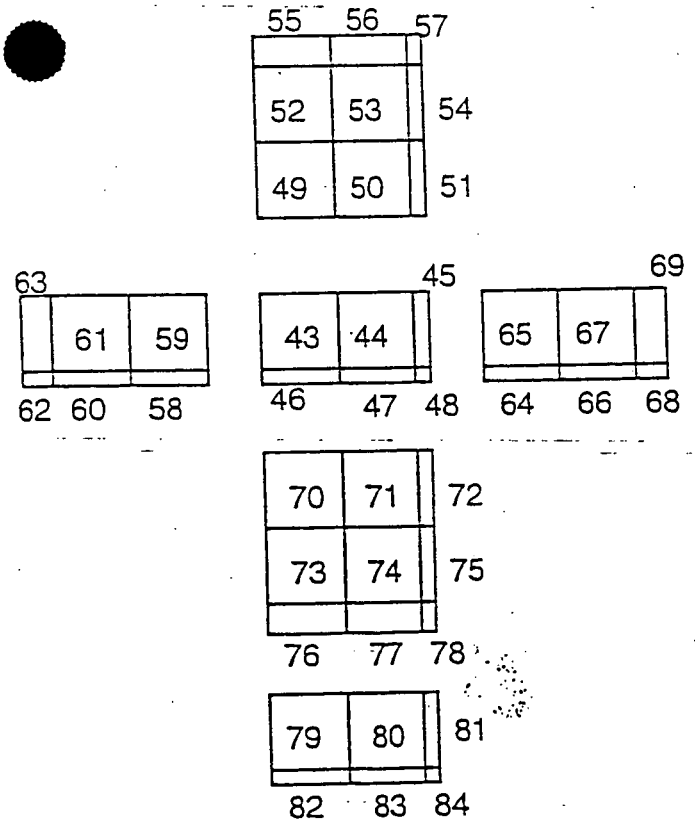
ROOM SUBDIVIDED INTO 3 ROOM AS SHOWN BELOW.



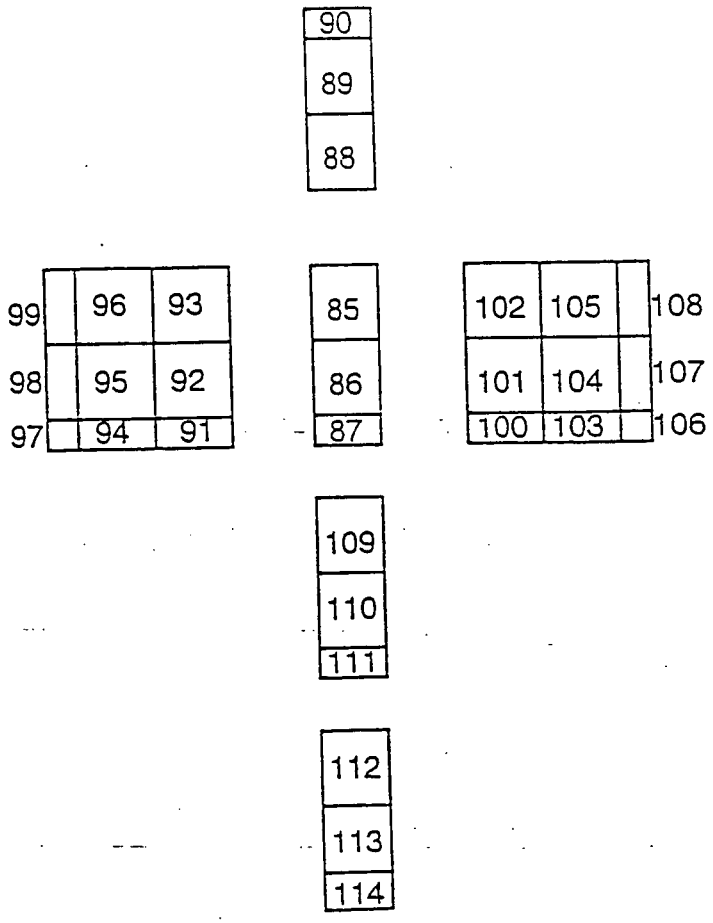
ROOM 105a



ROOM 105b



ROOM 105c

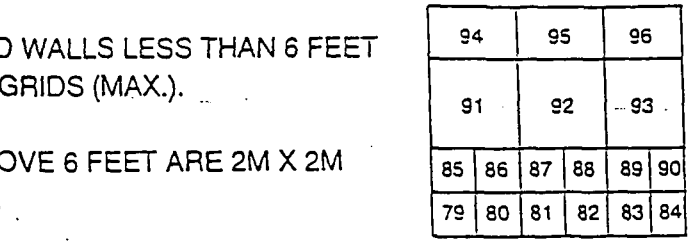


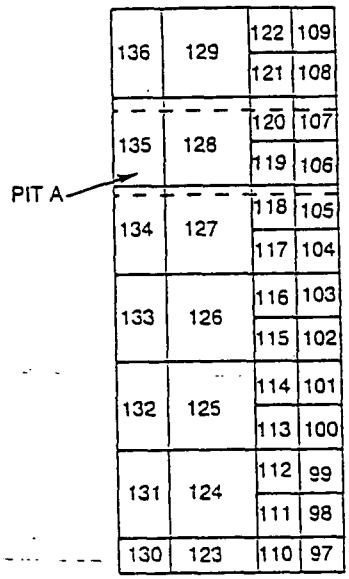
BUILDING 889
ROOM 106

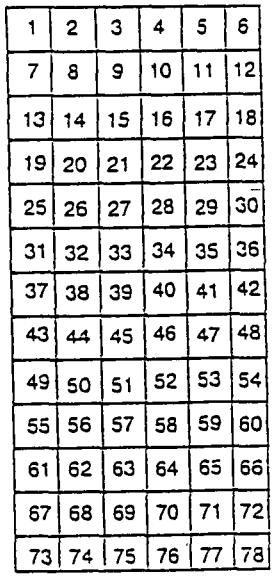
1. FLOOR AND WALLS LESS THAN 6 FEET ARE 1M X 1M GRIDS (MAX.).

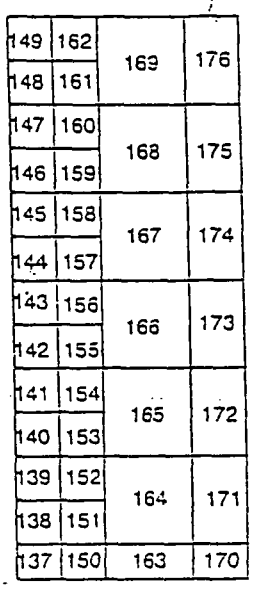
2. WALLS ABOVE 6 FEET ARE 2M X 2M GRIDS (MAX.).

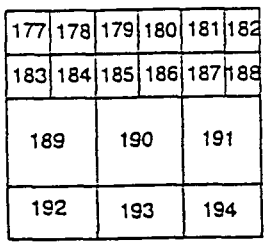
3. CEILING IS 3M X 3M GRID (MAX.).

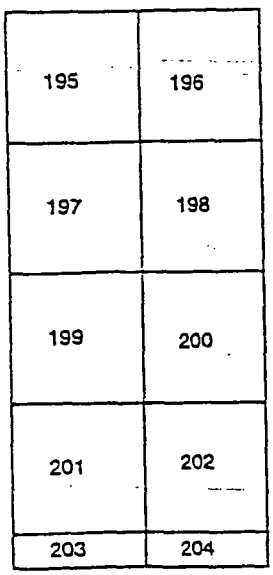










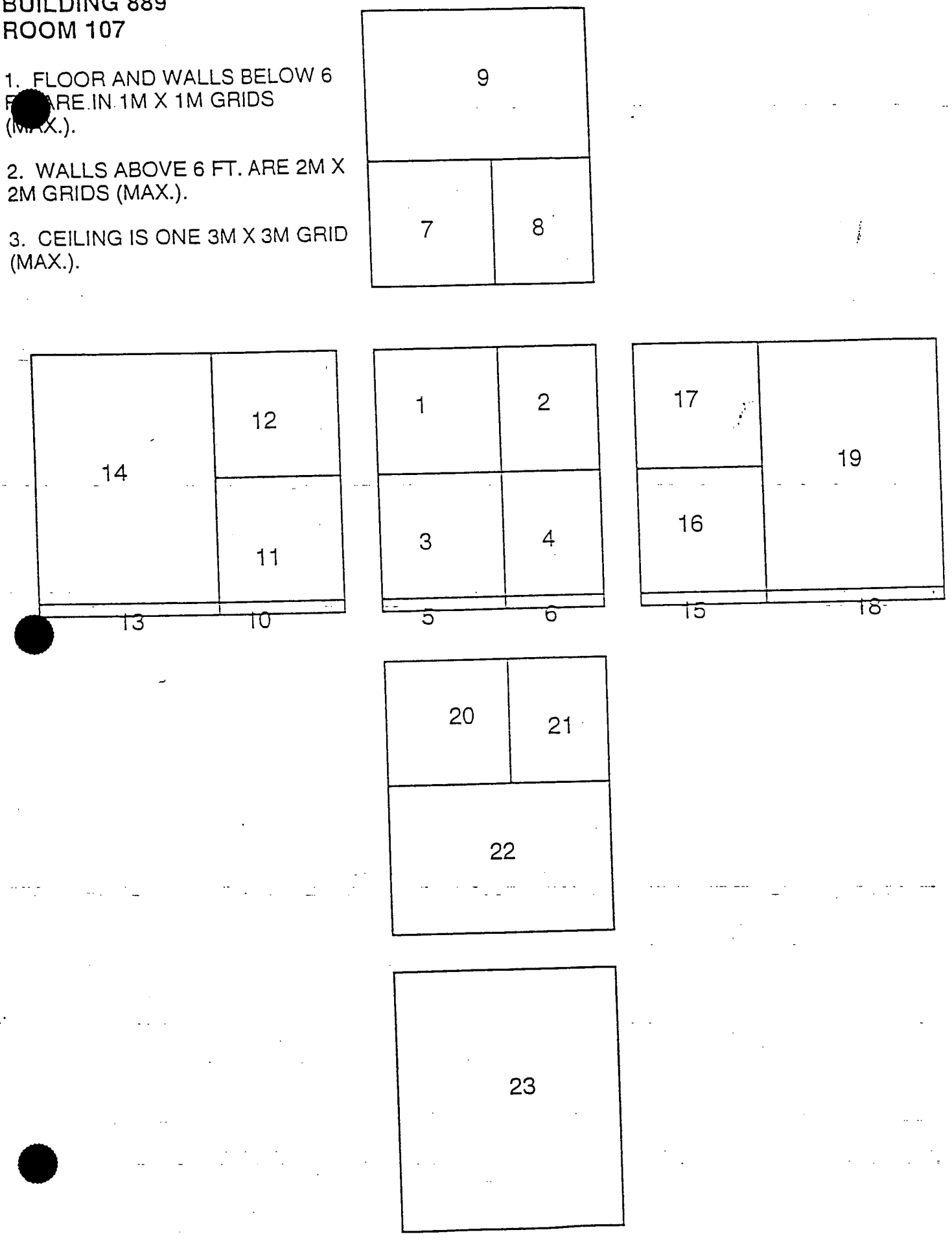


BUILDING 889
ROOM 107

1. FLOOR AND WALLS BELOW 6 FT. ARE IN 1M X 1M GRIDS (MAX.).

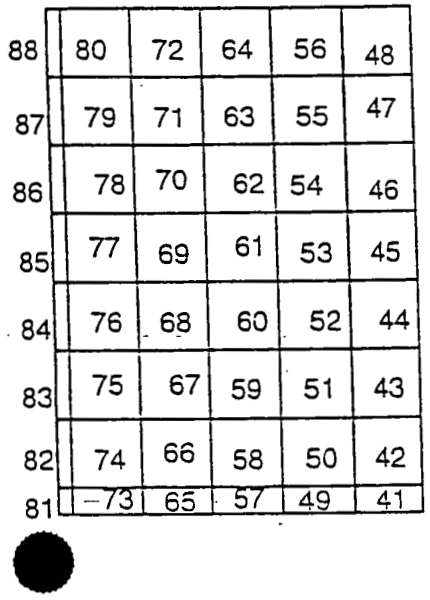
2. WALLS ABOVE 6 FT. ARE 2M X 2M GRIDS (MAX.).

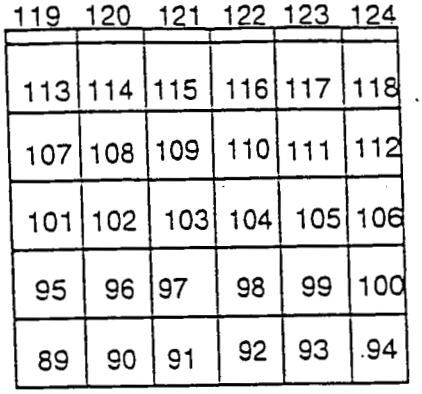
3. CEILING IS ONE 3M X 3M GRID (MAX.).

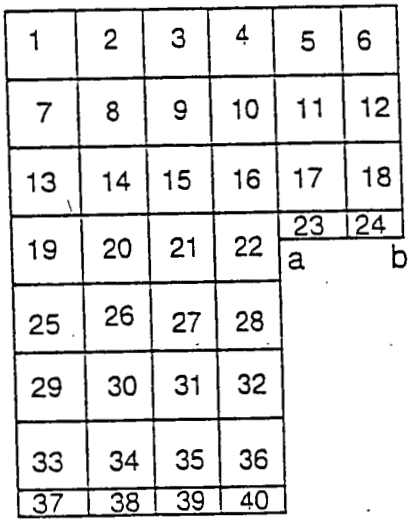


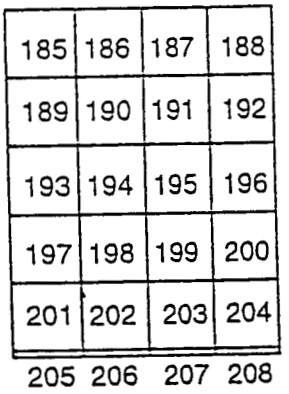
BUILDING 889
ROOM 108

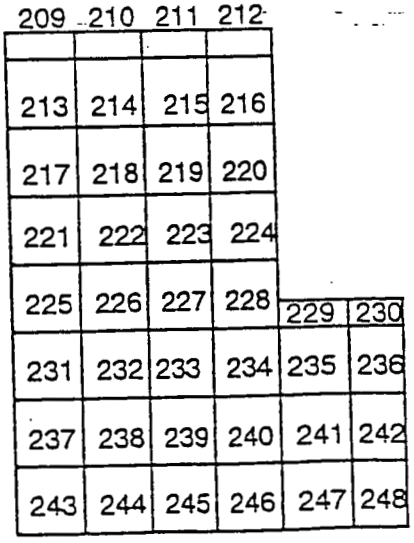
ALL SURFACES ARE 1M X 1M GRIDS (MAX.).

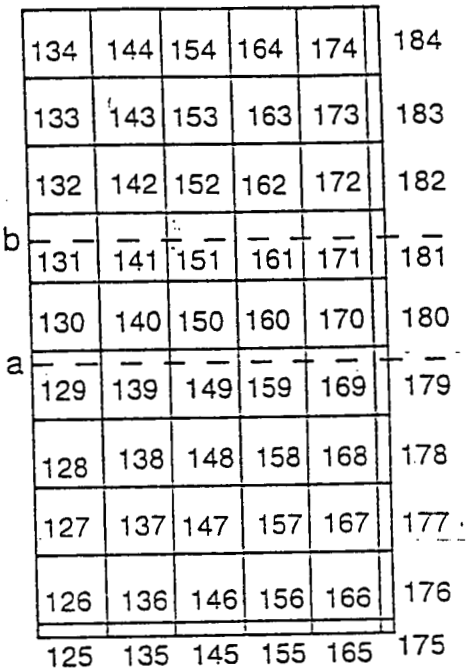






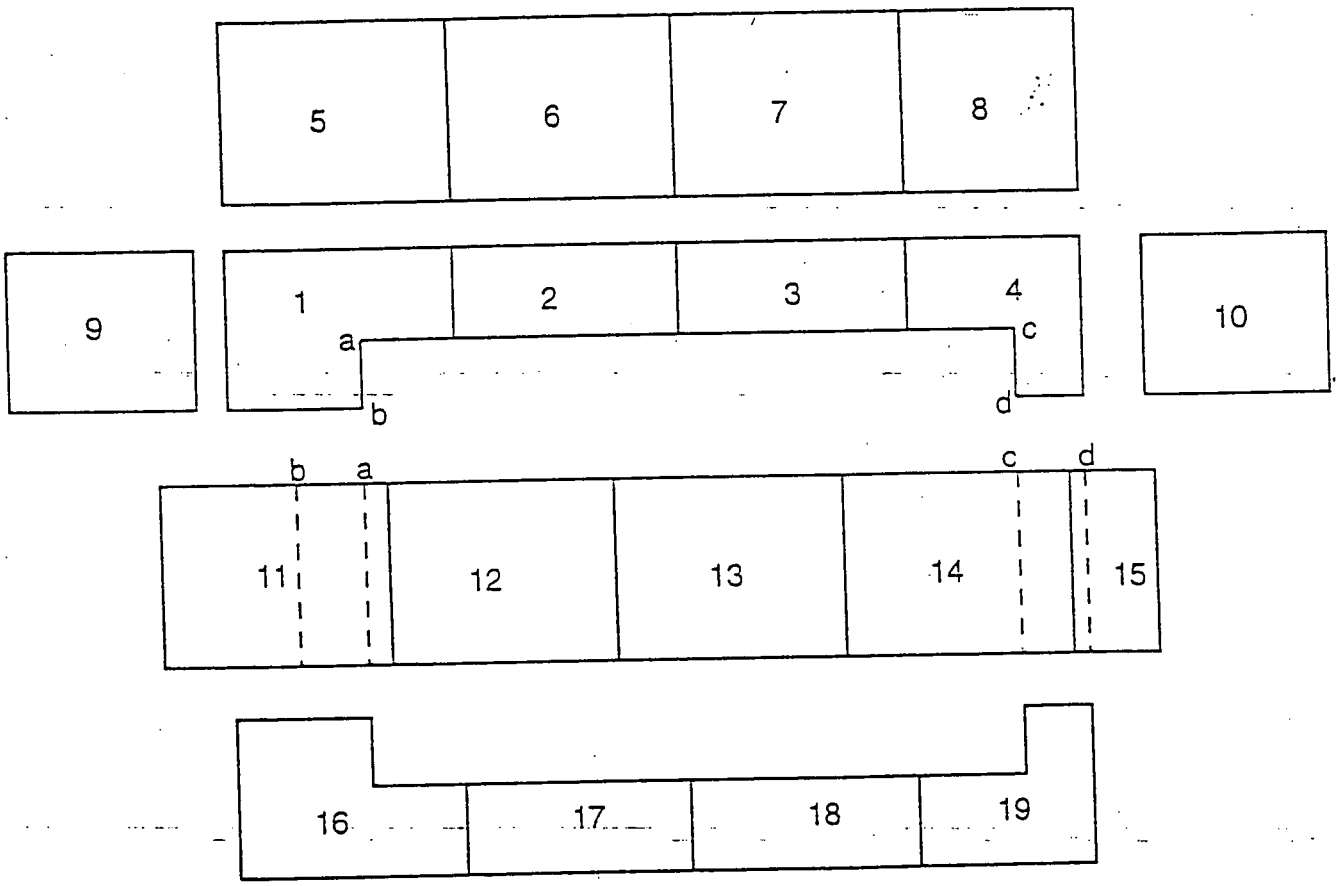






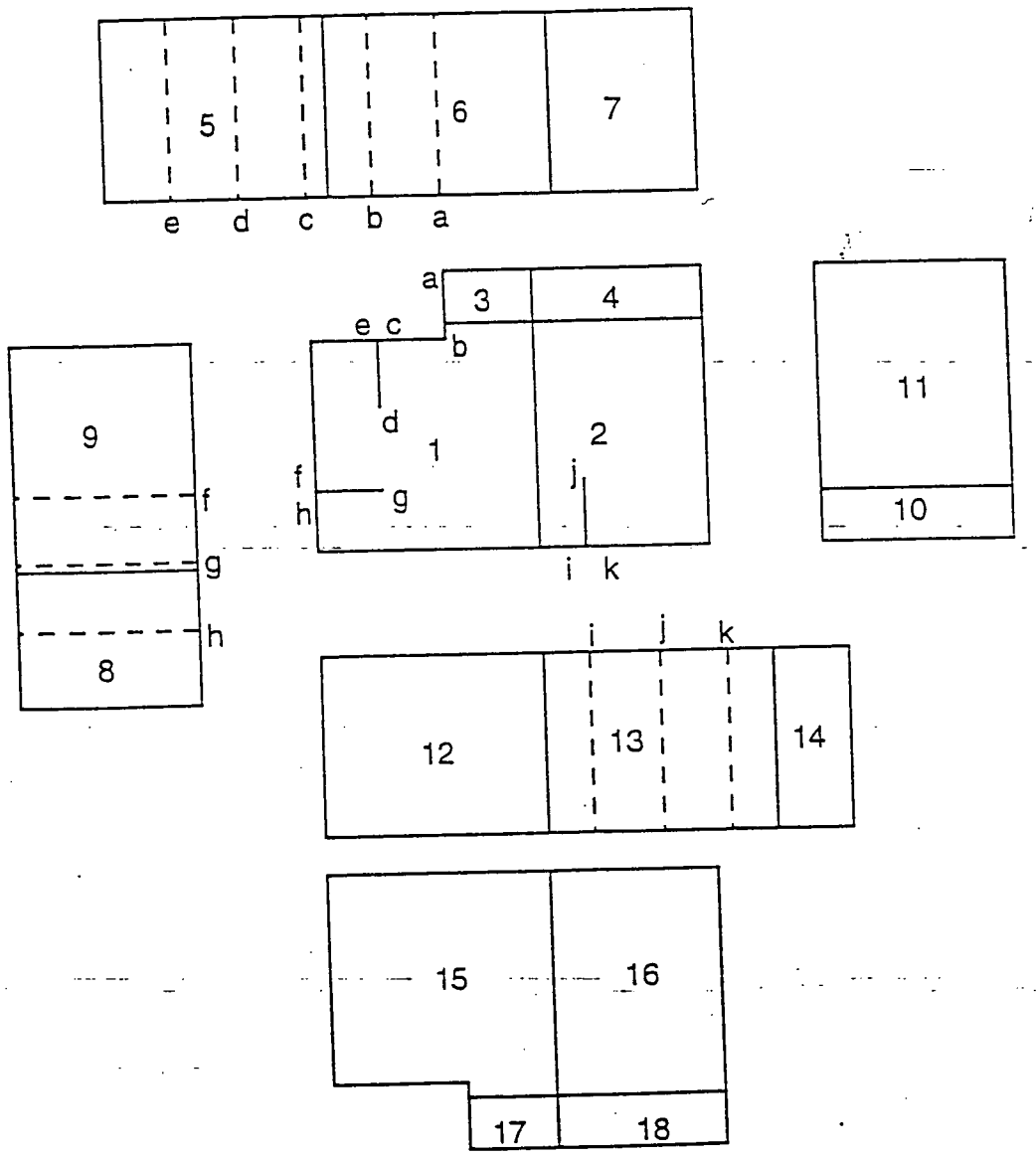
BUILDING 889
ROOM 109

ALL SURFACES ARE
3M X 3M GRIDS (MAX.).



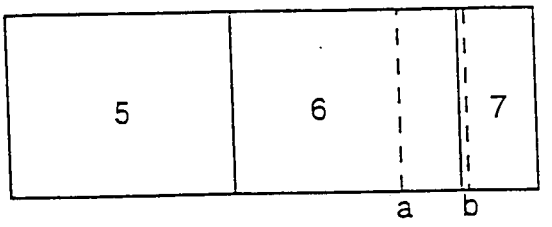
BUILDING 889
ROOM 110

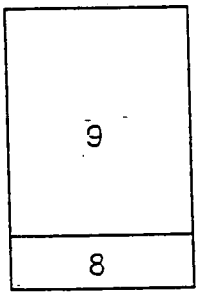
ALL SURFACES ARE
3M X 3M GRIDS
(MAX.).

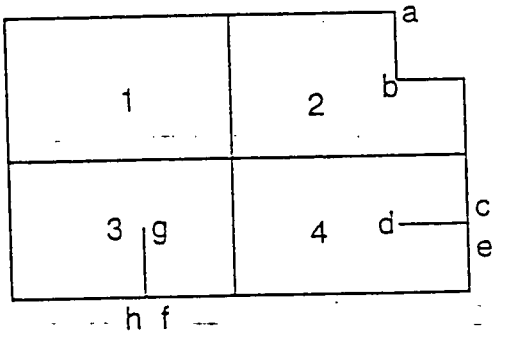


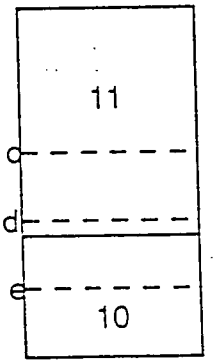
BUILDING 889
ROOM 111

ALL SURFACES ARE IN 3M X 3M GRIDS (MAX.).

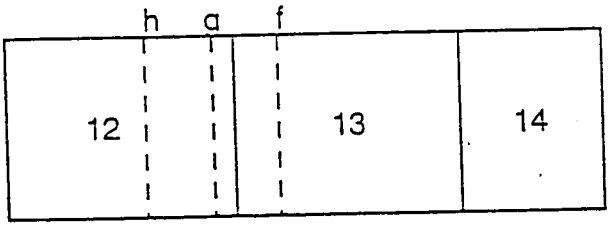


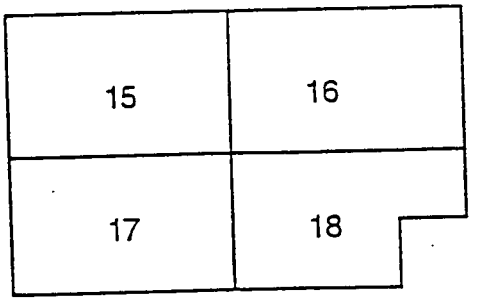






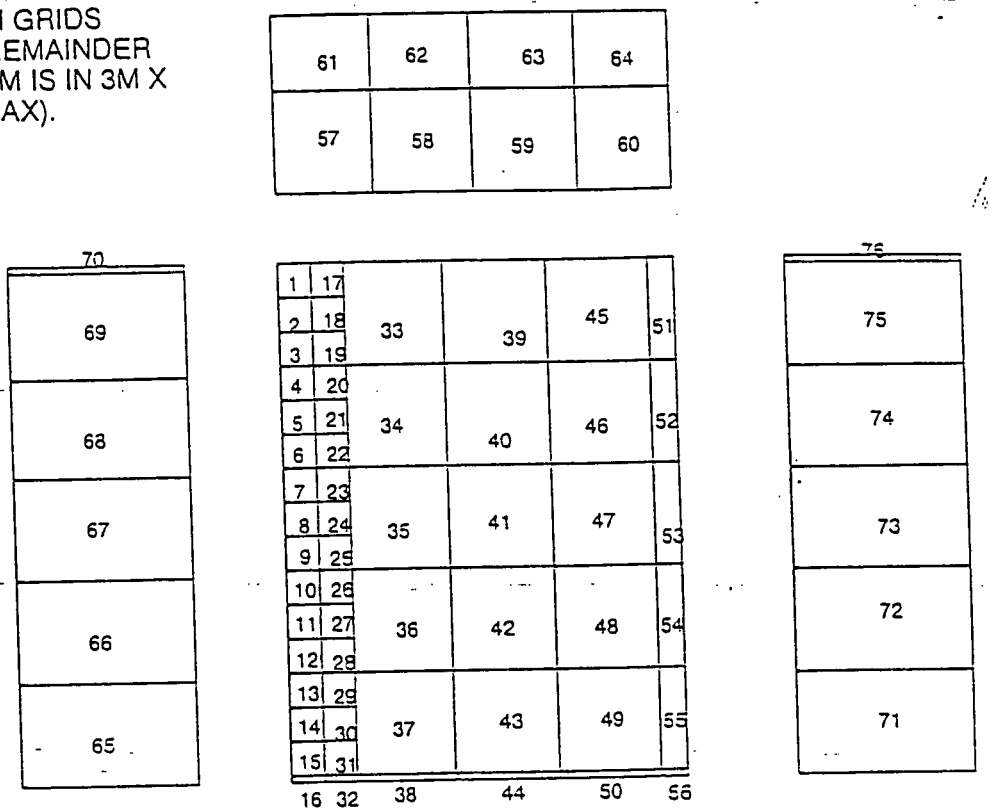
THE FLOOR AND CEILING GRIDS HAVE BEEN ADJUSTED TO HAVE 4 GRIDS IN LIEU OF SIX GRIDS WITH TWO OF THESE HAVING A WIDTH OF .1 METERS (ALL 4 ARE LESS THAN 9 SQ. METER IN AREA).





BUILDING 889
ROOM 112

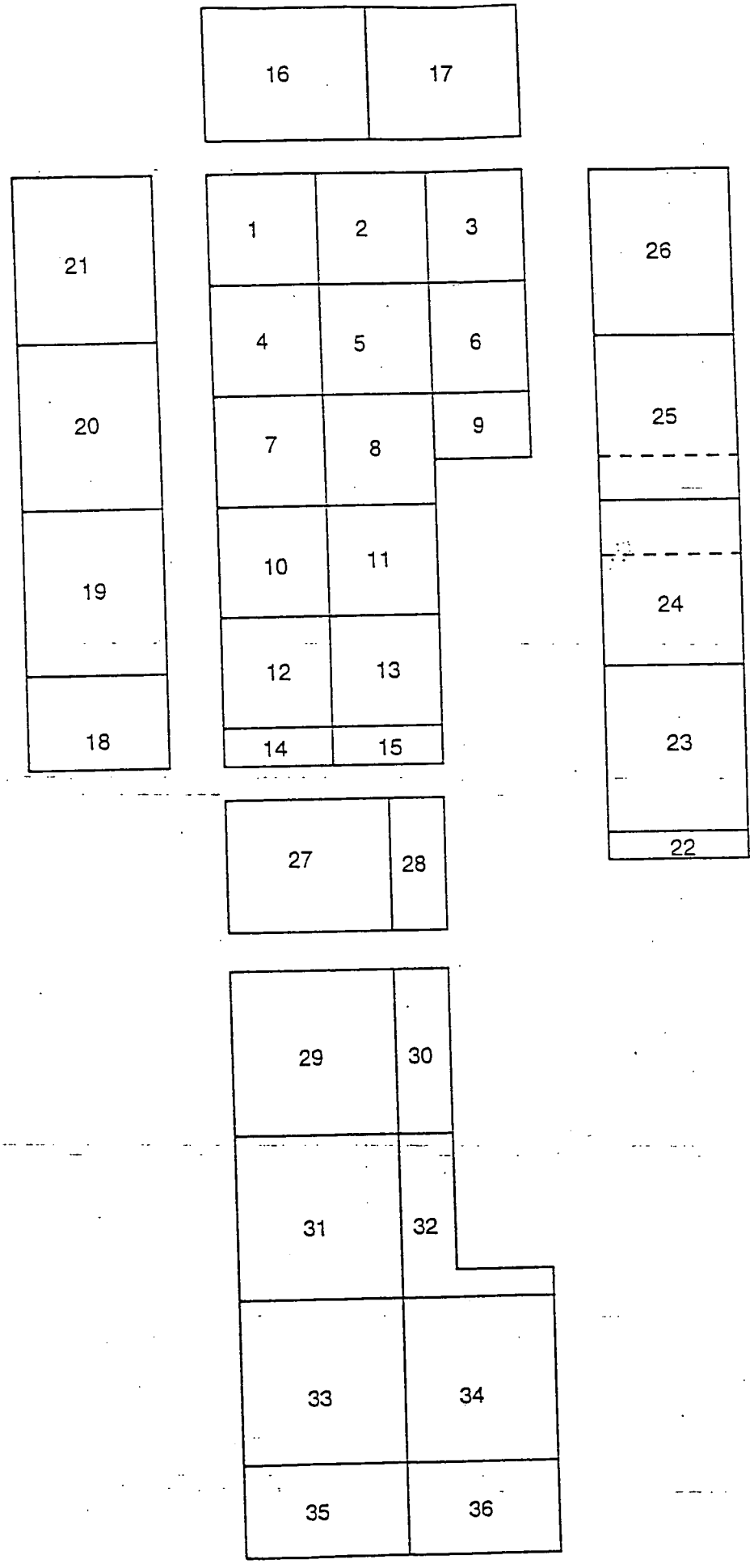
TWO METERS OF FLOOR ADJACENT TO ROOM 106 IS IN 1M X 1M GRIDS (MAX), THE REMAINDER OF THE ROOM IS IN 3M X 3M GRIDS (MAX).



BUILDING 889
ROOM 200

1. FLOOR IS IN 2M X 2M GRIDS (MAX.).

3. WALLS AND CEILING ARE IN 3M X 3M GRIDS (MAX.).



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APPENDIX C

RADIOLOGICAL OPERATING INSTRUCTION 4-61300-ROI-3.02

TABLE I

RADIOACTIVE SURFACE CONTAMINATION LIMITS FOR UNRESTRICTED RELEASE

6.2 Surface Contamination Limits

6.2.1 Surface contamination limits for unrestricted releases are listed below:

Table I. Radioactive Surface contamination Limits for Unrestricted Release.

Radionuclides [2]	Average Total [3,4] (Fixed + Removable) (dpm/100 cm^2) [1]	Maximum Total [4,5] (Fixed + Removable) (dpm/100 cm^2) [1]	Removable [4,6] (dpm/100cm^2)[1]
Transuranics, I-125, I-129, Ra-226, Ac-227, Ra-228, Th-228, Th-230, Pa-231	100 [8]	300	20
Th-Natural, Sr-90, I-131, I-133, Ra-223, Ra-224, U-232, Th-232	1,000	3,000	200
U-Natural, U-235, U-238, and associated decay product, alpha emitters.	5,000	15,000	1,000
Beta-gamma emitters (radionuclides with decay modes other than alpha emission or spontaneous Fission) except Sr-90 and others noted above. [7]	5,000	15,000	1,000

Notes: 1) As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute measured by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

2) Where surface contamination by both alpha and beta-gamma emitting radionuclides exists, the limits established for alpha and beta-gamma-emitting radionuclides should apply independently.

3) Measurements of average contamination should not be averaged over an area of more than 1 m^2. For objects of less surface area, the average should be derived for each object.

APPENDIX D

COPY OF LETTER TO MANAGER OPERATIONAL UNIT 9

EG&G ROCKY FLATS

INTEROFFICE CORRESPONDENCE

DATE: August 2, 1994

TO: C. R. Cowdery, Industrial Area OU Management, Bldg. 080, X6953

FROM: R. W. Norton, Radiological Engineering, Bldg. T6908, X4075

SUBJECT: RADIOLOGICAL SAMPLING WASTE PITS AND DRAINS IN BUILDING 889
RWN-034-94

Radiological Engineering at the present time is writing a radiological sampling plan for D&D Operations to determine the contamination levels inside Building 889.

Inside Building 889 are three waste pits (tanks) and drains that are under the controls of Operable Unit (OU) 9. If contamination is found on the surface inside the tanks, the sampling plan requires that paint and concrete samples be taken to determine the extent of contamination. Radiological Engineering is requesting written guidance as to what methods that can used to determine the extent of the contamination under the paint and into the concrete.

Please send your response to R. W. Norton Building T6908.

If you have any questions, please contact me at Extension 4075.

rwn

cc:
K. D. Anderson
T. J. Corbett
D. B. Kent
D. A. Russell

EG&G ROCKY FLATS

INTEROFFICE CORRESPONDENCE

DATE: August 4, 1994

TO: R. W. Norton, Radiological Engineering, Bldg. T690B, X4075

FROM: C. D. Cowdery, Industrial Area OU Closures/D&D Team, Bldg. 080, X6953

SUBJECT: RADIOLOGICAL SAMPLING WASTE PITS AND DRAINS IN BUILDING 889 - CDC-009-94

DOE Order: 4700.1

Action: None required.

This memorandum is in response to your correspondence concerning the three floor sumps (tanks) and drains inside Building 889 that are to be sampled to ascertain contamination extent.

Only the Original Process Waste Line (OPWL) tanks and pipelines are Operable Unit (OU) 9. Our plans only show two sumps in Building 889 as being part of OU 9. If you are aware of any additional floor sumps or tanks that are part of the OPWL, please notify me so that we can resolve this.

My position as to what methods should be used for determining the contamination levels are simple. As long as the integrity of the tank is maintained, and the concrete is not altered in such a way that exposes or disturbs soil, any devised sampling method will work. This will presumably involve surface chipping of the concrete and some method of scraping the paint that will not alter the tank integrity in terms of containment.

Removal/remediation actions may require a Proposed Action Memorandum or an Interim Remedial Action Plan. This has been discussed with T. R. DeMass of Decontamination and Decommissioning (D&D).

Other than the above concerns we do not foresee any problems with sampling the tanks. If you have any questions, with this matter, please do not hesitate to call me.

CDC:alk

cc:
K. D. Anderson
T. J. Corbett
D. P. Craft
T. R. DeMass
S. R. Keith
D. B. Kent
B. D. Peterman
D. A. Russell
ERM Records Center (2)

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APPENDIX E

RESPONSES TO COMMENTS RECEIVED FROM DOE

The following are responses to comments received from the DOE RFFO in memorandum ER:WNF:09667 dated September 13, 1994 on the Baseline Radiological Characterization Survey, Building 889, Rev. 0 dated August 8, 1994.

Comment #1 Response. Explanations for the different risk levels and how they were determined have been expanded, particularly in rooms where different risk levels were assigned in the same room.

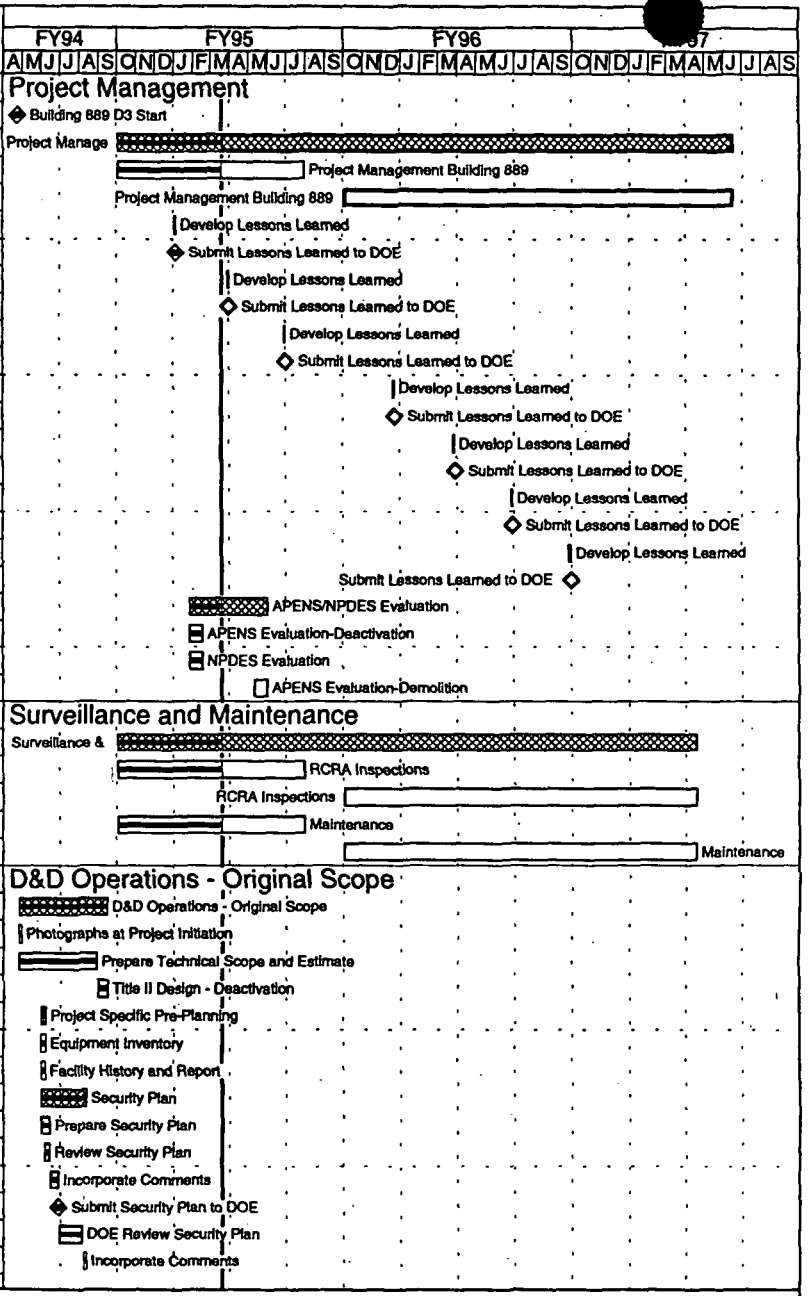
Comment Response. Paragraph IX has been revised to state that surveys for beryllium contamination will be coordinated through Industrial Hygiene. It should be noted that there is a separate plan for hazardous material characterization.

Comment #2 Response. Paragraph XI has been revised to state that Radiological Engineering will keep copies of surveys. D & D will also develop a Project History File which will include the survey results. Details on both of these files will be formalized and documented in future correspondence.

Comment #3 Response. The survey maps that were included in Rev. 0 have been removed due to other comments received and the fact that they have no bearing or involvement with this work. The survey maps and results sheets for this particular work will be developed by Radiological Engineering and provided to Radiological Operations to ensure that documentation is traceable and meaningful.

ATTACHMENT 5
Work Activity Schedule

ACTIV ID	ACTIVITY DESCRIPTION	EARLY START	EARLY FINISH	DUR	REM DUR
10	Building 889 D3 Start	24APR94A		0	0
309	Project Management	3OCT94A	16JUN97	672	560
308	Project Management Building 889	3OCT94A	31JUL95	195	93
308A	Project Management Building 889	2OCT95	16JUN97	424	424
240	Develop Lessons Learned	3JAN95A	5JAN95A	3	0
250	Submit Lessons Learned to DOE		5JAN95A	0	0
241	Develop Lessons Learned	29MAR95	31MAR95	3	3
251	Submit Lessons Learned to DOE		31MAR95	0	0
242	Develop Lessons Learned	28JUN95	30JUN95	3	3
252	Submit Lessons Learned to DOE		30JUN95	0	0
1000	Develop Lessons Learned	20DEC95	22DEC95	3	3
1500	Submit Lessons Learned to DOE		22DEC95	0	0
2000	Develop Lessons Learned	26MAR96	28MAR96	3	3
1600	Submit Lessons Learned to DOE		28MAR96	0	0
3000	Develop Lessons Learned	26JUN96	28JUN96	3	3
1700	Submit Lessons Learned to DOE		28JUN96	0	0
4000	Develop Lessons Learned	26SEP96	30SEP96	3	3
1800	Submit Lessons Learned to DOE		30SEP96	0	0
229	APENS/NPDES Evaluation	27JAN95A	1JUN95	88	52
230	APENS Evaluation-Deactivation	27JAN95A	17FEB95A	15	0
231	NPDES Evaluation	27JAN95A	17FEB95A	15	0
232	APENS Evaluation-Demolition	11MAY95	1JUN95	15	15
459	Surveillance & Maintenance	3OCT94A	18APR97	632	520
461	RCRA Inspections	3OCT94A	31JUL95	195	93
461A	RCRA Inspections	2OCT95	18APR97	384	384
462	Maintenance	3OCT94A	31JUL95	195	93
462A	Maintenance	2OCT95	18APR97	384	384
50037	D&D Operations - Original Scope	25APR94A	15SEP94A	101	0
50038	Photographs at Project Initiation	25APR94A	29APR94A	5	0
50004	Prepare Technical Scope and Estimate	25APR94A	29AUG94A	49	0
50008	Title II Design - Deactivation	30AUG94A	15SEP94A	128	0
50127	Project Specific Pre-Planning	31MAY94A	7JUN94A	6	0
50128	Equipment Inventory	31MAY94A	7JUN94A	10	0
50129	Facility History and Report	1JUN94A	7JUN94A	5	0
50101	Security Plan	31MAY94A	12AUG94A	53	0
50102	Prepare Security Plan	31MAY94A	14JUN94A	15	0
50103	Review Security Plan	6JUN94A	14JUN94A	10	0
50104	Incorporate Comments	15JUN94A	28JUN94A	5	0
50105	Submit Security Plan to DOE		28JUN94A	0	0
50106	DOE Review Security Plan	29JUN94A	5AUG94A	15	0
50107	Incorporate Comments	8AUG94A	12AUG94A	5	0



Activity Classification: Sort Code
Hammock Level 1
Hammock Level 2

Plot Date 24MAR95
Data Date 20MAR95
Project Start 1APR94
Project Finish 16JUN97

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

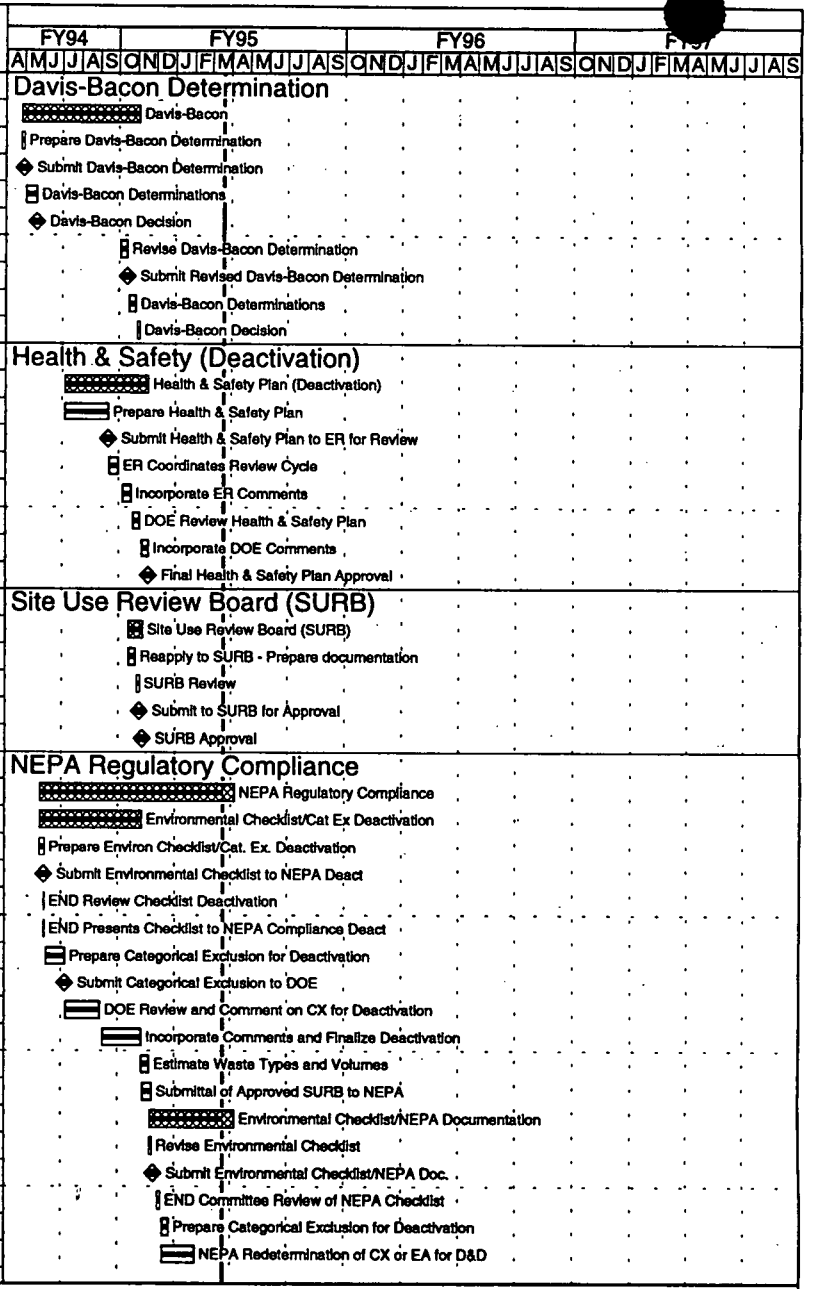
6891

Sheet 1 of 7

EG&G Rocky Flats Inc.
WORK PACKAGE 13003
Building 889 Complete-Demolition

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	EARLY START	EARLY FINISH	ORIG DUR	REM DUR
205	Davis-Bacon	25APR94A	3NOV94A	136	0
50003	Prepare Davis-Bacon Determination	25APR94A	29APR94A	5	0
50005	Submit Davis-Bacon Determination		29APR94A	0	0
50006	Davis-Bacon Determinations	2MAY94A	20MAY94A	15	0
50007	Davis-Bacon Decision		20MAY94A	0	0
206	Revise Davis-Bacon Determination	3OCT94A	14OCT94A	10	0
901	Submit Revised Davis-Bacon Determination		14OCT94A	0	0
207	Davis-Bacon Determinations	17OCT94A	28OCT94A	10	0
208	Davis-Bacon Decision	31OCT94A	3NOV94A	8	0
50042	Health & Safety Plan (Deactivation)	5JUL94A	18NOV94A	98	0
50043	Prepare Health & Safety Plan	5JUL94A	14SEP94A	10	0
50044	Submit Health & Safety Plan to ER for Review		14SEP94A	0	0
50045	ER Coordinates Review Cycle	15SEP94A	30SEP94A	5	0
50047	Incorporate ER Comments	7OCT94A	21OCT94A	20	0
50048	DOE Review Health & Safety Plan	24OCT94A	4NOV94A	15	0
50049	Incorporate DOE Comments	7NOV94A	18NOV94A	10	0
50050	Final Health & Safety Plan Approval		18NOV94A	0	0
212	Site Use Review Board (SURB)	17OCT94A	9NOV94A	18	0
209	Reapply to SURB - Prepare documentation	17OCT94A	28OCT94A	15	0
210	SURB Review	31OCT94A	4NOV94A	3	0
902	Submit to SURB for Approval		4NOV94A	0	0
211	SURB Approval		9NOV94A	0	0
50114	NEPA Regulatory Compliance	27MAY94A	7APR95	215	15
50117	Environmental Checklist/Cat Ex Deactivation	27MAY94A	8NOV94A	115	0
50118	Prepare Environ Checklist/Cat. Ex. Deactivation	27MAY94A	3JUN94A	5	0
50119	Submit Environmental Checklist to NEPA Deact		3JUN94A	0	0
50120	END Review Checklist Deactivation	3JUN94A	3JUN94A	10	0
50121	END Presents Checklist to NEPA Compliance Deact	3JUN94A	3JUN94A	5	0
50122	Prepare Categorical Exclusion for Deactivation	6JUN94A	7JUL94A	14	0
50123	Submit Categorical Exclusion to DOE		7JUL94A	0	0
50124	DOE Review and Comment on CX for Deactivation	8JUL94A	2SEP94A	15	0
50125	Incorporate Comments and Finalize Deactivation	6SEP94A	8NOV94A	5	0
224	Estimate Waste Types and Volumes	8NOV94A	21NOV94A	10	0
50183	Submittal of Approved SURB to NEPA	10NOV94A	25NOV94A	15	0
199	Environmental Checklist/NEPA Documentation	22NOV94A	7APR95	91	15
200	Revise Environmental Checklist	22NOV94A	25NOV94A	5	0
900	Submit Environmental Checklist/NEPA Doc.		25NOV94A	0	0
450	END Committee Review of NEPA Checklist	5DEC94A	9DEC94A	5	0
201	Prepare Categorical Exclusion for Deactivation	12DEC94A	23DEC94A	5	0
50184	NEPA Redetermination of CX or EA for D&D	12DEC94A	3FEB95A	15	0



Activity Classification: Sort Code
Hammock Level 1 Hammock Level 2

Plot Date	24MAR95
Data Date	20MAR95
Project Start	1APR94
Project Finish	16JUN97

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

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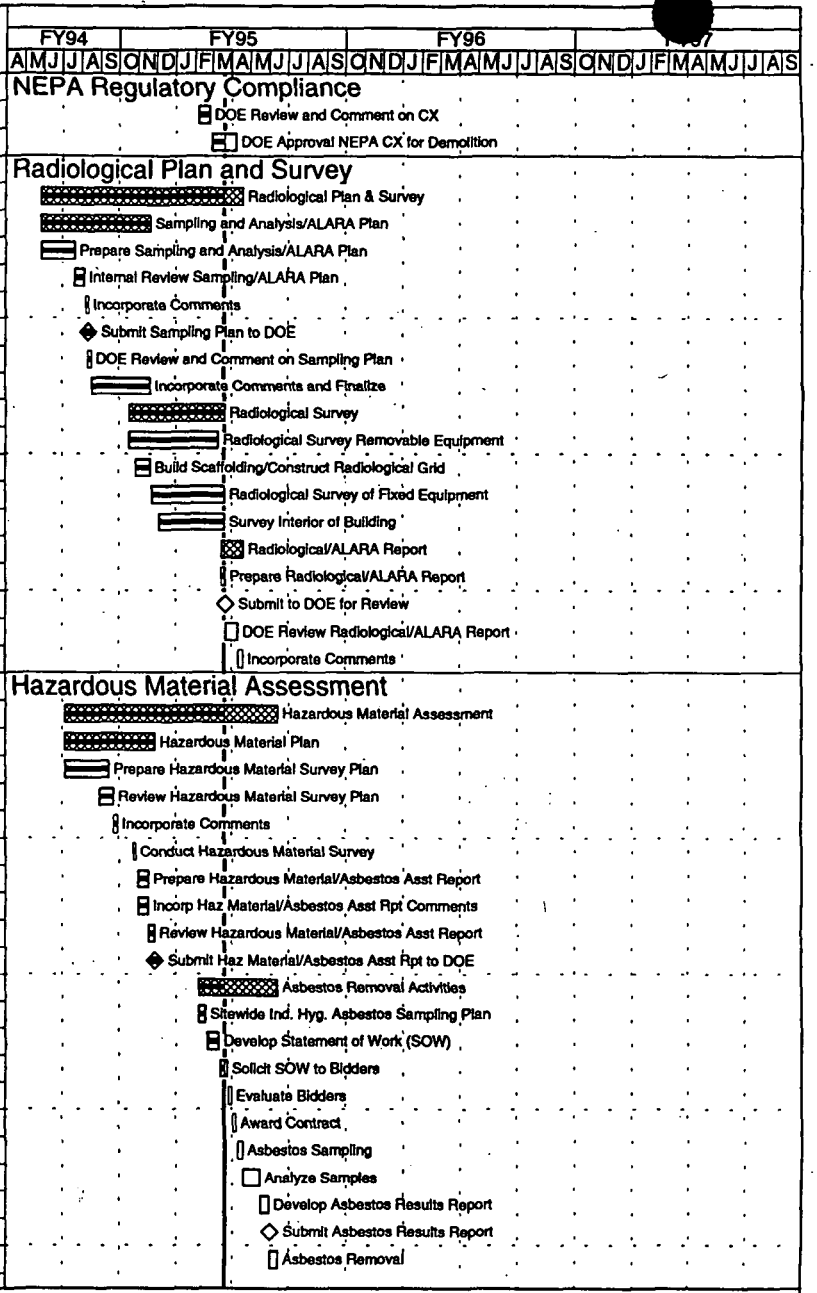
Sheet 2 of 7

EG&G Rocky Flats Inc.
WORK PACKAGE 13003
Building 889 Complete Demolition

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	EARLY START	EARLY FINISH	DUR	REM DUR
203	DOE Review and Comment on CX	6FEB95A	24FEB95A	15	0
50185	DOE Approval NEPA CX for Demolition	27FEB95A	7APR95	30	15
50046	Radiological Plan & Survey	27MAY94A	19APR95	222	22
50051	Sampling and Analysis/ALARA Plan	27MAY94A	21NOV94A	124	0
50052	Prepare Sampling and Analysis/ALARA Plan	27MAY94A	20JUL94A	11	0
50053	Internal Review Sampling/ALARA Plan	20JUL94A	5AUG94A	10	0
50054	Incorporate Comments	8AUG94A	12AUG94A	5	0
50055	Submit Sampling Plan to DOE		12AUG94A	0	0
50056	DOE Review and Comment on Sampling Plan	12AUG94A	17AUG94A	15	0
50057	Incorporate Comments and Finalize	18AUG94A	21NOV94A	5	0
50000	Radiological Survey	17OCT94A	20MAR95	103	1
50059	Radiological Survey Removable Equipment	17OCT94A	10MAR95A	30	0
50058	Build Scaffolding/Construct Radiological Grid	28OCT94A	21NOV94A	10	0
50060	Radiological Survey of Fixed Equipment	23NOV94A	20MAR95	22	1
50061	Survey Interior of Building	5DEC94A	20MAR95	30	1
50062	Radiological/ALARA Report	15MAR95A	19APR95	25	22
50063	Prepare Radiological/ALARA Report	15MAR95A	21MAR95	5	2
50064	Submit to DOE for Review		21MAR95	0	0
50065	DOE Review Radiological/ALARA Report	22MAR95	11APR95	15	15
50066	Incorporate Comments	12APR95	19APR95	5	5
50073	Hazardous Material Assessment	5JUL94A	13JUN95	235	60
50072	Hazardous Material Plan	5JUL94A	28NOV94A	102	0
50074	Prepare Hazardous Material Survey Plan	5JUL94A	14SEP94A	15	0
50075	Review Hazardous Material Survey Plan	30AUG94A	22SEP94A	10	0
50076	Incorporate Comments	23SEP94A	29SEP94A	5	0
50082	Conduct Hazardous Material Survey	24OCT94A	27OCT94A	5	0
50091	Prepare Hazardous Material/Asbestos Asst Report	31OCT94A	17NOV94A	10	0
50093	Incorp Haz Material/Asbestos Asst Rpt Comments	1NOV94A	17NOV94A	5	0
50092	Review Hazardous Material/Asbestos Asst Report	18NOV94A	28NOV94A	5	0
50094	Submit Haz Material/Asbestos Asst Rpt to DOE		28NOV94A	0	0
50096	Asbestos Removal Activities	6FEB95A	13JUN95	90	60
50090	Sitewide Ind. Hyg. Asbestos Sampling Plan	6FEB95A	17FEB95A	10	0
316	Develop Statement of Work (SOW)	20FEB95A	10MAR95A	15	0
321	Solicit SOW to Bidders	13MAR95A	24MAR95	10	5
326	Evaluate Bidders	27MAR95	31MAR95	5	5
331	Award Contract	3APR95	7APR95	5	5
50095	Asbestos Sampling	10APR95	17APR95	5	5
50100	Analyze Samples	18APR95	15MAY95	20	20
50110	Develop Asbestos Results Report	16MAY95	30MAY95	10	10
50115	Submit Asbestos Results Report		30MAY95	0	0
50116	Asbestos Removal	31MAY95	13JUN95	10	10



Activity Classification: Sort Code

Hammock Level 1 — Hammock Level 2

Plot Date	24MAR95
Data Date	20MAR95
Project Start	1APR94
Project Finish	16JUN97

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

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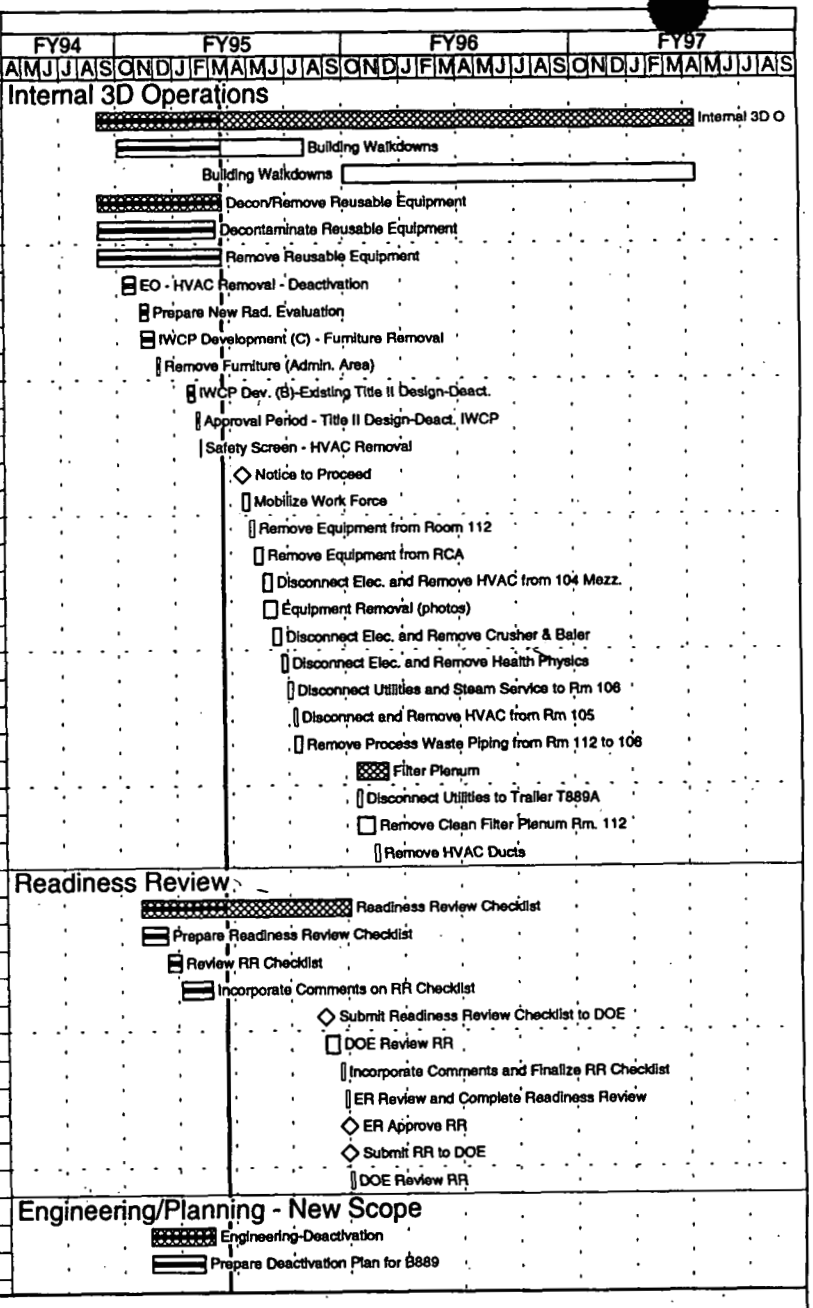
Sheet 3 of 7

EG&G Rocky Flats Inc.
WORK PACKAGE 13003
Building 889 Complete Demolition

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	EARLY START	EARLY FINISH	ORIG DUR	REM DUR
289	Internal 3D Operations	1SEP94A	18APR97	653	520
460	Building Walkdowns	3OCT94A	31JUL95	195	93
460A	Building Walkdowns	2OCT95	18APR97	384	384
50145	Decon/Remove Reusable Equipment	1SEP94A	20MAR95	134	1
50146	Decontaminate Reusable Equipment	1SEP94A	10MAR95A	10	0
50147	Remove Reusable Equipment	1SEP94A	20MAR95	10	1
101	EO - HVAC Removal - Deactivation	11OCT94A	31OCT94A	15	0
225	Prepare New Rad. Evaluation	8NOV94A	21NOV94A	10	0
119	IWCP Development (C) - Furniture Removal	9NOV94A	30NOV94A	15	0
280	Remove Furniture (Admin. Area)	5DEC94A	9DEC94A	5	0
50180	IWCP Dev. (B)-Existing Title II Design-Deact.	23JAN95A	3FEB95A	10	0
144	Approval Period - Title II Design-Deact. IWCP	6FEB95A	10FEB95A	5	0
102	Safety Screen - HVAC Removal	13FEB95A	13FEB95A	1	0
50143	Notice to Proceed	20APR95		0	0
50144	Mobilize Work Force	20APR95	1MAY95	8	8
301	Remove Equipment from Room 112	2MAY95	8MAY95	5	5
300	Remove Equipment from RCA	9MAY95	22MAY95	10	10
302	Disconnect Elec. and Remove HVAC from 104 Mezz.	23MAY95	6JUN95	10	10
50039	Equipment Removal (photos)	23MAY95	13JUN95	15	15
303	Disconnect Elec. and Remove Crusher & Baler	7JUN95	20JUN95	10	10
304	Disconnect Elec. and Remove Health Physics	21JUN95	29JUN95	7	7
305	Disconnect Utilities and Steam Service to Rm 106	30JUN95	7JUL95	5	5
307	Disconnect and Remove HVAC from Rm 105	10JUL95	14JUL95	5	5
306	Remove Process Waste Piping from Rm 112 to 106	10JUL95	21JUL95	10	10
260	Filter Plenum	18OCT95	7DEC95	35	35
271	Disconnect Utilities to Trailer T889A	18OCT95	24OCT95	5	5
288	Remove Clean Filter Plenum Rm. 112	18OCT95	14NOV95	20	20
261	Remove HVAC Ducts	15NOV95	21NOV95	5	5
50130	Readiness Review Checklist	3NOV94A	6OCT95	230	141
50131	Prepare Readiness Review Checklist	3NOV94A	14DEC94A	10	0
50132	Review RR Checklist	15DEC94A	5JAN95A	10	0
50133	Incorporate Comments on RR Checklist	6JAN95A	24FEB95A	5	0
50134	Submit Readiness Review Checklist to DOE		24AUG95	0	0
50135	DOE Review RR	25AUG95	15SEP95	15	15
50136	Incorporate Comments and Finalize RR Checklist	18SEP95	22SEP95	5	5
50137	ER Review and Complete Readiness Review	25SEP95	29SEP95	5	5
50138	ER Approve RR		29SEP95	0	0
50139	Submit RR to DOE		29SEP95	0	0
50140	DOE Review RR	2OCT95	6OCT95	5	5
50002	Engineering-Deactivation	14NOV94A	24FEB95A	67	0
50020	Prepare Deactivation Plan for B889	14NOV94A	7FEB95A	20	0



Activity Classification: Sort Code
Hammock Level 1
Hammock Level 2

Plot Date 24MAR95
Data Date 20MAR95
Project Start 1APR94
Project Finish 16JUN97

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

8891

Sheet 4 of 7

EG&G Rocky Flats Inc.
WORK PACKAGE 13003
Building 889 Complete Demolition

Date	Revision	Checked	Approved

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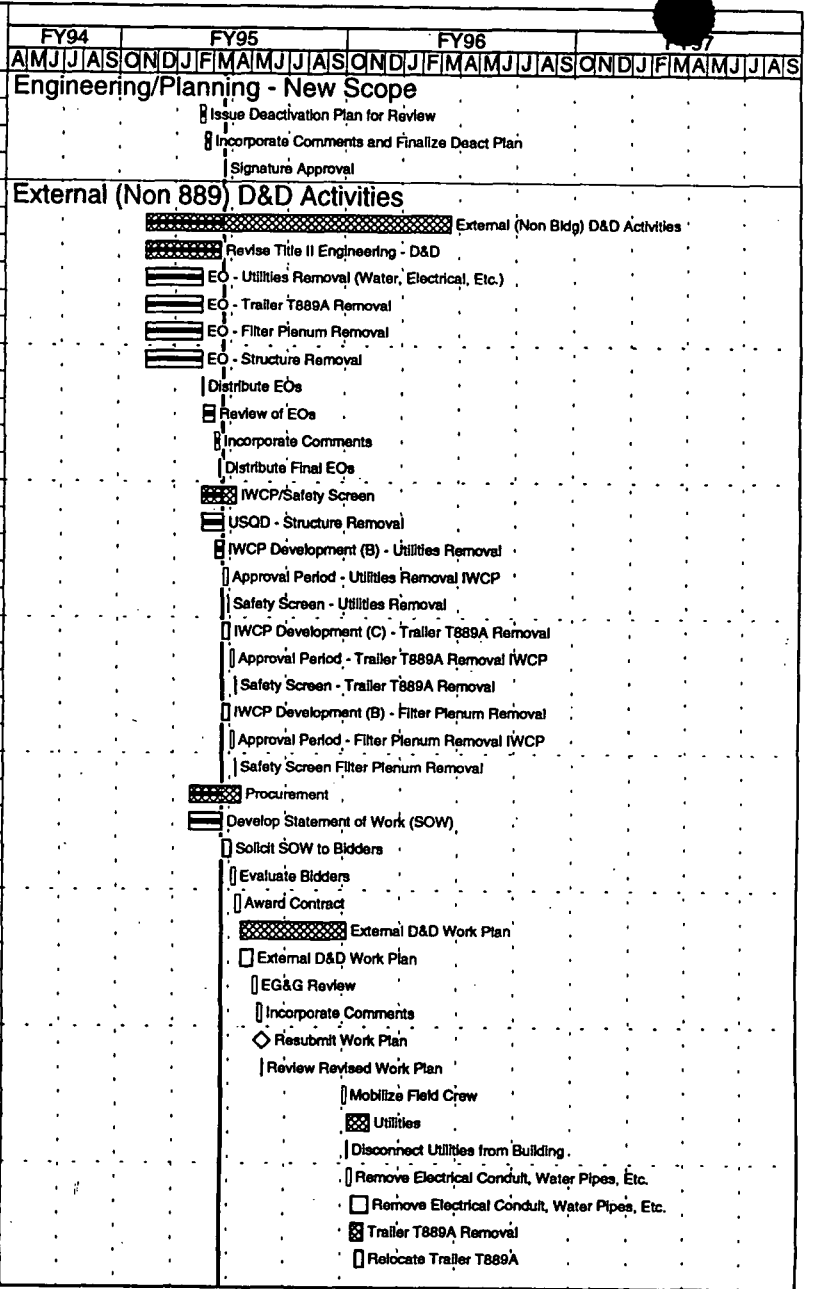
ACTIVITY ID	ACTIVITY DESCRIPTION	EARLY START	EARLY FINISH	DUR	REM DUR
50021	Issue Deactivation Plan for Review	8FEB95A	15FEB95A	5	0
50022	Incorporate Comments and Finalize Deact Plan	16FEB95A	24FEB95A	5	0
50023	Signature Approval	20MAR95	21MAR95	5	2
99	External (Non Bldg) D&D Activities	14NOV94A	18MAR96	331	249
100	Revise Title II Engineering - D&D	14NOV94A	15MAR95A	80	0
104	EO - Utilities Removal (Water, Electrical, Etc.)	14NOV94A	13FEB95A	15	0
110	EO - Trailer T889A Removal	14NOV94A	13FEB95A	15	0
113	EO - Filter Plenum Removal	14NOV94A	13FEB95A	15	0
116	EO - Structure Removal	14NOV94A	13FEB95A	15	0
120	Distribute EOs	14FEB95A	15FEB95A	2	0
121	Review of EOs	16FEB95A	6MAR95A	10	0
122	Incorporate Comments	7MAR95A	13MAR95A	5	0
123	Distribute Final EOs	14MAR95A	15MAR95A	2	0
107	IWCP/Safety Screen	14FEB95A	10APR95	40	16
117	USQD - Structure Removal	14FEB95A	20MAR95	15	1
106	IWCP Development (B) - Utilities Removal	8MAR95A	21MAR95	10	2
141	Approval Period - Utilities Removal IWCP	22MAR95	28MAR95	5	5
105	Safety Screen - Utilities Removal	29MAR95	29MAR95	1	1
112	IWCP Development (C) - Trailer T889A Removal	20MAR95	31MAR95	10	10
142	Approval Period - Trailer T889A Removal IWCP	3APR95	7APR95	5	5
111	Safety Screen - Trailer T889A Removal	10APR95	10APR95	1	1
115	IWCP Development (B) - Filter Plenum Removal	20MAR95	31MAR95	10	10
143	Approval Period - Filter Plenum Removal IWCP	3APR95	7APR95	5	5
114	Safety Screen Filter Plenum Removal	10APR95	10APR95	1	1
595	Procurement	27JAN95A	19APR95	58	22
600	Develop Statement of Work (SOW)	27JAN95A	21MAR95	15	2
605	Solicit SOW to Bidders	22MAR95	4APR95	10	10
610	Evaluate Bidders	5APR95	11APR95	5	5
615	Award Contract	12APR95	19APR95	5	5
909	External D&D Work Plan	20APR95	6OCT95	119	119
910	External D&D Work Plan	20APR95	10MAY95	15	15
915	EG&G Review	11MAY95	17MAY95	5	5
920	Incorporate Comments	18MAY95	24MAY95	5	5
925	Resubmit Work Plan		24MAY95	0	0
930	Review Revised Work Plan	25MAY95	26MAY95	2	2
620	Mobilize Field Crew	2OCT95	6OCT95	5	5
284	Utilities	9OCT95	14NOV95	27	27
285	Disconnect Utilities from Building	9OCT95	10OCT95	2	2
287	Remove Electrical Conduit, Water Pipes, Etc.	11OCT95	17OCT95	5	5
287A	Remove Electrical Conduit, Water Pipes, Etc.	18OCT95	14NOV95	20	20
270	Trailer T889A Removal	18OCT95	7NOV95	15	15
272	Relocate Trailer T889A	25OCT95	7NOV95	10	10



Activity Classification: Sort Code
Hammock Level 1
Hammock Level 2

Plot Date 24MAR95
Data Date 20MAR95
Project Start 1APR94
Project Finish 16JUN97

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

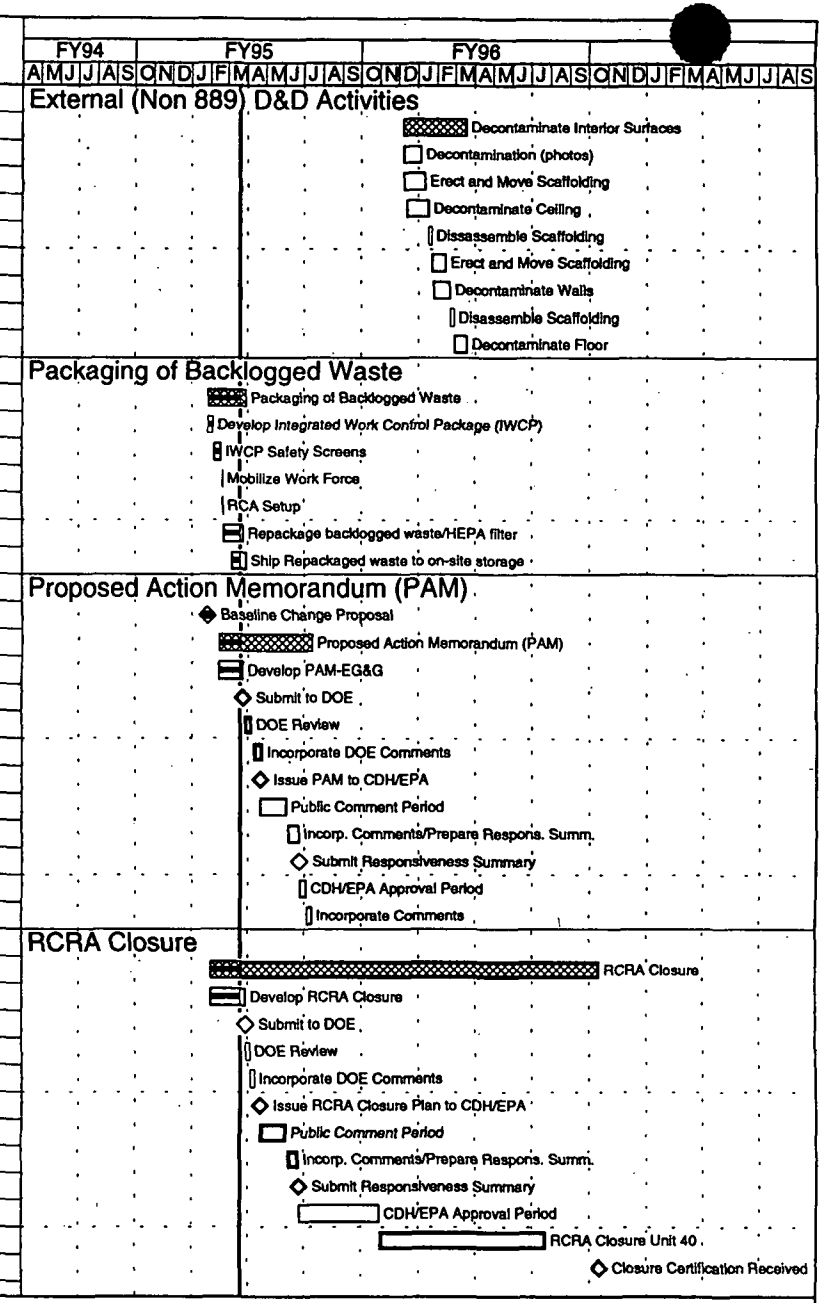
8891

Sheet 5 of 7

EG&G Rocky Flats Inc.
WORK PACKAGE 13003
Building 889 Complete Demolition

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	EARLY START	EARLY FINISH	DUR	REM DUR
290	Decontaminate Interior Surfaces	8DEC95	18MAR96	66	66
50040	Decontamination (photos)	8DEC95	5JAN96	15	15
50154	Erect and Move Scaffolding	8DEC95	11JAN96	19	19
50155	Decontaminate Ceiling	13DEC95	17JAN96	20	20
50156	Dissassemble Scaffolding	18JAN96	22JAN96	3	3
50157	Erect and Move Scaffolding	23JAN96	14FEB96	17	17
50158	Decontaminate Walls	25JAN96	20FEB96	19	19
50159	Disassemble Scaffolding	21FEB96	26FEB96	4	4
50160	Decontaminate Floor	27FEB96	18MAR96	15	15
150	Packaging of Backlogged Waste	27JAN95A	29MAR95	44	8
155	Develop Integrated Work Control Package (IWCP)	27JAN95A	3FEB95A	15	0
160	IWCP Safety Screens	6FEB95A	17FEB95A	10	0
165	Mobilize Work Force	20FEB95A	20FEB95A	5	0
170	RCA Setup	20FEB95A	20FEB95A	5	0
175	Repackage backlogged waste/HEPA filter	21FEB95A	24MAR95	20	5
180	Ship Repackaged waste to on-site storage	6MAR95A	29MAR95	18	8
395	Baseline Change Proposal		26JAN95A	0	0
400	Proposed Action Memorandum (PAM)	13FEB95A	13JUL95	106	81
405	Develop PAM-EG&G	13FEB95A	24MAR95	30	5
406	Submit to DOE		24MAR95	0	0
407	DOE Review	27MAR95	7APR95	10	10
408	Incorporate DOE Comments	10APR95	24APR95	10	10
410	Issue PAM to CDH/EPA		20APR95	0	0
415	Public Comment Period	21APR95	2JUN95	30	30
420	Incorp. Comments/Prepare Respons. Summ.	5JUN95	22JUN95	14	14
425	Submit Responsiveness Summary		22JUN95	0	0
430	CDH/EPA Approval Period	23JUN95	3JUL95	7	7
435	Incorporate Comments	5JUL95	13JUL95	7	7
800	RCRA Closure	31JAN95A	16OCT98	431	397
805	Develop RCRA Closure	31JAN95A	28MAR95	30	7
411	Submit to DOE		28MAR95	0	0
412	DOE Review	29MAR95	4APR95	5	5
413	Incorporate DOE Comments	5APR95	11APR95	5	5
810	Issue RCRA Closure Plan to CDH/EPA		20APR95	0	0
815	Public Comment Period	21APR95	2JUN95	30	30
820	Incorp. Comments/Prepare Respons. Summ.	5JUN95	22JUN95	14	14
825	Submit Responsiveness Summary		22JUN95	0	0
830	CDH/EPA Approval Period	23JUN95	30OCT95	90	90
561	RCRA Closure Unit 40	31OCT95	23JUL96	180	180
562	Closure Certification Received		16OCT96	0	0



Activity Classification: Sort Code
Hammock Level 1 — Hammock Level 2

Plot Date 24MAR95
Data Date 20MAR95
Project Start 1APR94
Project Finish 16JUN97

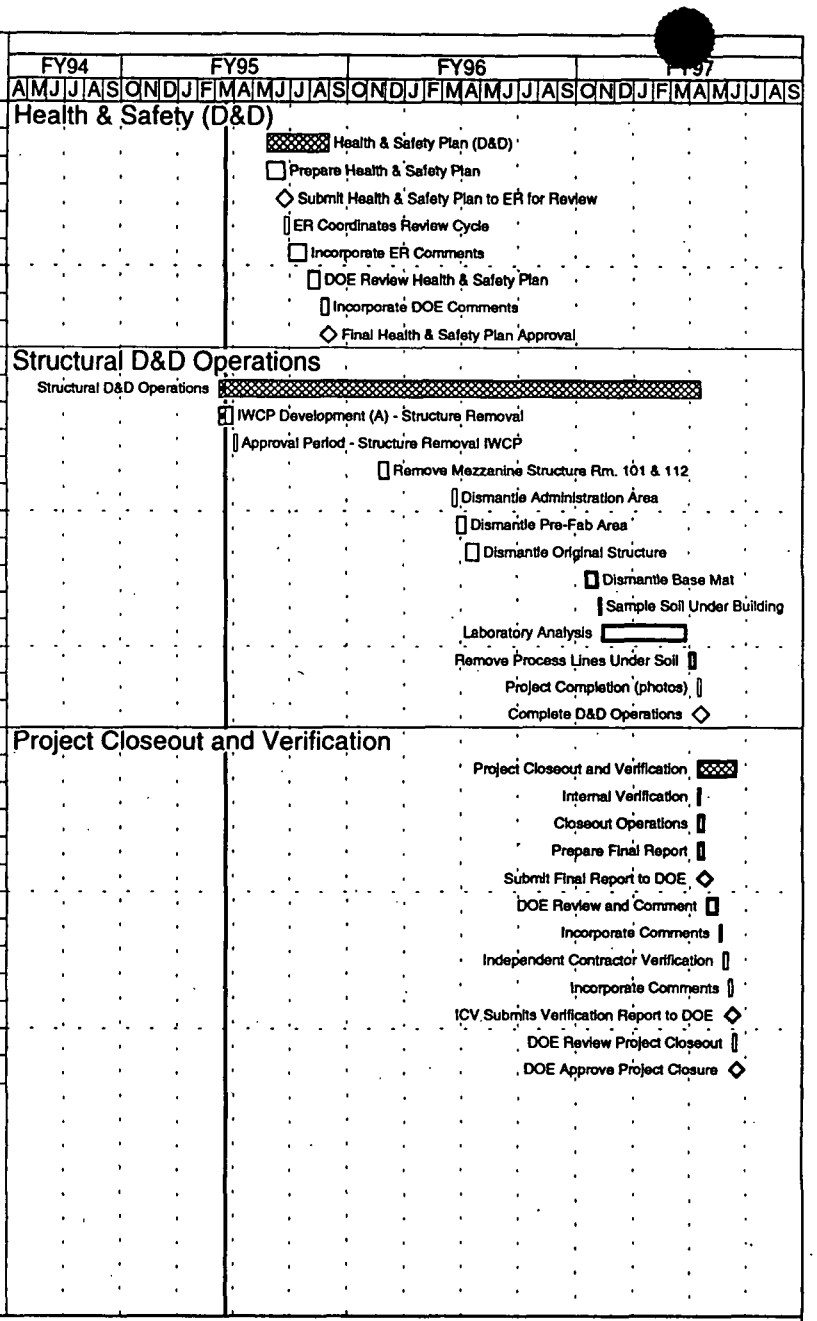
Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

8891 Sheet 6 of 7

EG&G Rocky Flats Inc.
WORK PACKAGE 13003
Building 889 Complete Demolition

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	EARLY START	EARLY FINISH	DUR	REM DUR
700	Health & Safety Plan (D&D)	25MAY95	1SEP95	70	70
705	Prepare Health & Safety Plan	25MAY95	22JUN95	20	20
710	Submit Health & Safety Plan to ER for Review		22JUN95	0	0
715	ER Coordinates Review Cycle	23JUN95	29JUN95	5	5
720	Incorporate ER Comments	30JUN95	28JUL95	20	20
725	DOE Review Health & Safety Plan	31JUL95	18AUG95	15	15
730	Incorporate DOE Comments	21AUG95	1SEP95	10	10
735	Final Health & Safety Plan Approval		1SEP95	0	0
263	Structural D&D Operations	9MAR95A	18APR97	527	520
118	IWCP Development (A) - Structure Removal	9MAR95A	31MAR95	10	10
140	Approval Period - Structure Removal IWCP	3APR95	7APR95	5	5
262	Remove Mezzanine Structure Rm. 101 & 112	22NOV95	7DEC95	10	10
291	Dismantle Administration Area	19MAR96	25MAR96	5	5
292	Dismantle Pre-Fab Area	26MAR96	9APR96	10	10
293	Dismantle Original Structure	10APR96	30APR96	15	15
294	Dismantle Base Mat	17OCT96	6NOV96	15	15
296	Sample Soil Under Building	7NOV96	11NOV96	3	3
297	Laboratory Analysis	12NOV96	27MAR97	90	90
295	Remove Process Lines Under Soil	31MAR97	11APR97	10	10
50041	Project Completion (photos)	14APR97	18APR97	5	5
50503	Complete D&D Operations		18APR97	0	0
50167	Project Closeout and Verification	14APR97	16JUN97	45	45
50169	Internal Verification	14APR97	18APR97	5	5
50168	Closeout Operations	14APR97	25APR97	10	10
50170	Prepare Final Report	14APR97	25APR97	10	10
50171	Submit Final Report to DOE		25APR97	0	0
50172	DOE Review and Comment	28APR97	16MAY97	15	15
50173	Incorporate Comments	19MAY97	23MAY97	5	5
50174	Independent Contractor Verification	26MAY97	2JUN97	5	5
50175	Incorporate Comments	3JUN97	9JUN97	5	5
50176	ICV Submits Verification Report to DOE		9JUN97	0	0
50177	DOE Review Project Closeout	10JUN97	16JUN97	5	5
50178	DOE Approve Project Closure		16JUN97	0	0



Activity Classification: Sort Code
Hammock Level 1
Hammock Level 2

Plot Date	24MAR95
Data Date	20MAR95
Project Start	1APR94
Project Finish	16JUN97

(c) Primavera Systems, Inc.

Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

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Sheet 7 of 7

EG&G Rocky Flats Inc.
WORK PACKAGE 13003
Building 889 Complete Demolition

Date	Revision	Checked	Approved

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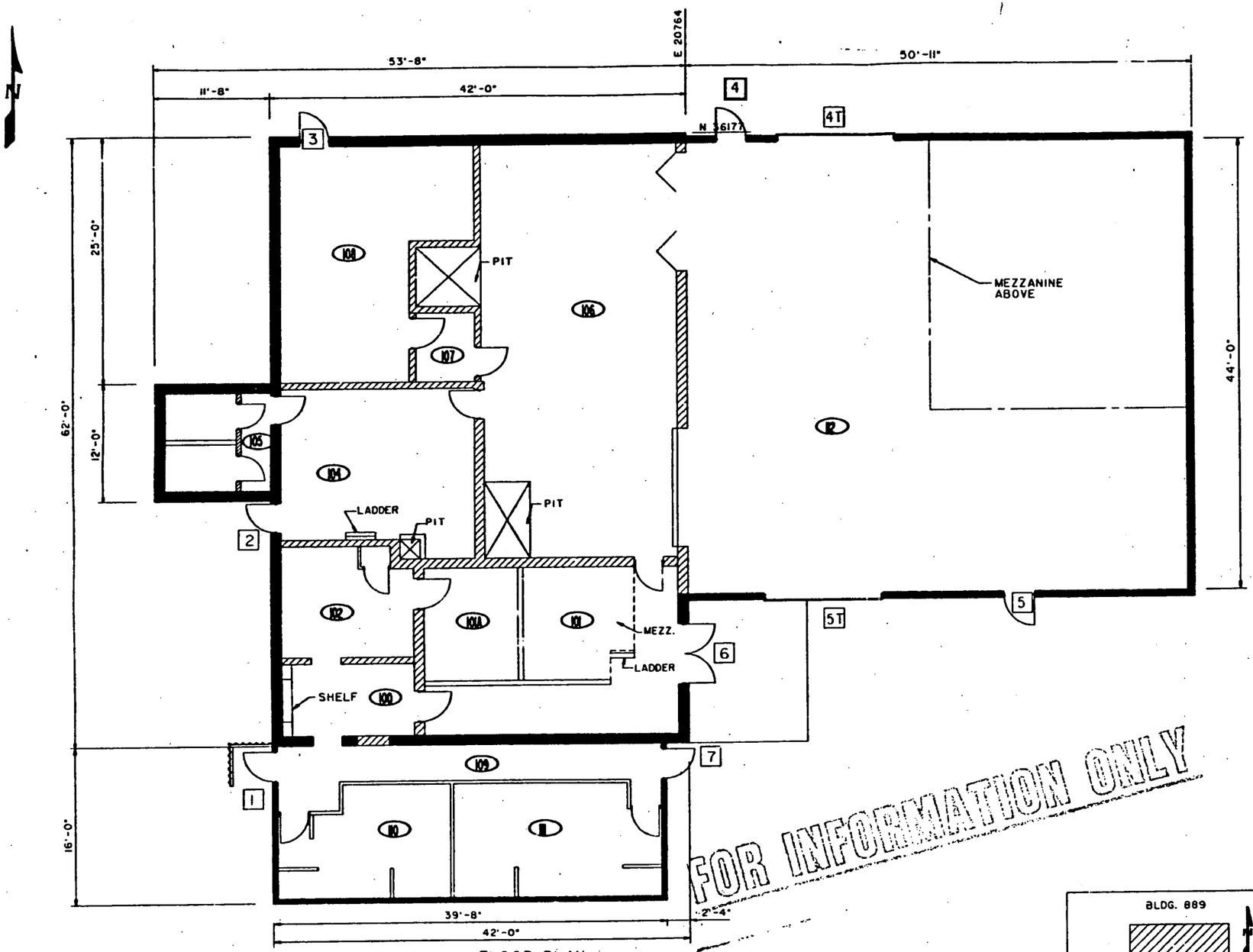

FLOOR PLAN
SCALE: 3/16" = 1'-0"

LEGEND

- EXTERIOR WALL
- CONCRETE WALL
- CONCRETE BLOCK WALL
- PARTITION WALL
- (XXX) ROOM NUMBER
- [XX] EXTERIOR DOOR NUMBER
- CERAMIC TILE WALLS

BUILDING AREA-FIRST FLOOR
5493 SQ.FT.

DOES NOT CONTAIN
UNCLASSIFIED CONTROLLED
NUCLEAR INFORMATION

Reviewing Official: S. L. CUNNINGHAM
Name
Date: 2/25/03

[redacted]

FOR REFERENCE ONLY

FOR INFORMATION ONLY

MASTER DRAWING
MAINTAIN AS-BUILT PER COEM 6.6.2
GROUP RESPONSIBLE SCC

BLDG. 889
KEY PLAN
SCALE: NONE

KEYWORDS
1. FLOOR
2. PLAN
3.
4.
5.
BUILDING NUMBER 889

	DESCRIPTION	BY	DATE
G	REVISED - ADDITION/DOOR NUMBERS		1-26-93
F	REDRAWN		12-1-87
	DESIGNED		
	DRAWN	MOLLY	8-14-87
	CHECKED	BARR	10-26-87
	APPROVED	TERKUN	12-1-87

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMALS ANGULAR
REMOVE BURRS AND SHARP EDGES
SCALE 3/16"=1'-0"

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS OFFICE GOLDEN, COLORADO

Rocky Flats Plant
GOLDEN, COLORADO

BUILDING 889
FIRST FLOOR PLAN

D|30889-1-M|G

RETAIN COPY

COMPUTER GENERATED
NO MANUAL CHANGES ALLOWED

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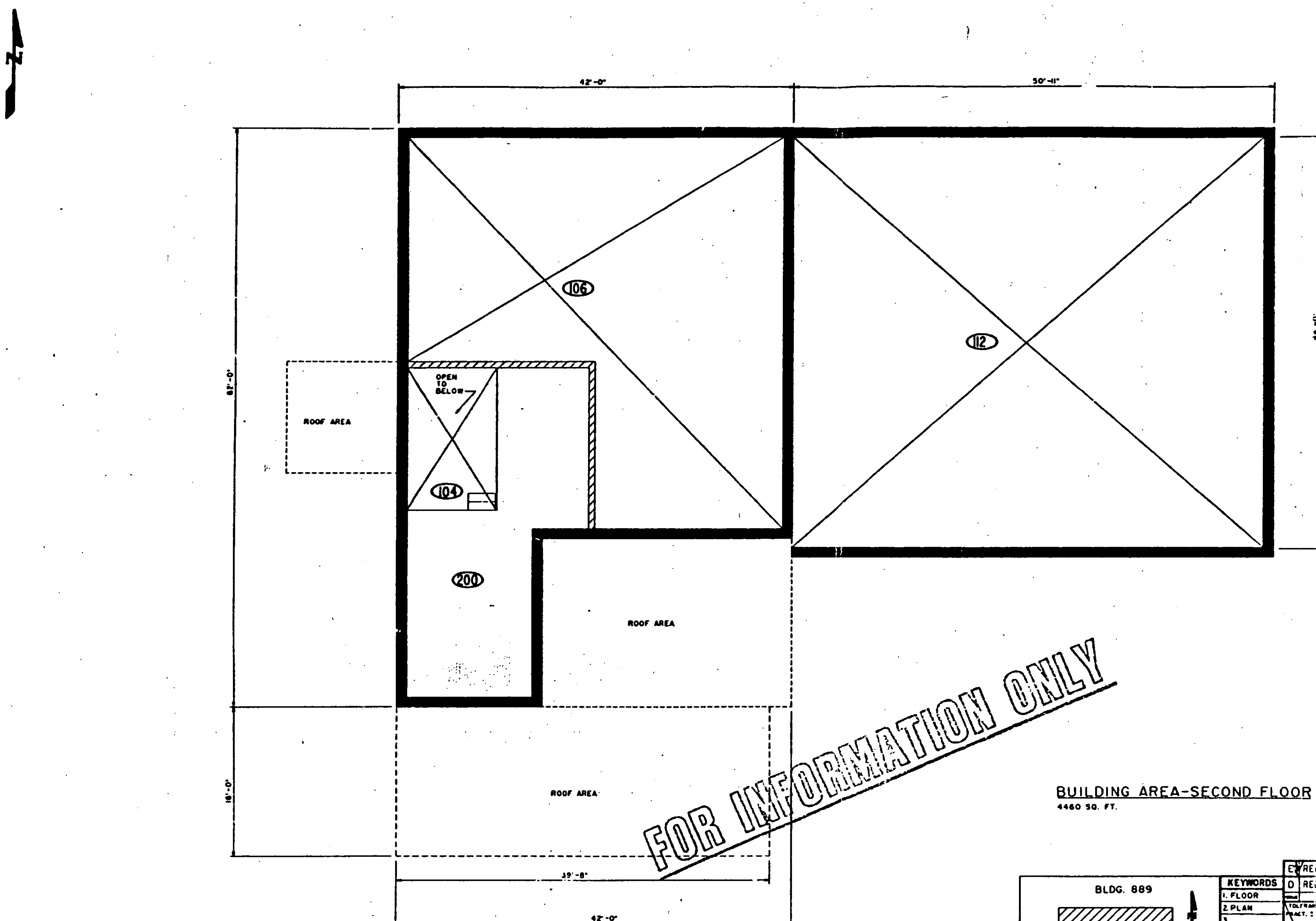

FLOOR PLAN
SCALE: 3/16" = 1'-0"

LEGEND

- EXTERIOR WALL
- CONCRETE WALL
- CONCRETE BLOCK WALL
- PARTITION WALL
- (XXX) ROOM NUMBER
- [XX] EXTERIOR DOOR NUMBER

BUILDING AREA-SECOND FLOOR
4460 SQ. FT.

DOES NOT CONTAIN
UNCLASSIFIED CONTROLLED
NUCLEAR INFORMATION

Reviewing Official: S. L. CUNNINGHAM
Name

Date: 2/25/03

[redacted]

FOR REFERENCE ONLY

MASTER DRAWING
MAINTAIN AS-BUILT PER COEM 6.6.2
GROUP RESPONSIBLE ____SEC____

BLDG. 889

KEY PLAN
SCALE NO.

RETAIN COPY

KEYWORDS
1. FLOOR
2. PLAN
3.
4.
5.
BLDG/FACILITY 889

E	REVISION- ADDITION ROOM 112	1-26-93				104593
D	REDRAWN	12-1-87	MP AB JT		LMS	
	DESCRIPTION	DATE	EFP	DOE	CLASS	JOB NO

	BY	DATE
DESIGNED		
DRAWN	MOLLY	8-14-87
CHECKED	BANR	10-26-87
APPROVED	TERKUN	12-1-87

SCALE 3/16"=1'-0"

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS OFFICE GOLDEN, COLORADO

Rocky Flats Plant
GOLDEN, COLORADO

BUILDING 889
SECOND FLOOR PLAN

D 30889-2 M E

COMPUTER GENERATED
NO MANUAL CHANGES ALLOWED
R.MST-04 FP 889.2.2FLP

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