END CONDITION STATEMENT FOR "B-1" SITE

		BLDG 3111 TEST	BLDG 3131 PUMP
I.	READINESS CATEGORY	3	ACTIVE
II.	HEATING SYSTEM	OFF & FREEZE PROTECTED	ACTIVE
III.	DOMESTIC WATER	VALVE CLOSED N.E. OF SHOP BUILDING	
IV.	NATURAL GAS	N/A	ACTIVE
V.	RAW WATER	N/A	N/A
VI.	FIRE PROTECTION	ALL FIRE EXTINGUISHERS REMOVED EXCEPT TWO ON 85' LEVEL. CO_2 SYSTEM DEACTIVATED	ALL FIRE EXTINGUI ACTIVE
VII.	SERVICE AIR	DEPRESSURIZED: VALVE CLOSED INSIDE BOTH BUILDINGS	
VIII.	ELECTRICAL SERVICE	DE-ENERGIZED; MAIN BREAKER OFF IN POWER PANEL #2 IN BUILDING	[illegible]
IX.	SANIT[illegible] FACILITI[illegible]	PR[illegible] & PERSONNEL	ACTI
X.	COM[illegible]NS	PHONES REMOVED; ICOM DE-ENERGIZED	
XI.	BUILDING [illegible] BE	LOCK[illegible]	
XII.	ACTIVE ALAR[illegible]	NONE	
XIII.	AIR CONDITI[illegible]	DE-ENERGIZED	
XIV.	SURVEILLANC[illegible] REQUIRED	AS REQUIRED FOR BU[illegible]ING MAINTENANCE	

The retention [illegible] will not [illegible] level [illegible]

Revised 2-1-87

END CONDITION STATEMENT FOR "B-1" FACILITY (continued)

The condition of this facility is now as indicated below:

Prior to 1979, it was determined that some of the research facilities at the Plum Brook Station would not be kept in "standby" at their intended research configuration.

The research systems and/or equipment were surveyed for use by Lewis-Cleveland and other agencies.

Everything left was incorporated in a salvage contract that would leave the building institutionally intact.

In 1981, the salvage work was completed under GSA Sale No. 50PS-80-9, Contract No. GS-05-DP-(S)-01964.

The institutional part of the building(such as electrical, water, gas, sewage, etc.,) remains fairly intact.

The end condition statement of these systems is as shown on the end condition statement.

SPECIAL JOB ORDER	RECOMMENDED SJO NO. FBP 1003	SJO CHG NO. FBP 1003	REV NO
DATE (Typed) 12-1-77	REF WORK ORDER NO.		UNIQUE PROGRAM NO
REQUESTED BY (Sign and Date) 12-1-77	ORG. CODE 1003	CHIEF REQ. DIV. (Sign and Date) William Keys 1-13-78	022-00
PREPARED BY (Sign and Date) R. J. Koch 12-1-77	ORG. CODE 1003	CHIEF PREP. DIV. (Sign and Date)	ESTIMATED COMPLETION DATE April 30, 1978

DESCRIBE IN DETAIL AND STATE JUSTIFICATION FOR PROPOSED WORK

TITLE: (Include Building Number when applicable)

TSCO (Sign and Date) Bob Heffman (Amx) — SERIAL NO 1023

Removal and Transfer of Freight Elevator from Building No. 3111 (B-1) and four (4) Vacuum Systems from Building No. 2211 (C-Site).

The Martin Marietta Corporation, under Contract NAS8-30382(F) with George C. Marshall Space Flight Center, is to construct a facility at Michoud Assembly Facility. In an effort to reduce costs, George C. Marshall Space Flight Center has surveyed NASA Centers for availability of equipment which could be utilized in the facility to be constructed. Located at the Plum Brook Station is a freight elevator in Building No. 3111 (B-1) and four vacuum systems in Building No. 2211 (C-Site) that can be effectively utilized in the proposed Michoud facility. Therefore, Marshall has requested the transfer of the elevator and vacuum systems for this purpose (see attached Requisition Form DD1149). Facilities No. 3111 and No. 2211 are buildings that have not been established as Standby Facilities at the Plum Brook Station. It is recommended, therefore, that the items listed be removed and transferred as requested in the attached document. The George C. Marshall Space Flight Center will be responsible for all costs associated with the removal and transfer of the equipment to the Michoud Assembly Facility.

Upon receipt of a properly approved SJO, George C. Marshall Space Flight Center will be notified to proceed with the transfer of the equipment specified.

Decrease Real Property - Building No. 3111 - $123,000.00
Building No. 2211 - $ 18,000.00

COST ESTIMATE				APPROVALS (See LMI-9240.2B-Para 6d)		
ITEM			EST. COST	TITLE	SIGNATURE	DATE
STOCK WITHDRAWALS				✓ G. Hennings, Fac Mgr	G. Hennings	1/1/78
CONTRACTS AND PURCHASES				✓ SAFETY AUTHORITY	William Brown	1/11/78
A & E CONTRACTS				✓ Mgr, Plum Brook Sta	[illegible]	12/27/77
COLLATERAL EQUIPMENT				✓ DIRECTOR (Requesting Org.)	William Keys	1-13-78
SUBTOTAL COST →			—0—	✓ DIRECTOR ENG. SERV.	[illegible]	1-16-78
INHOUSE MANPOWER	MANHOURS	RATE		DIRECTOR TECH. SERV.		
ENGINEERING				✓ RESOURCES MGMT. OFFICE	[illegible]	1/17/78
CRAFT WORK				DEPUTY DIRECTOR		
OTHER (Specify)				APPROVED COPY DISTRIBUTION		
SUBTOTAL INHOUSE COST →						
* TOTAL EST. COST →			—0—			
REAL PROPERTY EST ☐ INCREASE XX DECREASE			SEE ABOVE	✓ REAL PROPERTY ACCT. OFF. (Certification)		

* Facility SJO Fund Limitations: Total Est. Cost excluding in-house engineering and design contracts. (Check one)

☐ $25K Minor Constr. ☐ $50K Rehab. & Mod. ☐ $50K Unforseen Prog. Need ☐ $100K Repair

SPECIAL JOB ORDER	RECOMMENDED SJO NO.	SJO CHG. NO.	REV. NO.
DATE (Typed) 1-25-78	REF WORK ORDER NO.		UNIQUE PROGRAM NO.
REQUESTED BY (Sign and Date) Paul Ordin	ORG. CODE 6134	CHIEF REQ. DIV. (Sign and Date)	
PREPARED BY (Sign and Date) A. C. Duncan	ORG. CODE 1003	CHIEF PREP. DIV. (Sign and Date) R. J. Koch, Chief, PB Mgt Off	ESTIMATED COMPLETION DATE 3-1-78

DESCRIBE IN DETAIL AND STATE JUSTIFICATION FOR PROPOSED WORK
TITLE: *(Include Building Number when applicable)*

TSCO *(Sign and Date)*

SERIAL NO.

Removal of the LH_2 Vacuum-Jacketed Transfer Line beginning at the B-3 Line Tee and Ending at Building No. 3111 (B-1 Facility)

Approximately 100 feet of vacuum-jacketed line is needed for a hydrogen spill test, a project of Langley Research Center conducted by JPL at the China Lake Naval Facility.

Located at Plum Brook is approximately 300 lineal feet of two-inch vacuum-jacketed transfer line at the B-1 Test Complex that can be effectively used for this project. Therefore, Langley Research Center has requested, through Paul Ordin, Safety Technology Section (6134), the transfer of approximately 100 lineal feet of two-inch vacuum-jacketed transfer line for this purpose.

For aesthetic reasons it is recommended that the complete line be removed, along with all the support structure with the remaining vacuum-jacketed line to be placed into storage or excessed. It is recommended, therefore, that the vacuum-jacketed transfer line be removed and that part requested be transferred to Langley Research Center who will be responsible for all costs associated with the removal and transfer of the line to China Lake Naval facilities.

Upon receipt of a properly approved SJO, Langley will be notified to proceed with the transfer of the property specified.

Decrease in Real Property - Estimated $108,000.00

COST ESTIMATE			
ITEM			EST. COST
STOCK WITHDRAWALS			
CONTRACTS AND PURCHASES			
A & E CONTRACTS			
COLLATERAL EQUIPMENT			
SUBTOTAL COST →			
INHOUSE MANPOWER	MANHOURS	RATE	
ENGINEERING			
CRAFT WORK			
OTHER *(Specify)*			
SUBTOTAL INHOUSE COST →			
* TOTAL EST. COST →			
REAL PROPERTY EST. ☐ INCREASE ☒ DECREASE			

APPROVALS *(See LMI-9240.2B-Para 6d)*		
TITLE	SIGNATURE	DATE
G. Hennings, Fac MGr		
SAFETY AUTHORITY		
Mgr, Plum Brook Sta.		
DIRECTOR *(Requesting Org.)*		
DIRECTOR ENG. SERV.		
DIRECTOR TECH. SERV.		
RESOURCES MGMT. OFFICE		
Director (Prep.Org)		
APPROVED COPY DISTRIBUTION		
REAL PROPERTY ACCT. OFF. *(Certification)*		

* Facility SJO Fund Limitations: Total Est. Cost excluding in-house engineering and design contracts. *(Check one)*

☐ $25K Minor Constr. ☐ $50K Rehab. & Mod. ☐ $50K Unforseen Prog. Need ☐ $100K Repair

NASA-C-301 (Rev. 1-76)

The following are the systems and procedures by "B-1" Facility will be phased down, not necessarily in the order listed.

1. Heating
2. Gas
3. Raw Water (not applicable)
4. Domestic Water
5. Air
6. Sanitary Facilities
7. Plant Equipment
8. Electrical
9. Security and Pest Control
10. Tools
11. Special

HEATING SYSTEM STATEMENT

OPERATION I (FALL 1973)

The larger of the two (2) boilers located on the north end of Building 3131 shall be shut off and the smaller one activated for heat in 3131.

1. Shutdown Procedure - Pump and Shop Building #3131
   a. Fire Unit, start circulating pumps and add sufficient calgon (CS) inhibitor to insure 6,000 PPM or greater in the system.
   b. Turn off pumps and switch on boiler. Turn off disconnect on wall to boiler.
   c. Close gas valve to boiler, break line, purge, cap and plug ends.
   d. Close water supply valve on the make up line and purge back to first valve. Cap and plug ends.
   e. Open boiler, remove loose rust and scale, and coat tubes in fire box with P-10.
2. Startup Procedures
   a. Clean oil from tubes in fire box.
   b. Reconnect water make up and gas lines and open valves.
   c. Turn unit on electrically and bring to normal operating temperature. Check all lines, valves, and unit heaters for leaks. Set temperatures at desired settings. Check water/glycol level in system.
3. Heating System Statement - Operation II (Spring 1974)
   a. The smaller boiler shall now be deactivated and all heating at the "B-1" Facilities shall be terminated.
      (1) Shutdown Procedure - Pump and Shop Building #3131

      Duplicate the procedures in Operation I for shutdown and startup of the remaining boilers.

"B-1" TEST FACILITY NATURAL GAS SYSTEM SHUTDOWN PROCEDURE

All lines will be vented and purged with GN_2. Vents will be closed and systems leff at atmospheric pressure. Gas system will be severed from field system and openings capped.

1. Pump and Shop Building #3131
   a. Close G4V023. NOTE: This valve will also shut off gas service to Valve House #5232 therefore this procedure cannot be done if gas service to 5232 is required.
   b. Vent gas system in 3131 and purge with GN_2.
   c. Disconnect building gas piping as near as possible to point of entry to building and cap openings.

"B-1" TEST FACILITY NATURAL GAS SYSTEM STARTUP PROCEDURE

1. Pump and Shop Building #3131

   a. Remove caps and reconnect building system to supply.

   b. Check piping integrity of NG system in building.

   c. Open G4V023.

   d. Check entire system for leaks.

"B-1" TEST FACILITY DOMESTIC WATER SHUTDOWN PROCEDURE

All domestic water lines in buildings will be drained. All lines entering buildings from underground will be capped, pumped out and scaled. Entire system will be sealed from atmosphere.

1. Test Building #3111
   a. Close valve DIV~~#6~~ 123 and ~~Open~~ DIV~~#7~~
   b. Check that item 1.a. under "B-1" Plant Equipment Shutdown Procedures has been put into standby.
   c. Open faucets on lavatory and sink.
   d. Open drain on hot water heater.
   e. Operate flush valves on urinal and stool until lines are drained.
   f. On the 68' level block open flush valve on urinal.
   g. Outside restroom at +8' level remove 3" hand valve from domestic water line.
   h. Pump out underground line and blank off.
   i. Blow entire system out with compressed air.
   j. Close these valves:
      (1) Flush valve on urinal on 68' level.
      (2) Faucets on sink and lavatory.
      (3) Drain on hot water heater.
   k. Blank flange building side of domestic water line where 3" valve was removed.
2. Pump and Shop Building #3131
   a. Close valve DIV~~#4~~ 134 and ~~open~~ ~~DIV#5~~.
   b. Check that items 2.a. and b. under "B-1" Plant Equipment Shutdown Procedures have been put into standby.

c. Open faucets on lavatory and sink.

d. Open drain on hot water heater and coils on water cooler.

e. Operate flush valves on stool and urinal until lines are drained.

f. In the basement sump room, disconnect domestic water line that feeds the recarbonator.

g. Drain lines on equipment and blow out with air.

h. Remove hand valve from domestic water line inlet beside rest room.

i. Pump out underground line and cap line.

j. Blow out entire domestic water system in building with compressed air.

k. Reconnect domestic water line to recarbonator.

l. Close these valves:

   (1) Faucets on lavatory and sink.

   (2) Drains on hot water heater and water cooler.

m. Cap building side of domestic water line where valve was removed.

"B-1" TEST FACILITY DOMESTIC WATER STARTUP PROCEDURE

1. Test Building #3111
   a. Outside rest room at the +8' level, replace hand valve in 3" domestic water line.
   b. Check that system piping is intact and valves closed.
   c. ~~Close valve DIV117 and~~ open DIV134.
   d. Check system for leaks and repair as necessary.
   e. Open valves and faucets until there is a free flow of water.
2. Pump and Shop Building #3131
   a. Replace hand valve in domestic water line by rest room.
   b. Check that system piping is intact and all valves and fucets closed.
   c. ~~Close valve DIV115 and~~ open DIV134.
   d. Check system for leaks and repair as necessary.
   e. Open valves and faucets until there is a free flow of water.

"B-1" TEST FACILITY SERVICE AIR SYSTEM SHUTDOWN PROCEDURE

Main valves will be closed, system bled and closed to atmosphere.

1. Test Building #3111
   a. Close A1V031 (inside building by rest room).
   b. Open condensate traps in building and drain.
   c. Blow system to atmospheric pressure.
   d. Close all bleed valves.

2. Pump and Shop Building #3131
   a. Close valve A1V030.
   b. Open condensate traps and drain line.
   c. Close traps.

      NOTE: A1V030 cannot be closed if Building #5232 is still in use.

"B-1" TEST FACILITY SERVICE AIR SYSTEM STARTUP PROCEDURE

1. Test Building #3111

   a. Check that system piping is intact and all valves and traps are closed.

   b. Slowly open AIV031 to pressurize system.

   c. Check system for leaks and repair as required.

2. Shop Building #3131

   a. Check that system piping is intact and all valves and traps are closed

   b. Slowly open AIV030 to pressurize system.

   c. Check system for leaks and repair as necessary.

SANITARY FACILITIES STATEMENT

All plumbing fixtures will be removed and stored in the building. All supply and waste piping will be plugged, capped and/or blanked off.

1. Shutdown Procedure - Test Stand #3111
   a. Remove the lavatory, stool, urinal, and sink on the first floor and the urinal on the 68' level. Cap or plug all supply lines. Disconnect and remove the traps on the lavatory and sink and plug ends. Blank all floor drains.
   b. Flush all sanitary lines.

2. Startup Procedure
   a. Reinstall all fixtures, replacing all seals and gaskets. Reconnect drains and supply lines. Check for leaks. Remove drain blanks.

"B-1" TEST FACILITY PLANT EQUIPMENT SHUTDOWN PROCEDURE

All plant equipment will have preservation control measures taken. Power will be turned off, water systems drained and ports and vents capped.

1. Test Building #3111

   a. Hot Water Heater

      (1) Shut off power and tag out breaker.

      (2) Refer to domestic water procedure for draining.

   b. Air Conditioner

      (1) Turn off power.

      (2) Condenser unit for air conditioner is located on roof over Room 105. Cover openings on condenser with 1/4" mesh screen.

   c. Air Dryer

      (1) Turn off power to dryer.

      (2) Close inlet and outlet valves.

      (3) Bleed pressure from unit and close bleed.

   d. Hydraulic pumps and system

      NOTE: Pumps are located on grating outside Building #3111 at 55' level.

      (1) Turn off power to pumps and tag out breakers.

      (2) Bleed off gas side of hydraulic accumulators to 25 psi.

      (3) Remove suction and discharge lines from both pumps and plug lines.

      (4) Fill pump heads with 5606 fluid and cap ports.

   e. Cranes

      (1) See attached procedures for standby conditioning of cranes.

   f. Elevators

      (1) See attached procedures for standby conditioning of elevators.

2. Pump and Shop Building #3131

   a. Hot Water Heater

      (1) Shut off power and tag out breaker.

      (2) See domestic water procedure for draining.

   b. Drinking Fountain

      (1) Turn off power.

      (2) See domestic water procedure for draining.

   c. Sump Pumps

      (1) Sump pumps will remain in operation during shutdown. INSTALL HEAT TAPE ON DISCHARGE LINE

   d. Water Pumps

      (1) Secure power to pumps.

      (2) Fresh water pond will be drained and caps welded over pump intake.

"B-1" TEST FACILITY PLANT EQUIPMENT STARTUP PROCEDURES

1. Test Building #3111

   a. Hot Water Heater

      (1) Open water supply valve and allow heater to fill.

      (2) Open hot water faucets on sink and lavatory until there is a free flow of water.

      (3) Turn on power.

   b. Air Conditioner

      (1) On roof over Room 105, check air conditioner condenser. Clean unit of any debris and check fan operation.

      (2) Turn on power.

      (3) Check refrigerant charge, recharge if necessary.

   c. Air Dryer

      (1) Open air inlet and outlet valves.

      (2) Recharge dryers.

   d. Cranes

      See attached procedure.

   e. Elevators

      See attached procedure.

   f. Hydraulic Pumps and System

      NOTE: Pumps are located on 55' level on grating outside building.

      (1) Remove caps and plugs from suction and discharge lines and pump ports.

      (2) Connect lines to pump.

      (3) Recharge accumulators to desired pressure.

      (4) Check fluid level in reservoir.

      (5) Turn on power.

2. Pump and Shop Building #3131

a. Hot Water Heater

(1) Open water supply valve and allow heater to fill.

(2) Open hot water faucets on sink and lavatory until there is a free flow of water.

(3) Turn on power to heater.

b. Drinking Fountain

(1) Open water supply valve to cooler.

(2) Turn on power.

c. Sump Pumps

(1) Sump pumps have been in operation during shutdown.

d. Water pumps

(1) Pump water from pond and cut caps from inlets.

BUILDING 3111

SHUTDOWN PROCEDURE

ELECTRICAL

At the sub-station, located west of Building 3111, a wye connected 300 KVA transformer provides 480/277 volts, three phase to "B-1" Test Building #3111, the Pump House #3131 and the Valve House #5232. The 277 volt is not used.

There is a 2300 volt feed from the sub-station to the Pump House #3131 only. It is used for the pump motors.

1. On the 84' level, northwest wall, tag personnel elevator power disconnect: "LEAVE OFF DURING SHUTDOWN".
2. In power panel #3, 480 volts, three phase, located on the 68' level, turn all breakers off. This panel feed is now used for hydraulic pump #1. The motor leads and panel feed are paralleled in the panel. The feed, in power panel #2, breaker #8, has been re-labeled to "Hydraulic Pump #1".
3. Over the door leading to the stairwell on the 68' level, turn off the disconnect on the two (2) crane starters.
4. In lighting panel B, 120/208 volt, three phase, 4 wire located at the 68' level at the head of stairway, turn all breakers off.
5. To the left of lighting panel B is a 480 volt three phase "Crane Feeder Disconnect", turn disconnect off.
6. In the equipment room 105, northwest wall, turn all disconnects off (Heating and Air Conditioning).
7. In lighting panel C, 120/208 volts, three phase, 4 wire, located on northeast wall, Room 101, turn all breakers off. (Safety Systems)

SHUTDOWN SAFETY SYSTEMS

NOTE: Call Communications Center and tell them the fire alarm is being de-activated.

8. In lighting panel A, 120/208 volts, three phase, 4 wire, located on northeast wall, Room 101, turn all breakers off.

9. In power panel #5, 208 volts, three phase, 4 wire, located on northeast wall, Room 101, turn all breakers off.

10. In power panel #2, 480 volt, three phase, located on northeast wall, Room 101, turn all breakers off.

NOTE: Power panel #2 will be locked as a safe-guard. Key is ~~in an envelope attached to the inside back cover of Building 3111 Shutdown Folder.~~ in the key cabinet located in the Pump House #3131 key #

11. At the sub-station, located to the west of Building 3111, pull fuses to the 480 volt, three phase, 300 KVA transformer.

NOTE: This is the power for the Pump House #3132, Valve House #5232, and "B-1" Test Building #3111.

Wire fuses to a convenient part of sub-station in plain view.

BUILDING 3111

STARTUP PROCEDURE

ELECTRICAL

Refer to Pump House 3132 Shutdown Procedure Items and "B-1" Test Building 3111 Shutdown Procedure Items 1 through 10. Insure that all breakers are off and an electrical and visual check of equipment to be energized has been made.

1. At the sub-station, located west of the "B-1" Test Building 3111, replace fuses to the 480 volt, three phase, 300 KVA transformer.

   NOTE: Fuses were left in plastic bags in plain view at the sub-station. This is the 480 volt feed to Buildings 3111, 3132, and 5232.

2. In power panel #2, 480 volt, three phase, northeast wall, Room 101, Building 3111, turn on main breaker.

   NOTE: Key to power panel #2 is in an envelope attached to the inside back cover of the shutdown folder. Do not turn elevator #1, breaker #1 nor elevator #2, Breaker #8 on. Elevators are blocked up.

3. In power panel #2, turn on breaker for "Lighting Transformer". The lighting transformer provides 208 volts, three phase, 4 wire for power panel #5, located on northeast wall, Room 101.

4. In power panel #5, turn on:

   a. Breaker #1 - Lighting Panel A - General Lighting

   b. Breaker #2 - Lighting Panel B - Safety Systems and Instrument Power

   c. Breaker #8 - Lighting Panel C - Lighting 82' Level and Above.

   d. Other circuits as required.

   NOTE: Do not turn on breaker #37. Elevators are blocked up.

Building [illegible]
[illegible]
Leaving Sump Pump and Heater Run

ELECTRICAL

The [illegible] will remain
ENERGIZED for the Sump Pump, and [illegible] Heater only.
1000 H.P. Motor Heater.

The 2300 Volt Transformer Disconnect [illegible] have already been opened.

1- In Lighting Panel D, circuit 19 for the 1000 H.P. Motor Heater WILL REMAIN ON. All other BREAKERS will be TURNED OFF. The Panel will be Locked AND Key Placed in the Key Locker.

No. 2 A CAUTION TAG will be Affixed to the Panel, [illegible] Panel Interior AND the Key [illegible].

2 To the left of the [illegible] Panel D, is the Disconnect for the Sub [illegible] Heater Located in the [illegible] of the Substation Enclosure. This Heater will be left ON for the Winter Months. The Disconnect will be Tied [illegible] to Remain On.

3- In the 480 Volt Panel, Breakers 7 and 12 will remain On.
BKR 7 - Sump Pump
BKR 12 - Transformer in the West Lighting Panel D and the Sub [illegible] Panel.
Disconnect all other Loads from the BREAKERS, TAPE, TAG AND IDENTIFY.
Place a CAUTION TAG on the Panel [illegible] Leave BKR. 7 and 12 ON.
Also Place [illegible] TAG on the Panel that in case of [illegible] TURN OFF BKR 7

4 - No [illegible] Substation [illegible]
Check on the 2300 V [illegible].

BUILDING 3131

STARTUP PROCEDURE

ELECTRICAL

Refer to Building 3111 Shutdown Procedure Items 10 and 11 and Building 3131 Shutdown Procedure Items 1 through 4. Insure that all breakers are off and a visual and electrical check has been made of all equipment to be energized.

1. At the sub-station located northwest of Building 3131, replace fuses to the 480 volts, three phase, 300 KVA transformer.

   NOTE: Fuses were left in plain view at the sub-station.

2. In power panel #1, 480 volt, three phase, northeast wall of Building 3131, after turning on main breaker, turn on the lighting transformer breaker #12. The lighting transformer provides 120/208 volt, three phase, 4 wire to lighting panel D.

   NOTE: The key to power panel #1 is in an envelope attached to inside back cover of shutdown folder.

   Breaker #10 is power feed to the Valve House #5232.

   Breaker #7 is the Basement Sump Pump.

3. In lighting panel D, 120/208 volts, three phase, 4 wire, turn on circuits as needed.

   NOTE: Breaker #30 are boiler controls.

PEST AND SECURITY CONTROL STATEMENT

The site buildings #3111, 3131, and 5232 will be left closed and sealed against the entry from birds and rodents. All windows and doors will be latched and/or locked to the outside.

1. Shutdown Procedure

   a. Fasten 1/4 " mesh to the ridge type ventilator to prevent entry from birds. Seal off all other roof openings such as the exhaust fan housing with 1/4" mesh. The exhaust housing in the elevator switch gear will have to be cleaned.

   b. Remove all vent caps from roof stacks and blank off ends. Store removed items in buildings.

   c. Seal all penetrations and openings in the walls, especially around the roll up door housings. Check for possible rodent entry under the exterior doors and seal against same, expecially the doors in the rear of the test building.

   d. Latch all windows, if latch is missing, wire the window shut. Insure that all exterior doors are locked.

   e. Affix applicable markings to facility to denote readiness status and any other pertinent details.

PEST AND SECURITY CONTROL STATEMENT

STARTUP PROCEDURES

1. Unlock building.
2. Remove blanked ends from stack tops and replace caps.

SPECIAL - ROLL UP DOORS

The electrical controls for the roll up doors will be shut off at the panel box and the doors will be anchored to prevent excessive wind movement.

1. Shutdown Procedures

   The doors shall be extended outward in the center into a stress position (2" - 3" maximum), the full height. This position shall be held by bolting horizontal members from the purlins to a continuous vertical wooden member, along the center of the doors.

PROCEDURES FOR STANDBY CONDITIONING OF CRANES

1. Drain all gear boxes and refill with a preservative oil (Sohio Facton P-30).
2. Operate crane for a few minutes to distribute preservative.
3. Clean all shafts and coat with a preservative (tenac).
4. Raise hook to top position.
5. Spray drum and cable with a preservative (tenac).
6. Coat drive wheel gear and drive gear with a heavy preservative.
7. De-activate electric power.

PROCEDURES FOR STARTUP OF CRANES

1. Drain preservative from gear box and refill with recommended oil.
2. Inspect crane per NASA-P7114, "Crane Inspection and Report".
3. Turn on power.

PROCEDURES FOR STANDBY CONDITIONING OF STATIONARY TOOLS AND FABRICATION EQUIPMENT

Tools and equipment that are in a reasonable condition and can be preserved with a minimum amount of deterioration will be left in their present location. Preservation control measures will be taken. Tools or equipment that require extensive repairs or have outlived their usefulness will not be preserved. Any such tools or equipment will be brought to the attention of the phaseout office for disposal.

A. Power to all tools and equipment will be disconnected.

B. All surfaces that are not painted such as guides, tables, chucks, gears, etc., will be coated with a preservative.

C. Remove belts from belt driven tools and equipment and coat pulleys.

PROCEDURES FOR STANDBY CONDITIONING OF LUBRICATING OIL PUMPS AND GEAR BOXES

NOTE: This procedure is not meant for use on Cranes, Elevators, Vacuum Pumps, or Hydraulic Pumps

I. Lubricating Pumps

A. Assure that equipment cannot be operated while work is being performed.

B. Remove piping from pump head and cap piping.

C. Fill pump head with Sohio Facton P-30.

D. Rotate pump to distribute preservative.

E. Cap pump ports.

F. Tag out circuit breaker - "Pump Isolated and Preserved".

II. Gear Boxes

A. Assure that equipment cannot be operated while work is being performed.

B. Drain lubricant from gear box.

C. Add Sohio Facton P-30 sufficient to coat gears and shafts when rotated. DO NOT FILL GEAR BOX.

D. Rotate gears until all surfaces are wetted.

E. Tag equipment that gear box contains preservative.

PROCEDURES FOR STARTUP OF LUBRICATING OIL PUMPS AND GEAR BOXES

I. Lubricating Pumps

A. Remove caps from pump head and drain preservative.

B. Connect piping to pump.

C. Change oil in reservoir if required.

D. Turn on power to pumps.

II. Gear Boxes

A. Drain preservative from gear box.

B. Refill with recommended lubricant.

END CONDITION STATEMENT FOR "B-1" SITE

		BLDG 3111 TEST	BLDG 3131 PUMP
I.	READINESS CATEGORY	3	ACTIVE
II.	HEATING SYSTEM	OFF & FREEZE PROTECTED	ACTIVE
III.	DOMESTIC WATER	VALVE CLOSED N.E. OF SHOP BUILDING	
IV.	NATURAL GAS	N/A	ACTIVE
V.	RAW WATER	N/A	N/A
VI.	FIRE PROTECTION	ALL FIRE EXTINGUISHERS REMOVED EXCEPT TWO ON 85' LEVEL. CO_2 SYSTEM DEACTIVATED	ALL FIRE EXTINGUI ACTIVE
VII.	SERVICE AIR	DEPRESSURIZED: VALVE CLOSED INSIDE BOTH BUILDINGS	
VIII.	ELECTRICAL SERVICE	DE-ENERGIZED; MAIN BREAKER OFF IN POWER PANEL #2 IN BUILDING	ENERGIZED
IX.	SANITARY FACILITIES	FREEZE PROTECTED & PERSONNEL ACCESS BARRED	ACTIVE
X.	COMMUNICATIONS	PHONES REMOVED; ICOM DE-ENERGIZED	PHONE PBX
XI.	BUILDING WILL BE	LOCKED	LOCKED
XII.	ACTIVE ALARMS	NONE	NONE
XIII.	AIR CONDITIONING	DE-ENERGIZED	N/A
XIV.	SURVEILLANCE REQUIRED	AS REQUIRED FOR BUILDING MAINTENANCE	N/A

The retention basis will not be maintained at any level (okay to overflow).

Revised 2-1-82

END CONDITION STATEMENT FOR "B-1" FACILITY (continued)

The condition of this facility is now as indicated below:

Prior to 1979, it was determined that some of the research facilities at the Plum Brook Station would not be kept in "standby" at their intended research configuration.

The research systems and/or equipment were surveyed for use by Lewis-Cleveland and other agencies.

Everything left was incorporated in a salvage contract that would leave the building institutionally intact.

In 1981, the salvage work was completed under GSA Sale No. 50PS-80-9, Contract No. GS-05-DP-(S)-01964.

The institutional part of the building(such as electrical, water, gas, sewage, etc.,) remains fairly intact.

The end condition statement of these systems is as shown on the end condition statement.

END CONDITION STATEMENT FOR "B-1" SITE

		BLDG. 3111 TEST	BLDG. 3131 PUMP
I.	READINESS CATEGORY:	2	1
II.	HEATING SYSTEM:	OFF AND FREEZE PROTECTED RF 6-19-74	
III.	DOMESTIC WATER:	VALVE CLOSED NE OF SHOP BUILDING RF	VALVE CLOSED NE OF SHOP BUILDING RF
		DRAINED AND FLANGED INSIDE BUILDING RF	
IV.	NATURAL GAS:	N/A	SUPPLY CAPPED PURGED GN_2 RF
V.	RAW WATER	N/A	N/A
VI.	FIRE PROTECTION:	ALL FIRE EXTINGUISHERS REMOVED EXCEPT 2 ON THE 85' LEVEL. CO_2 SYSTEM DEACTIVATED.	NONE: ALL FIRE EXTINGUISHERS REMOVED.
VII.	SERVICE AIR:	DEPRESSURIZED: VALVE CLOSED INSIDE BOTH BUILDINGS RF	RF
VIII.	ELECTRICAL SERVICE:	DEENERGIZED: MAIN BREAKER OFF IN POWER PANEL #2 IN BUILDING	ENERGIZED
IX.	SANITARY FACILITIES:	FREEZE PROTECTED AND PERSONNEL ACCESS BARRED RF	
X.	COMMUNICATIONS:	PHONES REMOVED: I-COM DEENERGIZED	
XI.	BUILDING WILL BE:	LOCKED	LOCKED
XII.	ACTIVE ALARMS:	NONE	NONE sump
XIII.	AIR CONDITIONING:	DEENERGIZED	N/A
XIV.	SURVEILLANCE REQUIRED:	AS REQUIRED FOR BUILDING MAINTENANCE	WEEKLY INSPECTION

DATE: 4-16-74

Gaseous nitrogen, gaseous helium, gaseous hydrogen, liquid hydrogen, liquid nitrogen, and liquid oxygen systems will be inerted and left at atmospheric pressure and sealed. Vacuum jackets on the cryogenic LOX dewar and transfer lines will be left in an "as is" condition. The nitrogen gas storage bottle farm, #9803, will be isolated from the facility piping and pressurized with GH_2 to 150 psig. The nitrogen gas bottle farm pressure will not be maintained but left to decay naturally. The LOX dewar, #9853, inner vessel will be purged with GH_2 and left at 15 psig. The CO_2 fire protection system will be drained, depressurized and left at atmospheric pressure. Mechanical, electrical, and electronic equipment that is not permanently wired or attached to the site will be sent to CURE for reuse. The retention basins will be maintained at a water level below the sluice ways by periodic pumping by the maintenance crew. The elevators, cranes, roll doors, vacuum pumps and hydraulic pumps will be preserved. Sump pump in pump house is active.

The Centaur Battleship Tank will remain in the facility. All openings in the tank will be covered with blind flanges. All drawings, x-rays, and other tank related documents will be stored inside the LOX tank.

APPROVED:

Alan D. Johnson
Director of Plum Brook Station

Date: 4-15-74

ay 7, 1974

END CONDITION STATEMENT
FOR SUBSTATION D
BLDG. 3161

I.	READINESS CATEGORY:	Active
II.	HEATING SYSTEM:	N/A
III.	DOMESTIC WATER:	N/A
IV.	NATURAL GAS:	N/A
V.	RAW WATER:	N/A
VI.	FIRE PROTECTION:	N/A
VII.	SMOKE DETECTION:	N/A
VIII.	ELECTRICAL SERVICES:	See Attached
IX.	SANITARY FACILITIES:	N/A
X.	COMMUNICATIONS SYSTEM:	N/A
XI.	REMOTE ALARMS:	N/A
XII.	LOCAL ALARMS:	N/A
XIII.	HUMIDITY CONTROL:	N/A
XIV.	SURVEILLANCE REQUIRED:	Yes
XV.	BLDG. LOCKS:	N/A
XVI.	FENCE LOCKS:	Locked

#3161 - Substation D

The 34.5 - 2.4 KV transformer will be de-energized. The transformer will be on a periodic maintenance check to maintain inert gas pressure in the transformer. The 300 KVA 7200/480 volt transfer will remain active.

APPROVED:

Alan D. Johnson
Director of Plum Brook Station

Date: 5/10/74

In the event the station is reactivated, Readiness 3 buildings will be considered ones that have served their usefullness and/or are beyond economical repair.

The buildings shall be broken down after classification into three groups as follows:

1. Utilities
2. Plant Equipment
3. Utilities Special

Utilities

1. Natural Gas
2. Fuel Oil
3. Electricity
4. Water
    a. Raw Water
    b. Domestic Water
5. Service Air
6. Waste Disposal

Plant Equipment

1. Cranes
2. Elevators
3. Hoists
4. Sumps
5. Hot Water Heaters
6. Boilers
7. Unit Heaters
8. Air Conditioning
9. Air Compressor
10. Generators

Utilities Special

1. Cryogenics
2. High Pressure Gases
3. Cardox Systems
4. Hydraulic Systems

NOTE: The utilities, plant equipment and utilities special listed may or may not be available in any particular building. The classification of the building and its End Condition Statement shall clarify the types of utilities, plant equipment and utilities special available. All shop equipment shall either be removed for storage or preserved in place under the preservation control program at the time of the building shut down and shall be so noted in the End Condition Statement. The above will be safe guarded against improper use by any unauthorized person or persons. The method of safe guarding will be outlined in the individual building shut down procedure.

(Continued)

GENERAL STATEMENT - STANDBY MODE: A standby mode shall be defined as that condition from which any building of the station may be returned to full operation with reasonable effort and in a reasonable time period without major expenditures of resources for repair and/or rehabilitation. The effort required to resume operations at a future date will vary somewhat from building to building.

While in this standby mode, maintenance and the operation of vital equipment and systems shall be continued at a minimum level necessary to prevent a loss of Government investment.

To accomplish the above when in a standby mode, all buildings will have one of the following end condition classifications.

1. Active
2. Readiness 1
3. Readiness 2
4. Readiness 3

ACTIVE: In an active status, all necessary utilities, all plant equipment, and all utilities special are on and operating. Some warehouses could be in an active status and yet not have any of the above mentioned utilities, plant equipment, and utilities special. These buildings will be in use during standby mode. Any other condition pertaining to any of these buildings shall be so stated in the End Condition Statement. All buildings in the active status shall be protected by a Building Preservation Control.

READINESS 1: In a readiness 1 status only the utilities and/or plant equipment are on and operating that are necessary to provide a minimum amount of heat and power for prevention of building deterioration and/or because of some projected use during standby mode. Any other condition pertaining to any of these buildings shall be so stated in the building End Condition Statement. All of the buildings in the Readiness status shall be protected by a Building Preservation Control.

READINESS 2: In the Readiness 2 status any building so classified shall not have any of the available utilities, plant equipment, or utilities special on and operating. Everything shall be protected, preserved and secured. These buildings can be reactivated with a minimum cost. Deterioration is a factor considered. Any other condition pertaining to any of these buildings shall be so stated in the building End Condition Statement. The buildings shall be protected by a Building Preservation Control.

READINESS 3: In the Readiness 3 status any buildings so classified and are beyond economical repair shall not have deterioration considered. Any other condition pertaining to any of these buildings shall be so stated in the End Condition Statement. These buildings are not under any Building Preservation Control unless so stated in the End Condition Statement for that particular building.

Preservation Control:

Under the statement preservation control for buildings, it is expected that Station personnel on duty during shutdown will provide the following:

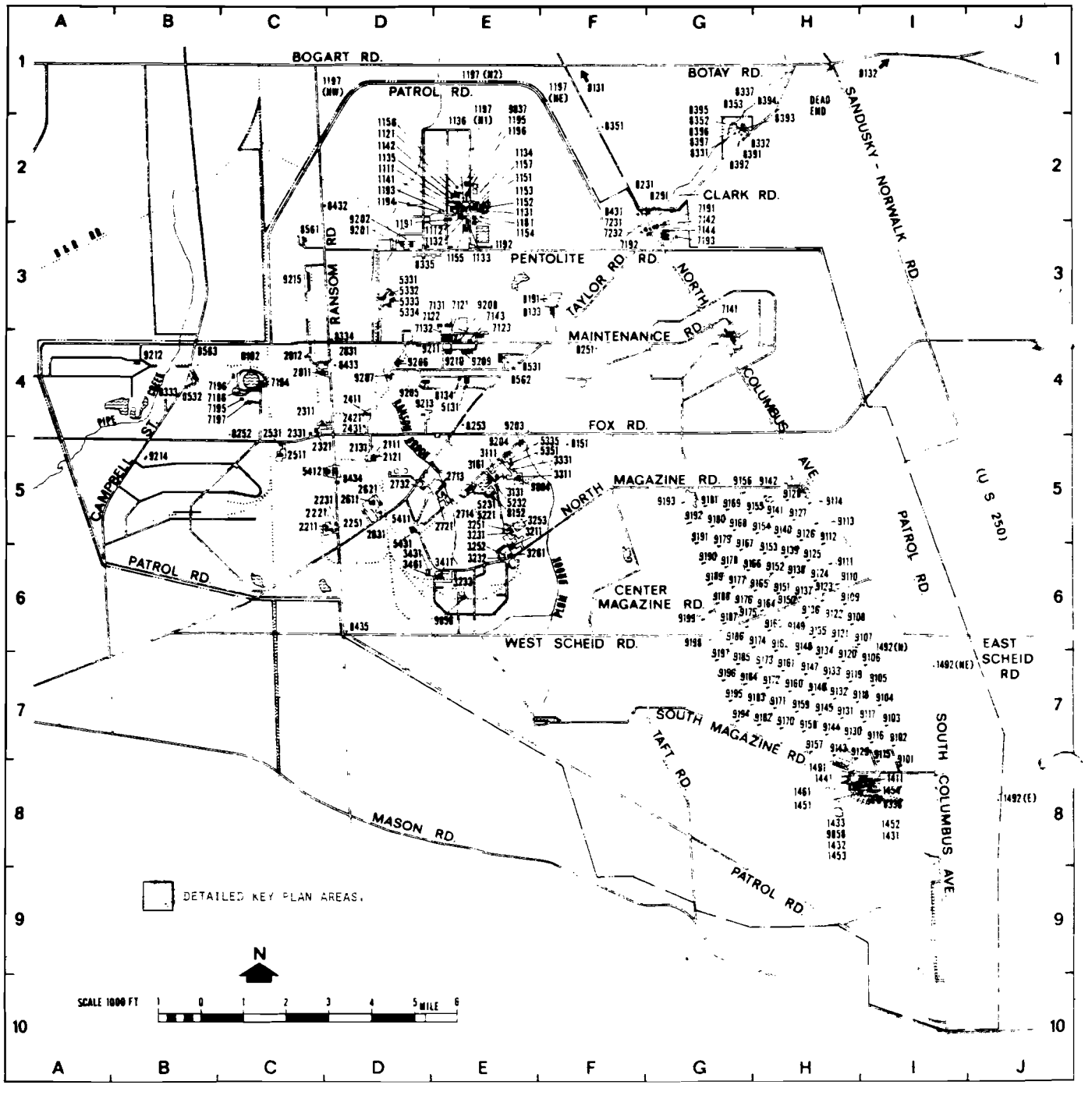
(a) All buildings shall be monitored periodically for rodent entry, wind and storm damage, and action shall be taken as required.

Pest Control:

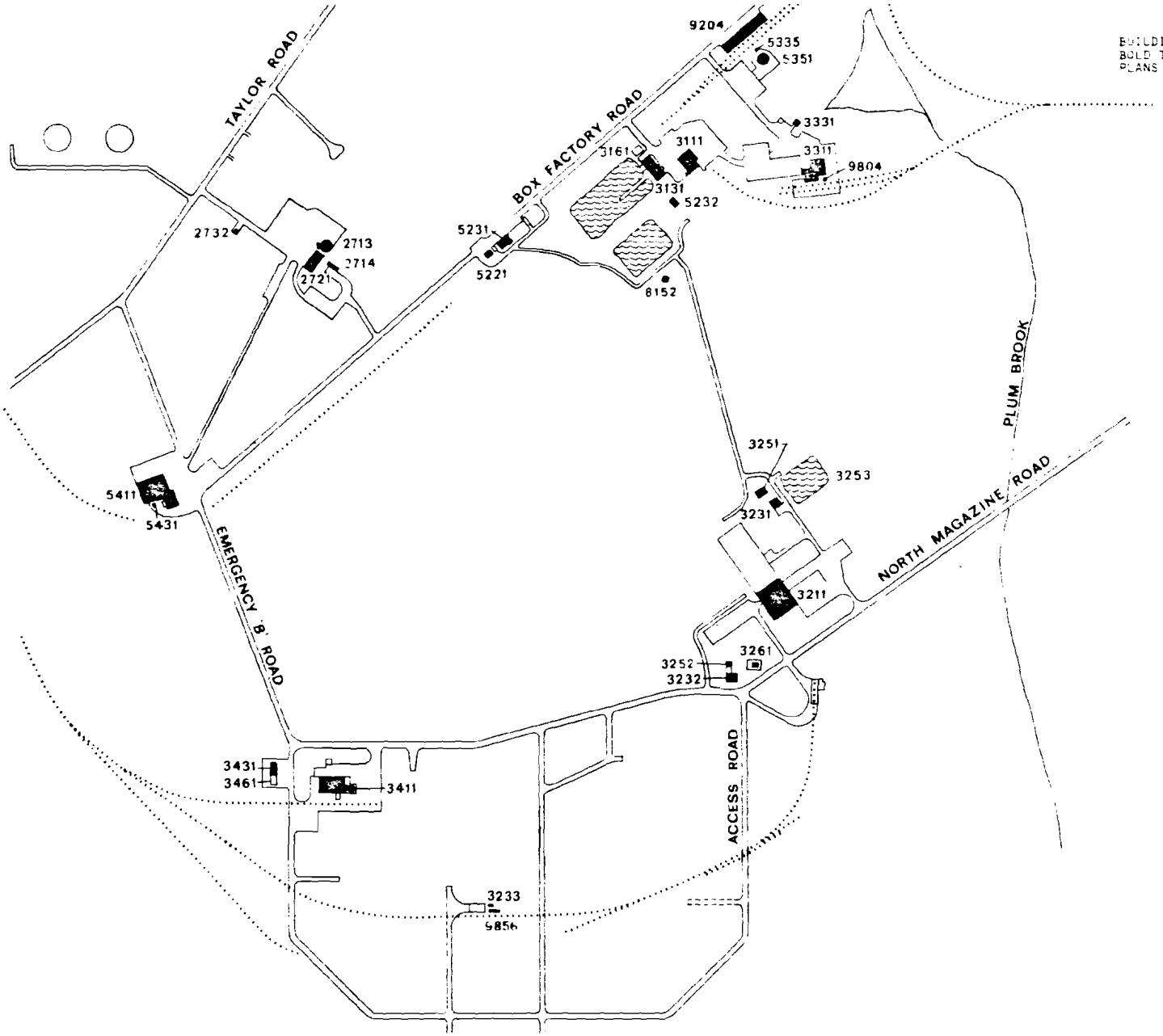
Under the statement Pest Control all vents, penetrations, openings, etc. are sealed. All pesticides shall be placed in strategic locations and replaced as required.

NASA LEWIS RESEARCH CENTER - PLUM BROOK STATION

SANDUSKY, OHIO



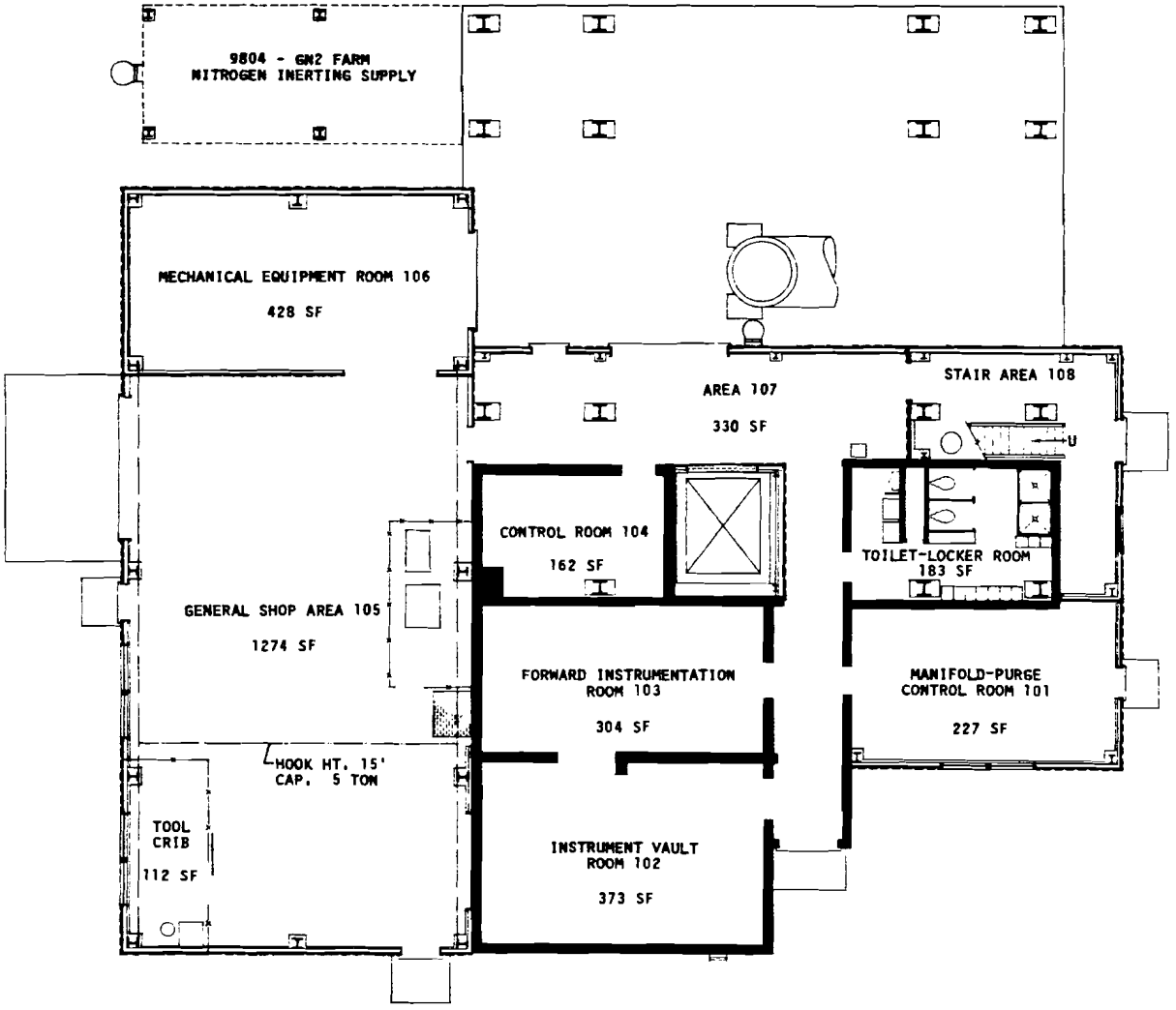
NASA LEWIS RESEARCH CENTER - PLUM BROOK STATION
SANDUSKY, OHIO



3000 SERIES KEY PLAN

ROCKET RESEARCH FACILITIES ORIENTED TO B CONTROL

NASA LEWIS RESEARCH CENTER - PLUM BROOK STATION
SANDUSKY, OHIO



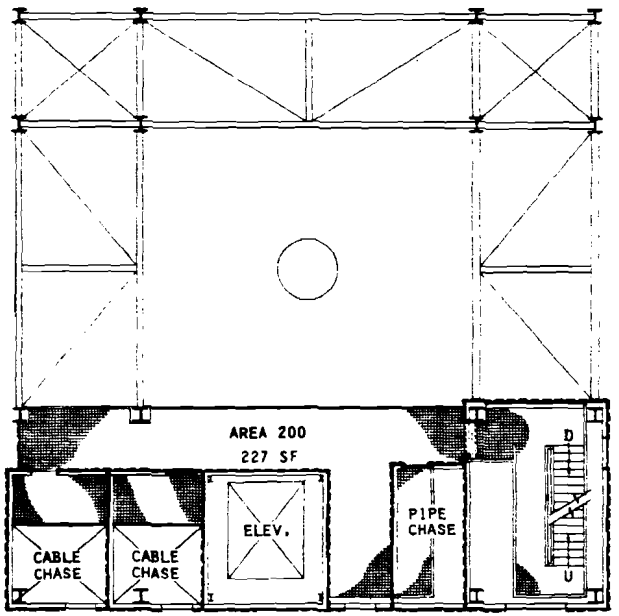
GROUND FLOOR - ELEV. 0'-0"
REF. DRWGS. CF-147920 & PF-23326

N

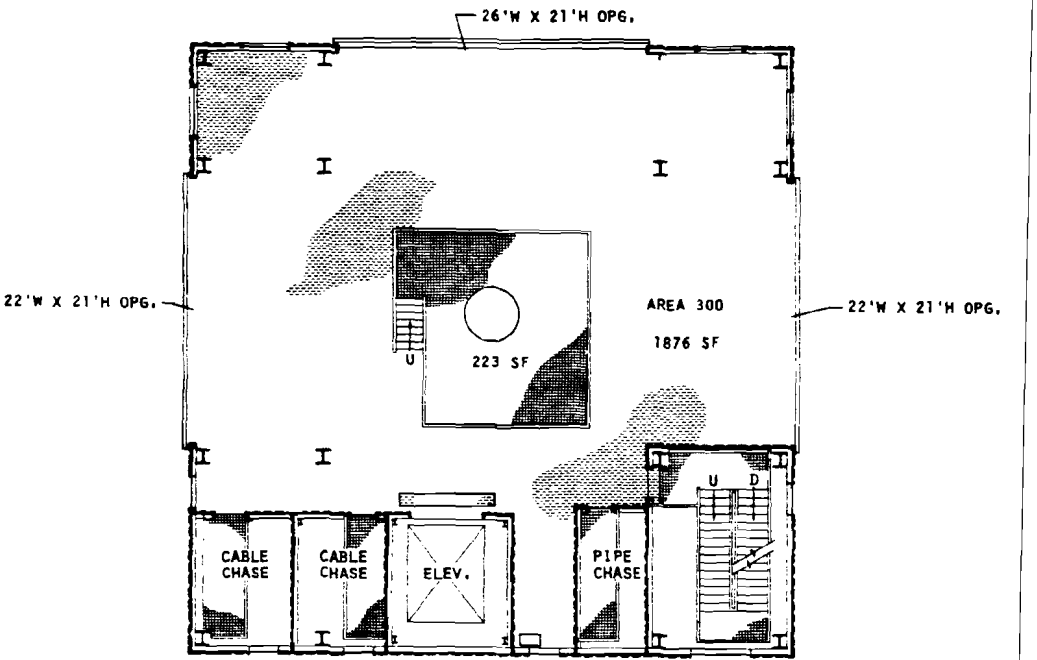
8 0 8 16
SCALE 1/16" = 1'-0"

B3 TEST STAND

BUILDING NO.
3311



LEVEL 2 - ELEV. +42'-0"



LEVEL 3 - ELEV. +73'-6"

REF. DRWG. CF-147921

B3 TEST STAND

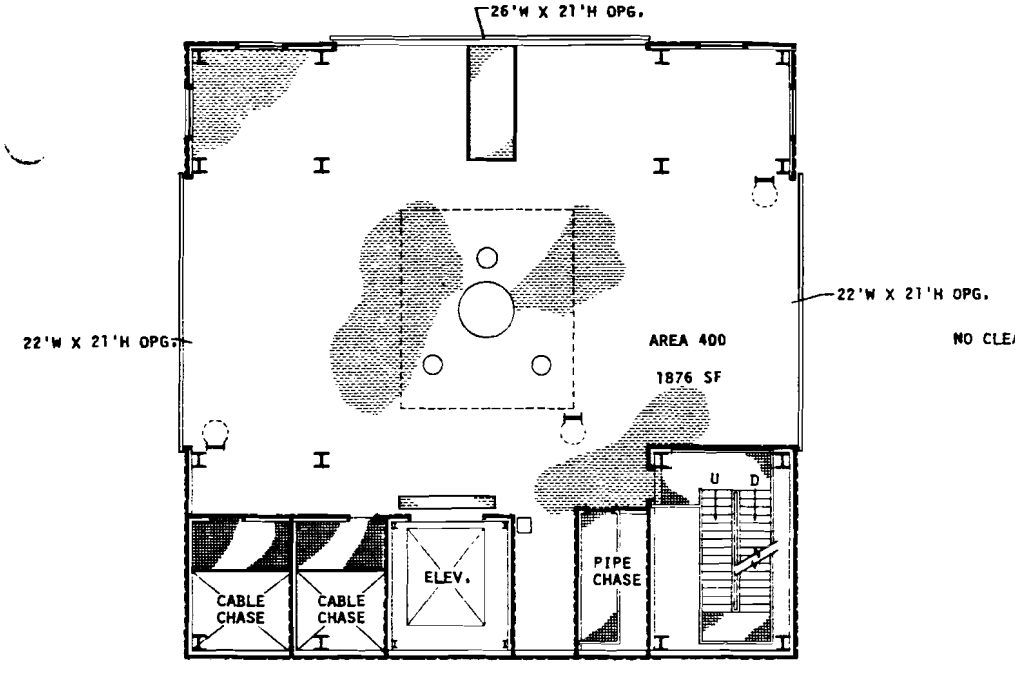
BUILDING NO.
3311

N

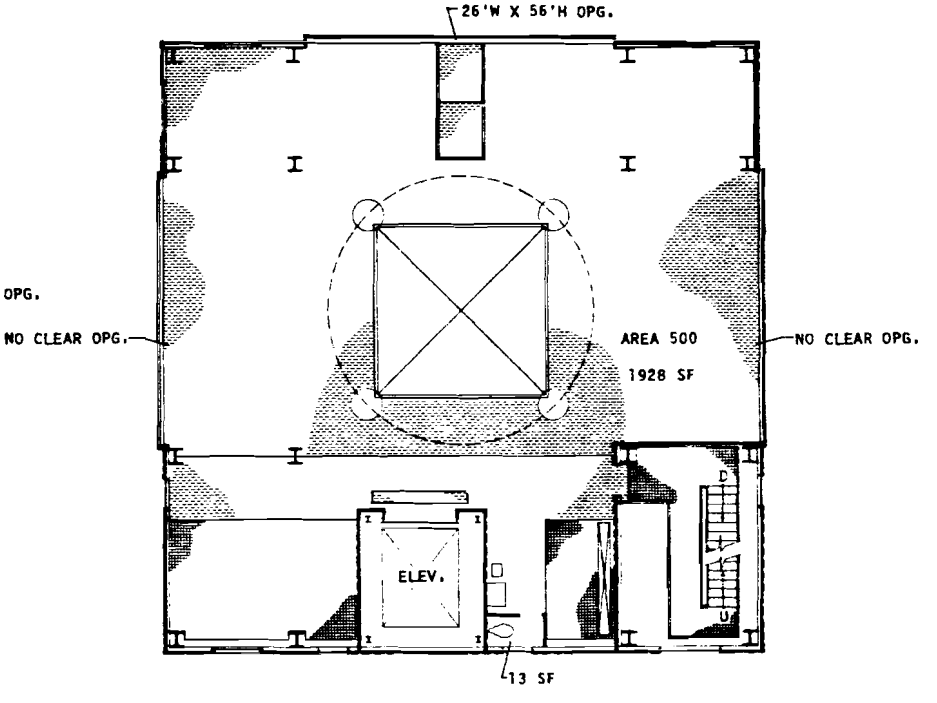
8 0 8 16
SCALE 1/16" = 1'-0"

NASA LEWIS RESEARCH CENTER - PLUM BROOK STATION
SANDUSKY, OHIO

JANUARY, 1969



LEVEL 4 - ELEV. +94'-6"
REF. DRWG. CF-147921



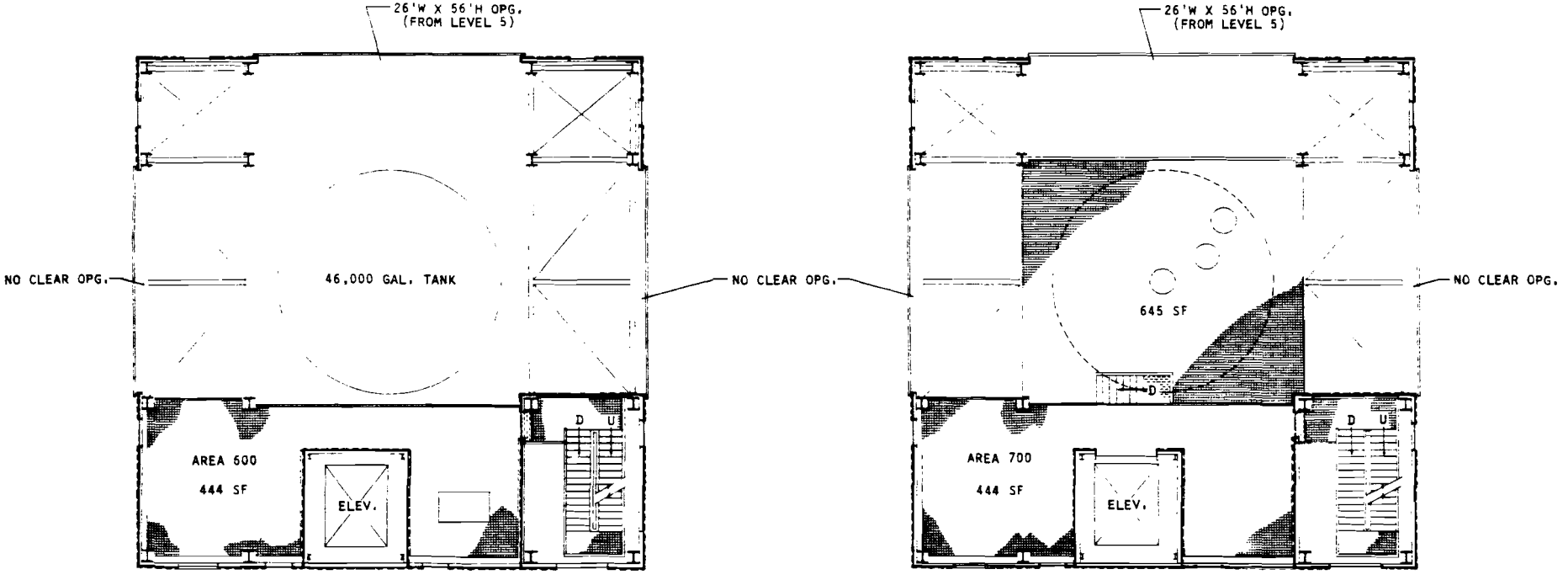
LEVEL 5 - ELEV. +115'-6"
REF. DRWG. CF-147923

N

8 0 8 16
SCALE 1/16" = 1'-0"

B3 TEST STAND

BUILDING NO.
3311



LEVEL 6 - ELEV. +126'-0"

LEVEL 7 - ELEV. +147'-0"

REF. DRWG. CF-147922

B3 TEST STAND

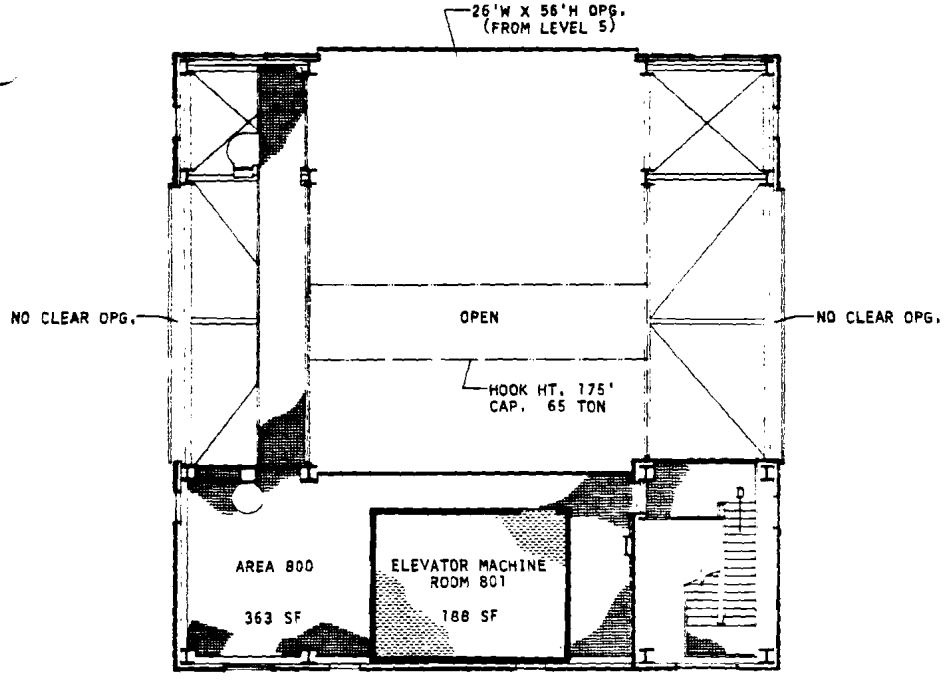
BUILDING NO.
3311

N

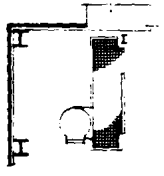
8 0 8 16
SCALE 1/16" = 1'-0"

NASA LEWIS RESEARCH CENTER - PLUM BROOK STATION
SANDUSKY, OHIO

JANAURY, 1969

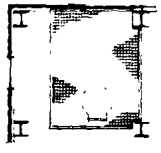


LEVEL 8 - ELEV. +168'-0"



ELEV. +186'-4"

LEVEL 8½ - ELEV. +176'-8"



LEVEL 7½ - ELEV. +157'-4"

REF. DRWG. CF-147923

N

8 0 8 16
SCALE 1/16" = 1'-0"

B3 TEST STAND

BUILDING NO.
3311