Attachment to letter dated January 4, 1979
L O Mayer, NSP, to Director of NRR, USNRC

NSP Responses to NRC Concerns Contained in Enclosure (2) of T A Ippolito's letter dated November 24, 1978

10. Recirculation Motor Generator Set Room - Fire Zone 3-A, Ventilation Ducts

An evaluation to determine the required fire resistance rating for the ventilation duct covering has been completed. A three hour fire rated covering will be provided.

36. Intake Structure, Fire Zone 25-A, Fire Protection

An evaluation has been completed to determine the need for plant service water for safe hot or cold shutdown. This evaluation shows that cooling is needed for the RHR pump seals only. A modification will be made to provide this cooling via the emergency service water system under emergency conditions thereby eliminating the need for the plant service water pumps. Therefore, curbing for these pumps is not necessary.

REGULATORY DOCKET FILE COPY

Docket # 50-263
Control # 7901100274
Date 1-4-79 of Document
REGULATORY DOCKET FILE

NSP Responses to NRC Concerns Contained in Enclosure (3) of T A Ippolito's letter dated November 24, 1978

PF-1 Fire Brigade Training

a. and d. The classroom instruction program will be conducted annually. Fire drills will be conducted quarterly for all fire brigades. There will be a classroom session following each drill to critique the drill and to discuss portions of the original training program. It is felt that this program meets the staff position concerning the frequency of classroom training and drills.

b. An evaluation will be made of each fire brigade member's proficiency in the use of fire fighting procedures during fire drills.

c. Fire drills will be critiqued at three year intervals by individuals independent of the utility's staff.

PF-3 Electrical Cable Penetration Qualification

Descriptions of each type of electrical and mechanical penetration seal that is used at the plant are shown on the attached figures. The materials which are presently used are:

Thermal Insulating Wool - Babcock & Wilcox Kaowool

Thermal Insulating Board - Haysite ERT-FR-C
Marinite
Transite

Thermal Insulating Mastic - Pyocrete 102
Flamastic 71A

The figures depict the present day method of penetration sealing. Penetrations which were sealed previously are similar in design except that polyurethane foam was used in place of Kaowool to fill voids. This foam has the trade name Insta Foam Froth Pak and was manufactured by Instafoam Products, Inc. All penetrations containing polyurethane foam have been sealed with a minimum thickness coating of 1/4" mastic.

There are approximately 350 penetrations located throughout the plant. The approximate sizes and locations are shown on the attached figures. The majority of these penetrations contain polyurethane foam. We are unaware of any test procedures which were relied upon as proof of seal qualification.

We are continuing to pursue penetration seals which are adequately qualified. We were recently informed of two electrical penetration sealing methods developed by Bechtel Power Corporation. These methods have been accepted by American Nuclear Insurers.

One technique involves the use of a cellular concrete and the other involves the use of a silicone foam. If these seals or other similar ones are determined to be adequately qualified, they will be used for new penetration seals which are used in the future or for seals which must be replaced.

PF-4 Smoke Detection Systems Test

In situ tests will be performed to verify that the products of combustion from a fire would be promptly detected. Review of the manufacturer's test reports indicates that the type of detectors installed at Monticello have been extensively tested with many different combustible materials. The detectors have shown adequate sensitivity for the types of materials typically found in a power plant, e.g. paper, wood, electrical insulation, oils and greases. Therefore, no additional bench testing is deemed necessary. Appropriate modifications will be made if required, based on in situ test results.

PF-8 Reactor Building Closed Cooling Water System Shutdown Requirements

Investigation indicates that the emergency service water system can be used in lieu of the service water system to maintain RHR shutdown requirements. Modifications will be made to allow use of this system during emergency conditions. This will eliminate all concerns with RBCCW cable separation.

PF-9 Recirculation Motor Generator Set Room, Fire Zone 3-A, Penetration Seals

An investigation has shown that 3- hour fire rated penetration seals are needed. These seals will be upgraded to assure that a fire would not propogate from fire zone 3-A to zones 3-B and 3-C.

PF-10 Reactor Building, East and West Access Areas - Fire Detection

A concrete block wall with a three hour fire rating will be installed to separate the east and west access areas. Therefore, fire detection for these areas is not necessary.

PF-11 Reactor Building, Fire Zone 2A-Safe Shutdown Requirements

1) Cables required for operation of the RCIC system will be rerouted so that they do not pass through Fire Zone 2A.

2) Evaluation indicates that ventilation is not required for the RCIC room. Therefore,a fire in zone 2A will not prevent operation of both the HPCI and RCIC systems.

PF-14 Centralized Fire Equipment Storage Location

A suitable storage area for fire brigade equipment, at a central location, will be provided. An appropriate amount of protective clothing and self-contained breathing units will be provided based on the number of fire brigade members. All other recommended equipment will be provided.

PF-15 Fire Brigade

We agree to establish a Fire Brigade Support Team to provide substantial support to Fire Brigade Members. This Fire Brigade Support Team will consist of three trained individuals who may be drawn from the site security force.

Three operators on each shift will be assigned to the Fire Brigade and receive full training. The Fire Brigade Support Team will receive training on a regular basis sufficient to permit them to support the activities of fully trained Fire Brigade members.

In the event of a fire which requires evacuation of the Control Room, one of the operators assigned to the Fire Brigade may be required to assist in performing the plant shutdown from outside the Control Room. In this situation a total of 5 individuals will still be available, however, to combat the fire until outside assistance arrives.

The Shift Supervisor will not be assigned to the Fire Brigade or the Fire Brigade Support Team

PF-16 Cable Spreading Room, Fire Zone 8-Safe Shutdown Requirements

The recommended cable rerouting will be performed.

PF-18 Residual Heat Removal Equipment Room Coolers

Evaluation indicates that RHR pump room ventilation is required. The cabling for one of the RHR room ventilation units will be rerouted outside the cable spreading room so that redundant cabling will not be located in the same fire zone.

PF-21 Turbine Building Fire Zone 19A and 19B - Fire Protection Requirement

1) The referenced cables will be coated with a fire retardant coating.

2) Approximately 2 feet of additional heat shield will be added to prevent the direct line-of-sight project of radiant heat to the cable trays.

3) The eight turbine building roof exhaust vent fans are mounted on 3 foot-8 inch square curbed openings, each having an area of 13.5 square feet with a total area of 108 square feet. The powered exhaust fans have a capacity of 12,500 cfm each and are equipped with butterfly dampers that are opened by the air flow from the fans. It is unlikely that the driving head from natural convection will be sufficient to open the dampers to effectively preclude the buildup of hot gas which could damage cabling or cause structural damage to the building. The vent fans are automatically initiated on high temperature on the turbine operating floor.

   Appendix A to Branch Technical Position APCSB 9.5-1, paragraph D.4(g) recommends 300 CFM forced convection venting be provided for each 200 square feet of floor area. The turbine building floor area of 26,438 square feet will require 39,656 cfm exhaust to satisfy this provision. The eight powered roof vents will provide 100,000 cfm exhaust, or roughly 2.5 times the recommended amount. Four of the vent fans are powered from each of two widely separated MCCs. Four of the fans will remain operable, with a capacity of 50,000 cfm, in event the power feeder cabling to one of the MCCs is degraded by fire or heat damage.

   The Fire Hazard Analysis takes credit for roof venting capability in the discussion of Fire Zone 13-B. The 432 square foot opening in the ceiling of Zone 13-B and the grating opening in the turbine operating floor, of the same size and directly above, will provide direct vertical venting of hot gas from a fire in the lube oil reservoir area to the operating floor. The air velocity resulting from the total exhaust of 100,000 cfm through the 432 square foot grating is 231.5 feet per minute. The natural convection of hot gas resulting from a fire in Zone 13-B will cause flow through the zone ceiling opening and the powered exhaust will induce flow through the grating above. A portion of the induced air flow will be made up by air flow out of Zones 19-A and 19-B and reduce any tendency for hot gases to migrate into Zones 19-A and 19-B and degrade the power feeders to the MCC providing power to four of the fans and thus tend to maintain the operability of all eight roof exhaust fans. No credit has been taken for the cooling and exhausting capacity of the normal ventilating system.

Operation of the automatic deluge system covering the lube oil hazards in Zone 13-B will provide cooling the hot gases until extinguished by the system or by fire brigade action using portable equipment. Access to the fire ground will be enhanced by the venting of the smoke and heat to enable the fire brigade to approach and attack the fire by multiple routes.

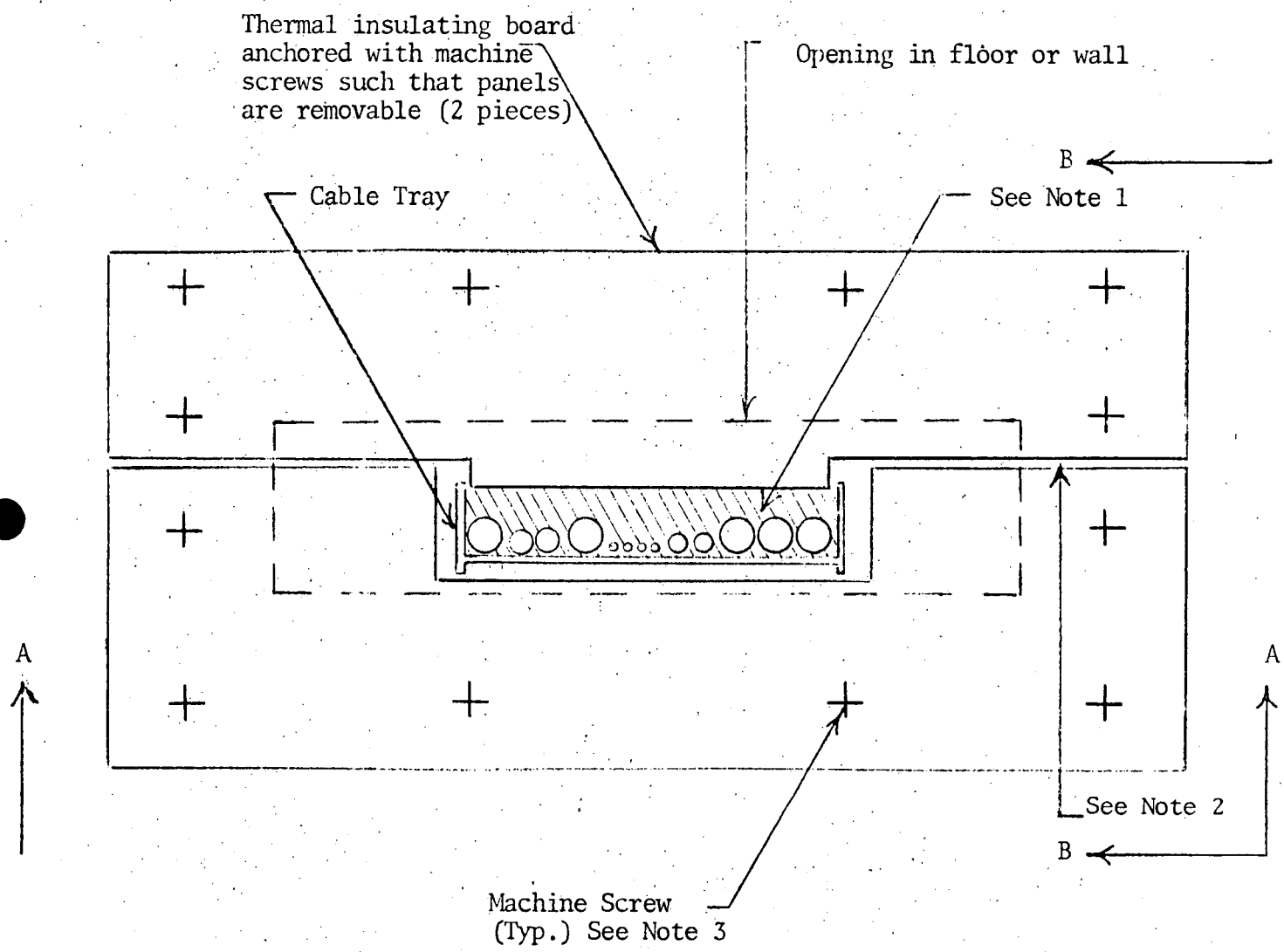
4) Two sets of portable foam applicators for 1 1/2" hose lines of a type utilizing an inline eductor will be provided at locations accessible to Zone 13-B.

PF-22 Main Turbine Generator Bearings-Fire Protection

A lube oil fire at the turbine generator bearing oil seals would be of less intensity than the fire postulated in PF-21. It has been shown that the buildup of hot gases which could cause structural damage in the turbine building is precluded from occurring. Therefore, installation of a heat-actuated automatic fire suppression system is not deemed necessary.

PF-28 Fire Protection System-Piping Connections

The two subsystems will be interconnected utilizing one of the recommended methods. Valve position will be controlled as stated in the response to item No. 23 of Enclosure 2 in our November 7, 1978 submittal.



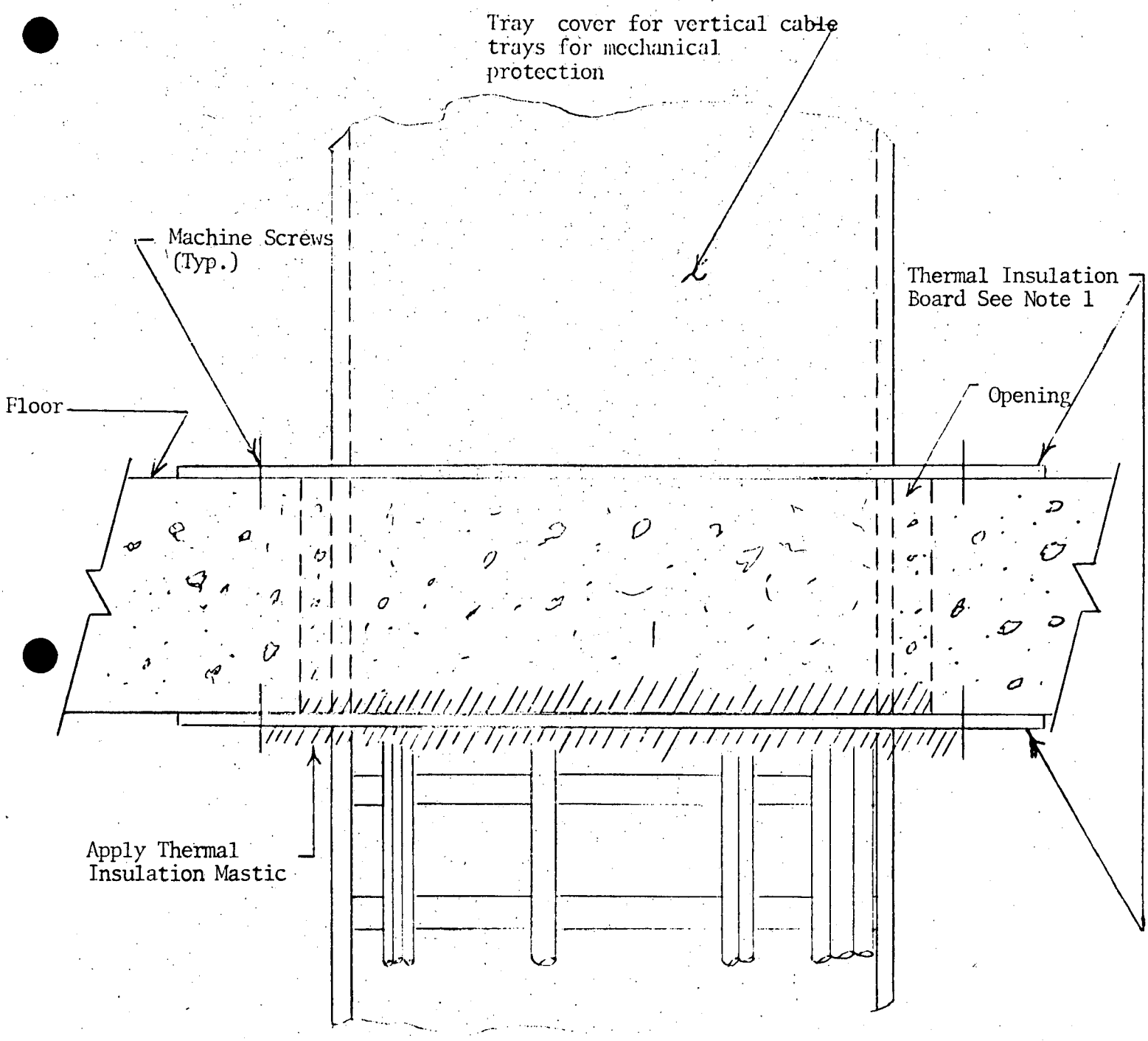
NOTES

1. Fill large voids with thermal insulating wool.
2. Seal opening between thermal insulating boards with thermal insulating mastic.
3. Cover Screw heads with 1/4" thick coating of thermal insulating mastic.

Section A - See Fig. 2
Section B - See Fig. 3

CABLE TRAY THROUGH FLOOR OR WALL

FIGURE 1

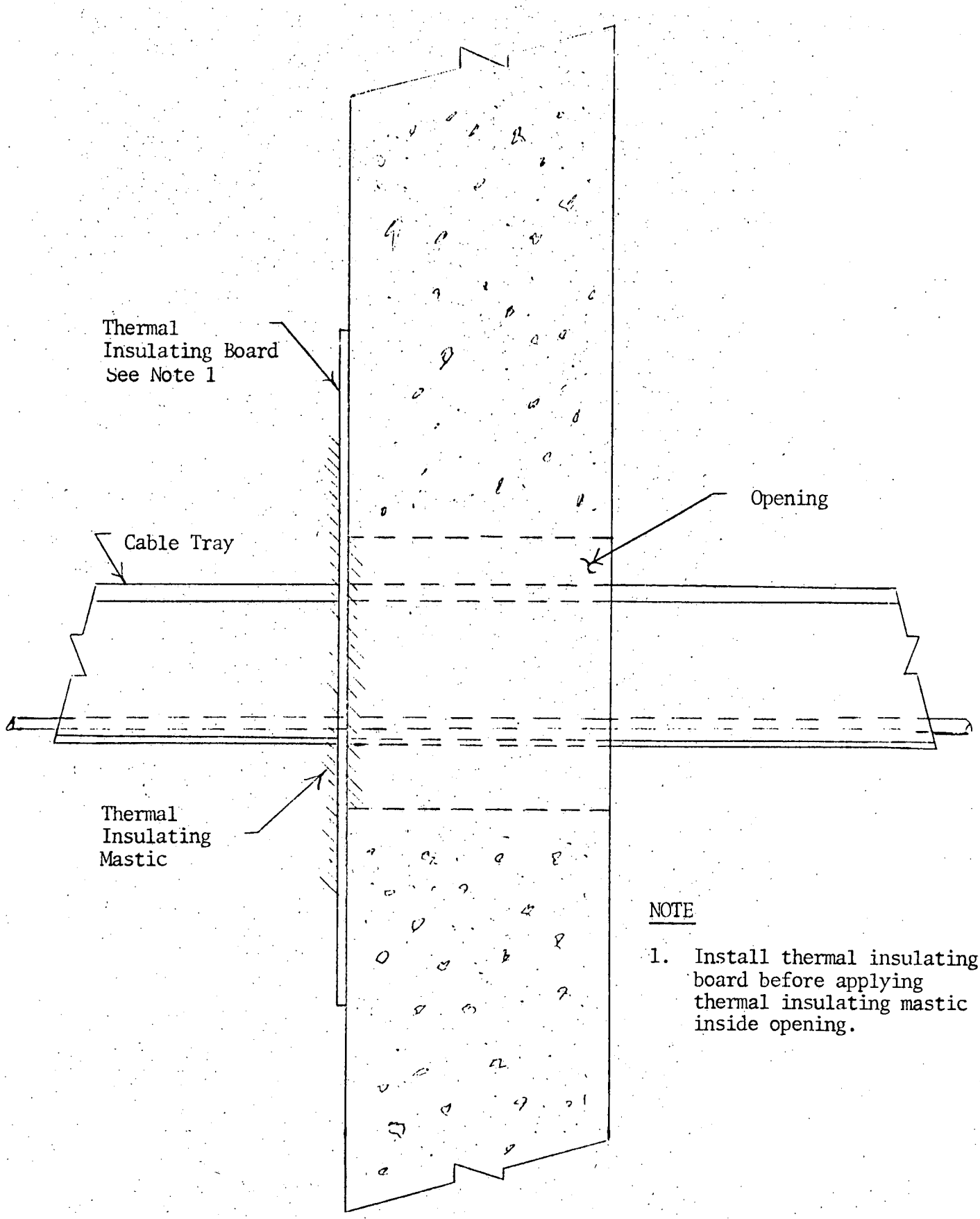


Section "A-A"
(See Figure 1)

NOTE:

1. Install thermal insulating board before insulating mastic inside opening.

CABLE TRAY THROUGH FLOOR
Figure 2

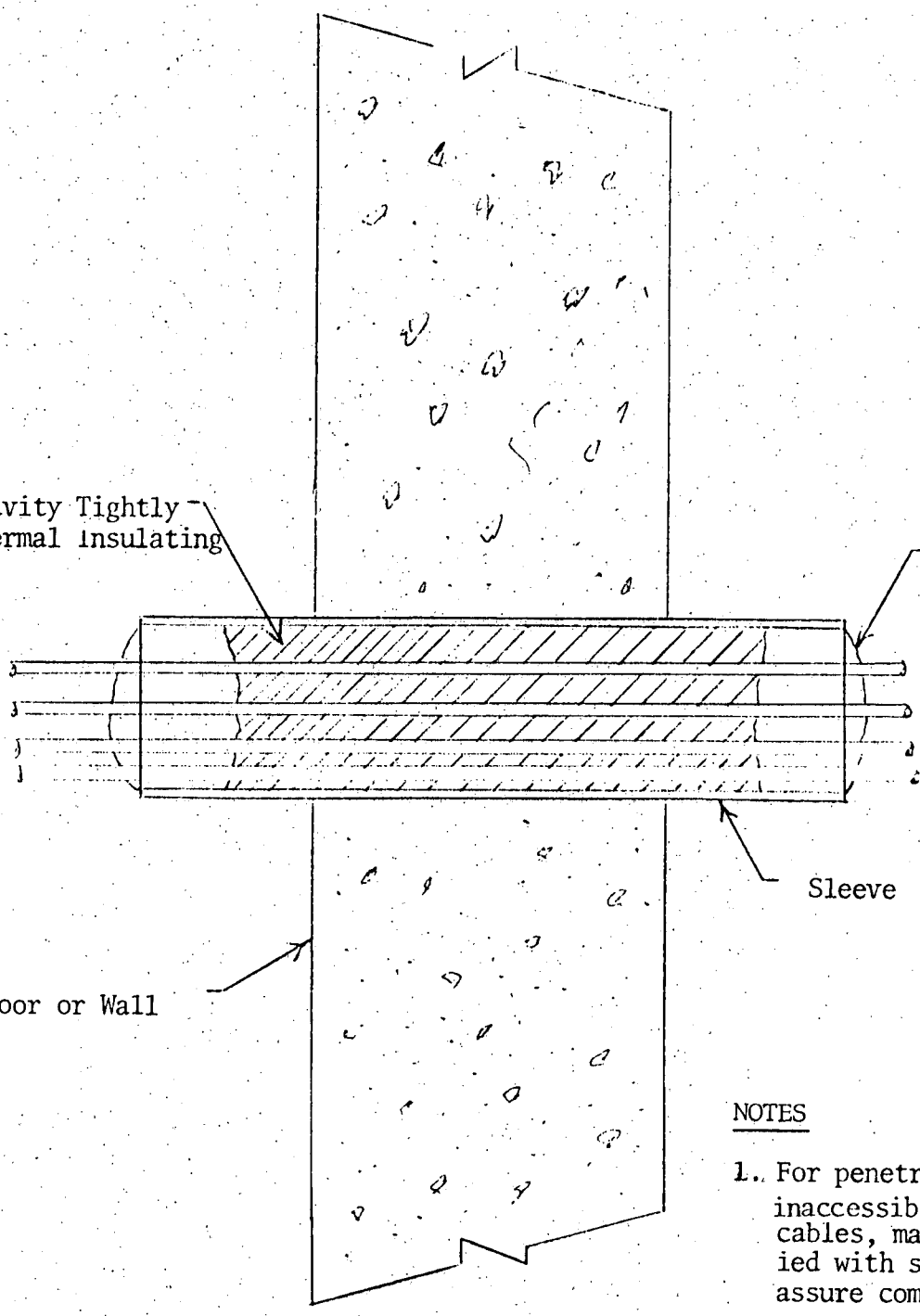


NOTE

1. Install thermal insulating board before applying thermal insulating mastic inside opening.

Section "B-B" (See Figure 1)
CABLE TRAY THROUGH WALL

FIGURE 3



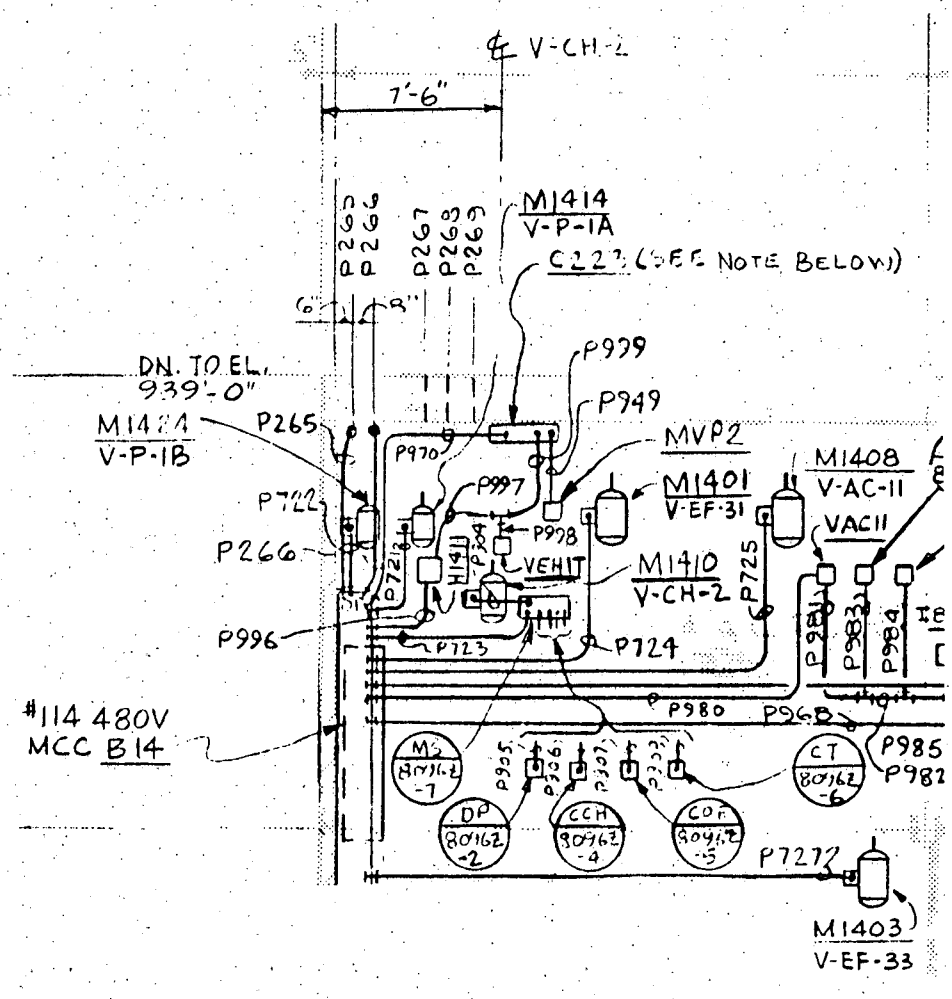
NOTES

1. For penetrations that are inaccessible or contain many cables, mastic should be applied with spray equipment to assure complete sealing.

SLEEVE PENETRATION

FIGURE 4

H and V EQUIPMENT ROOM FLOOR
NORTHWEST CORNER



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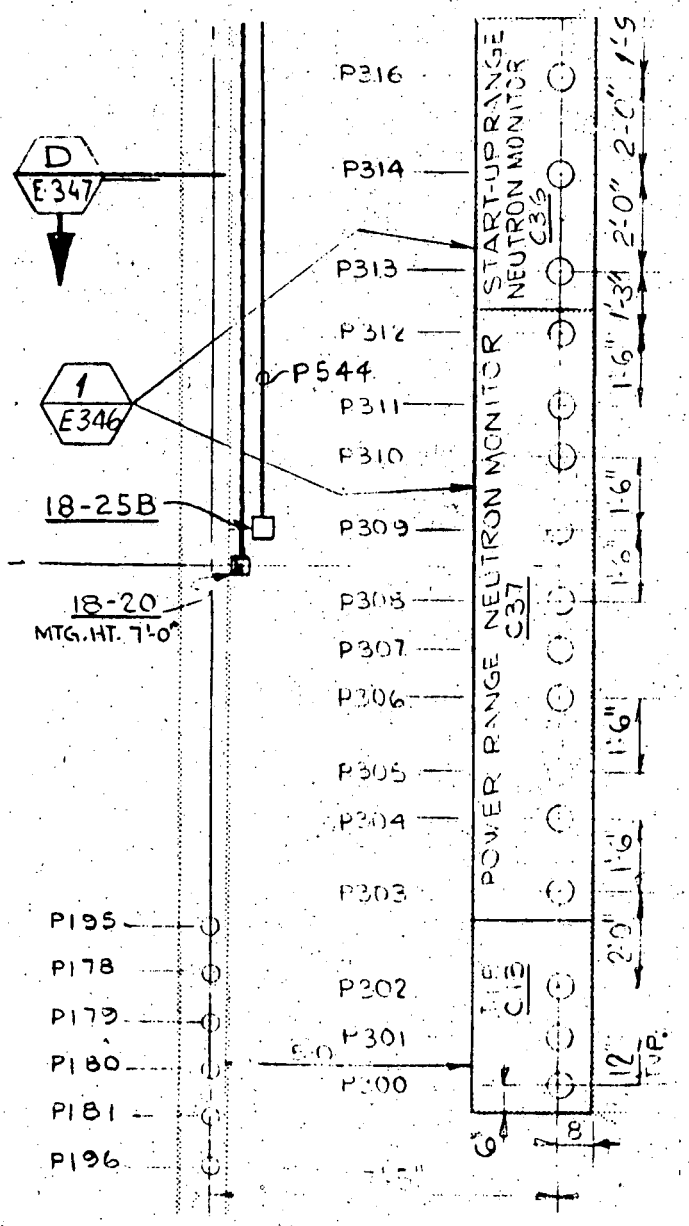
CONTROL ROOM FLOOR



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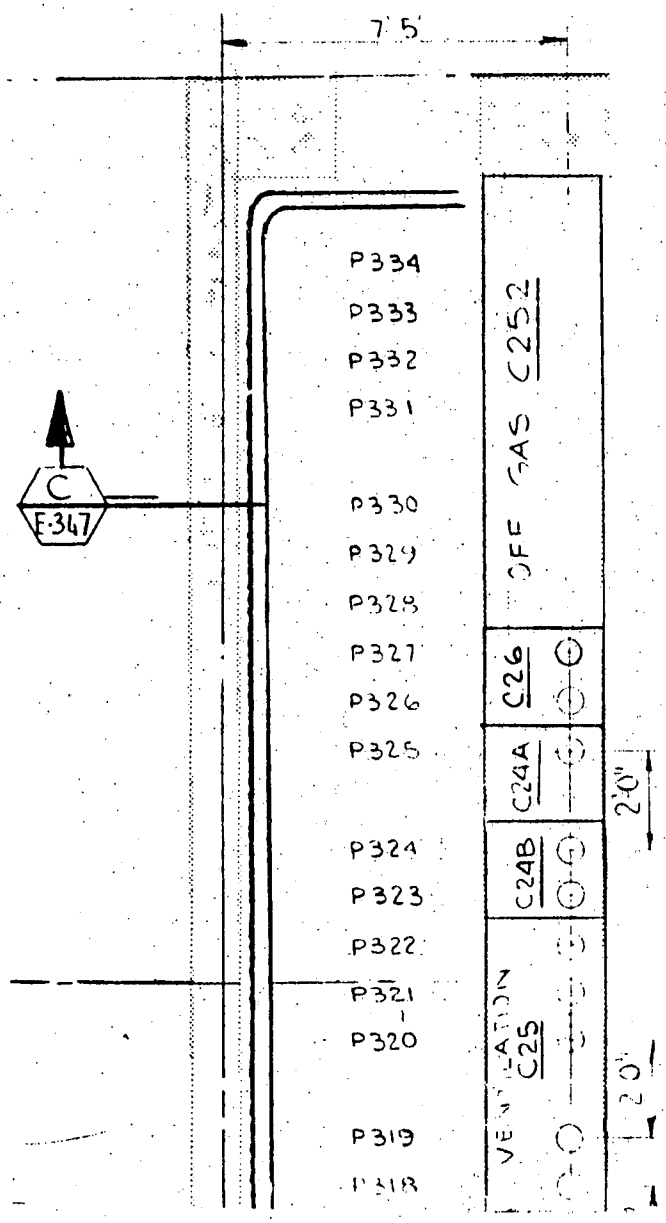

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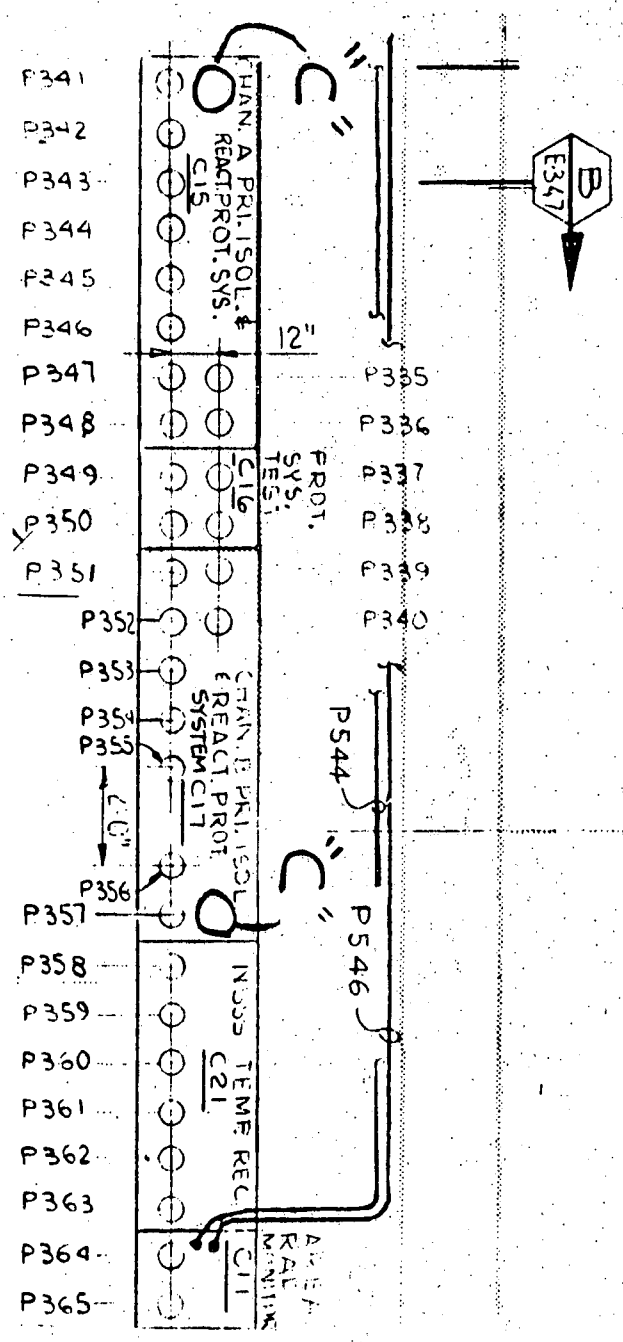

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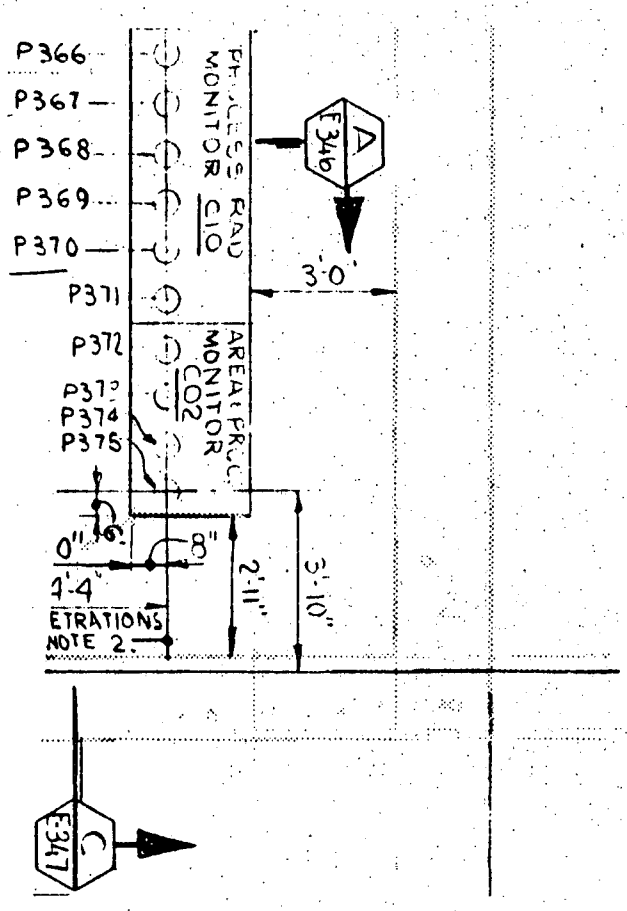

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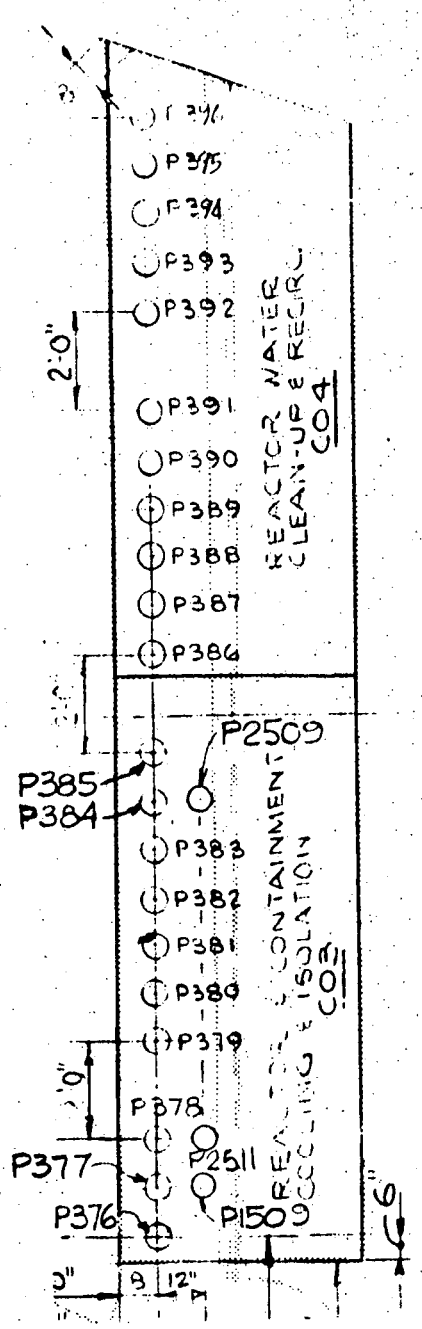

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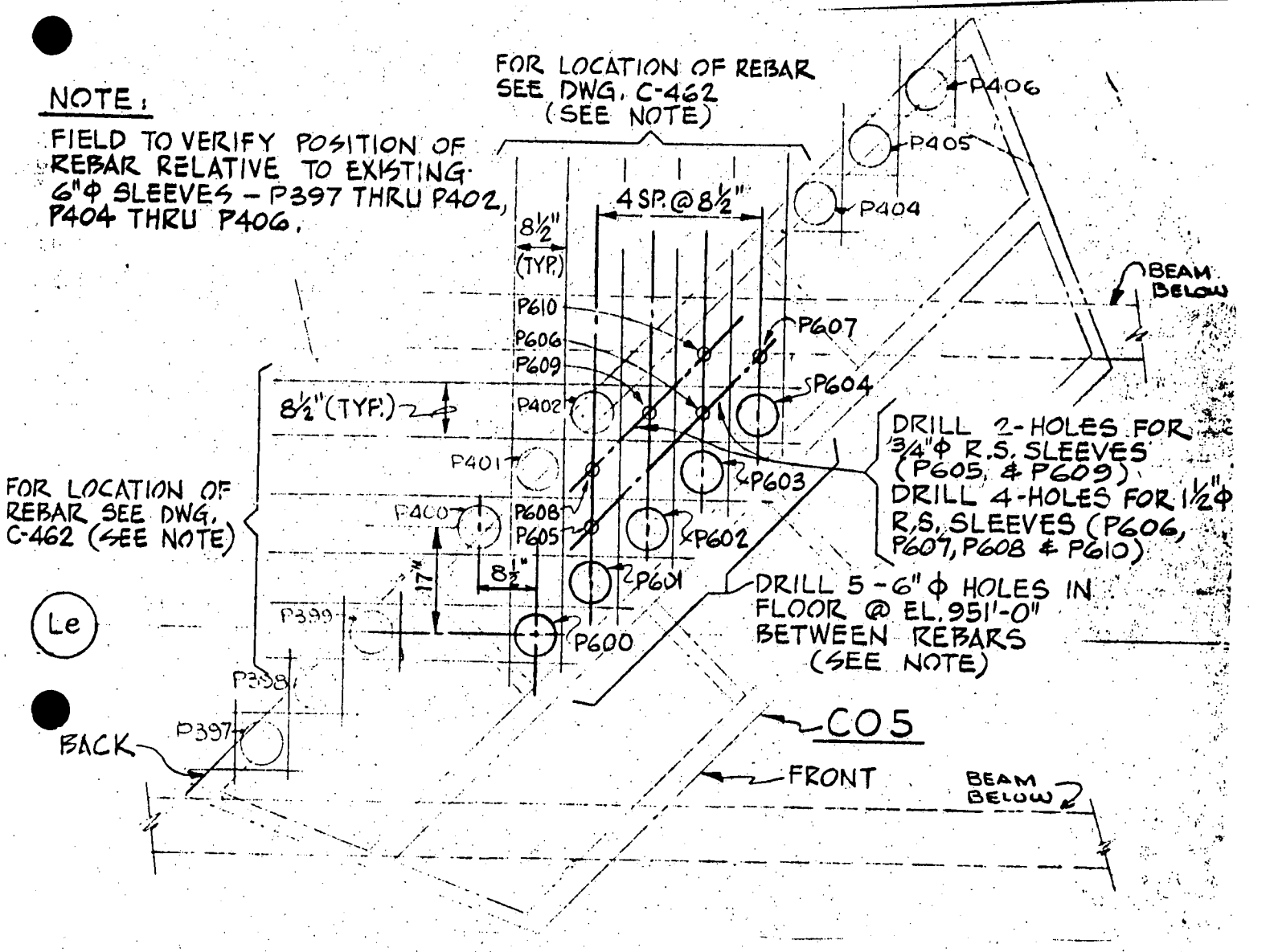
NOTE:
FIELD TO VERIFY POSITION OF REBAR RELATIVE TO EXISTING 6"Φ SLEEVES – P397 THRU P402, P404 THRU P406.
FOR LOCATION OF REBAR SEE DWG. C-462 (SEE NOTE)
4 SP. @ 8½"
8½" (TYP.)
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BEAM BELOW
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P604
8½" (TYP.)
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P600
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P398
P397
17"
8½"
FOR LOCATION OF REBAR SEE DWG. C-462 (SEE NOTE)
DRILL 2-HOLES FOR ¾"Φ R.S. SLEEVES (P605 & P609)
DRILL 4-HOLES FOR 1½"Φ R.S. SLEEVES (P606, P607, P608 & P610)
DRILL 5-6"Φ HOLES IN FLOOR @ EL. 951'-0" BETWEEN REBARS (SEE NOTE)
Le
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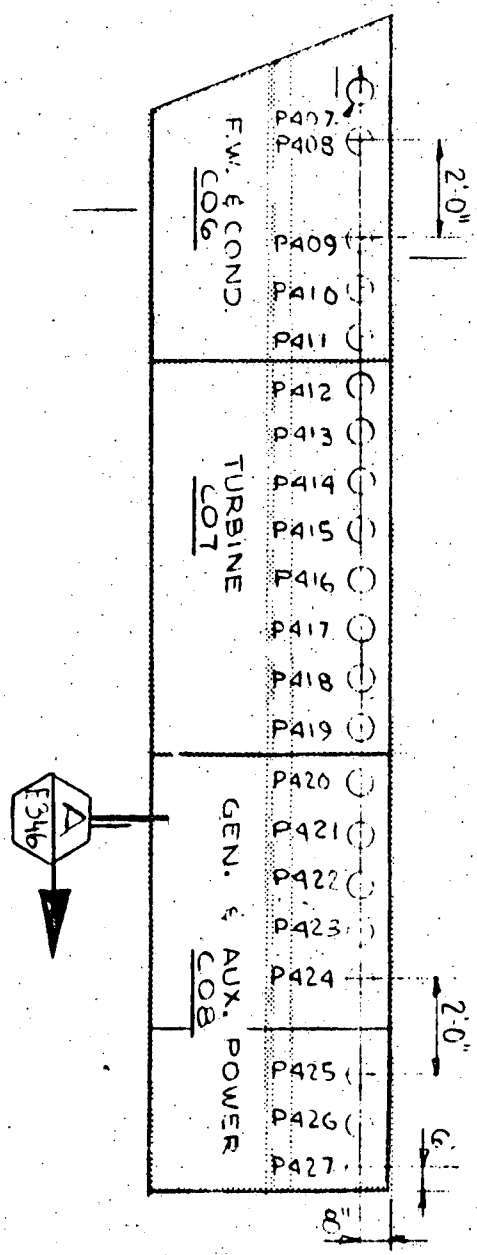
CONTROL ROOM FLOOR



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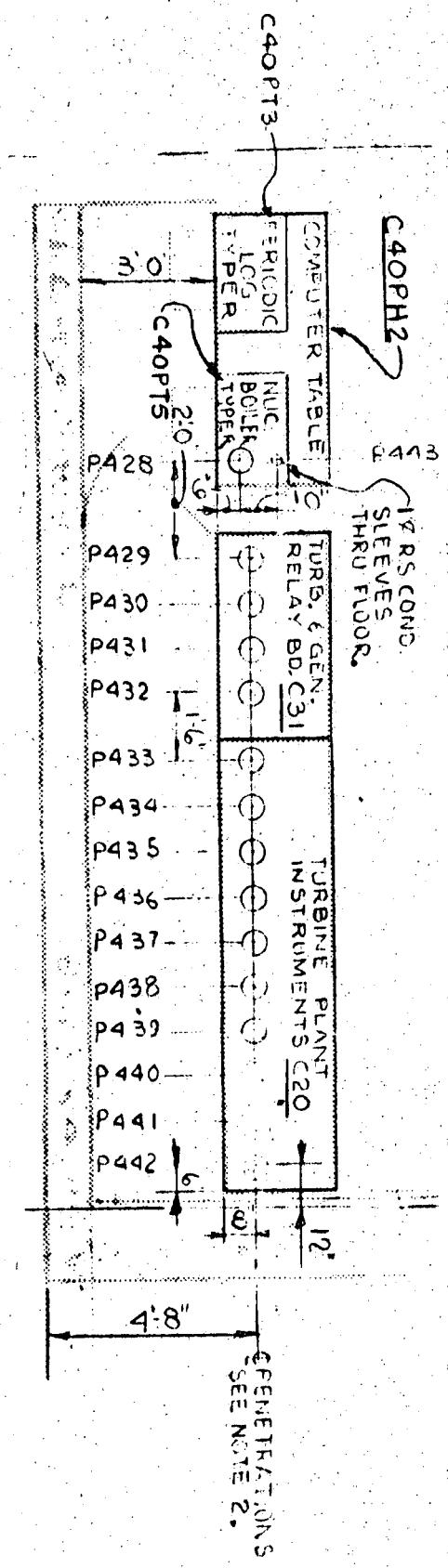
CONTROL ROOM FLOOR



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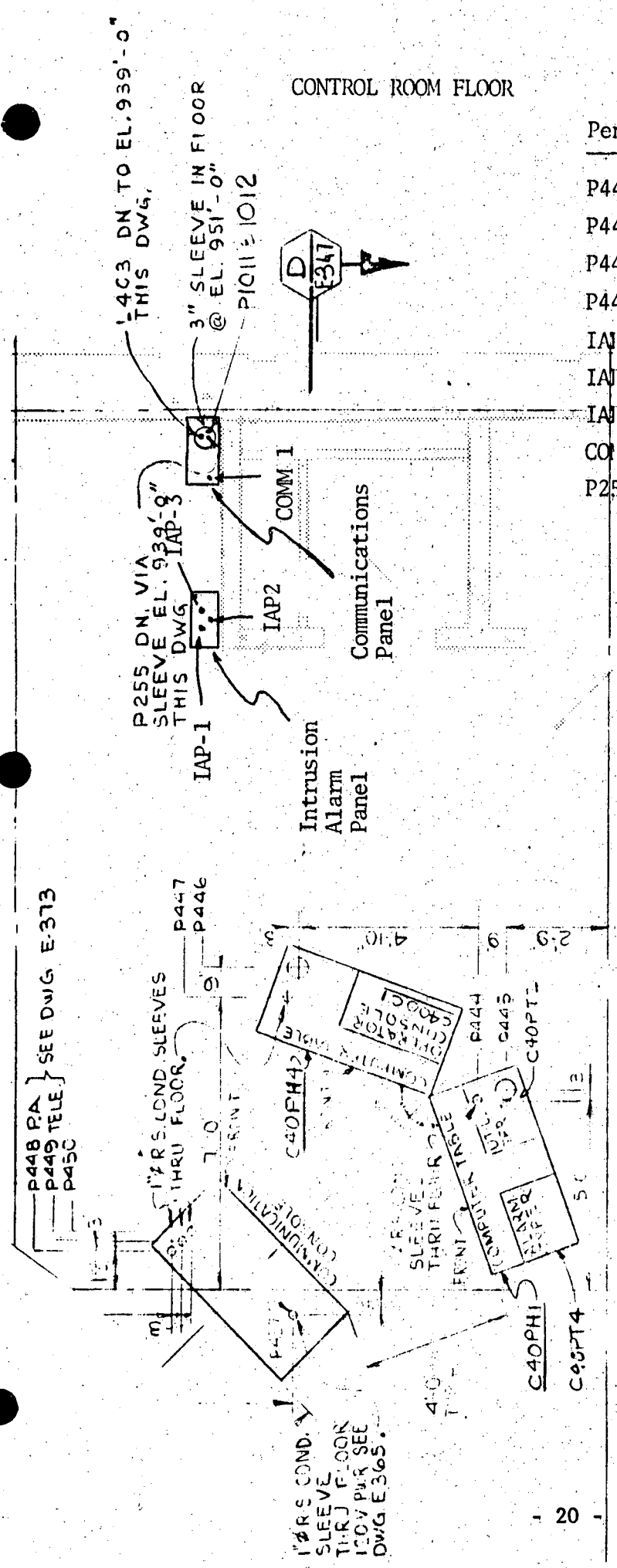

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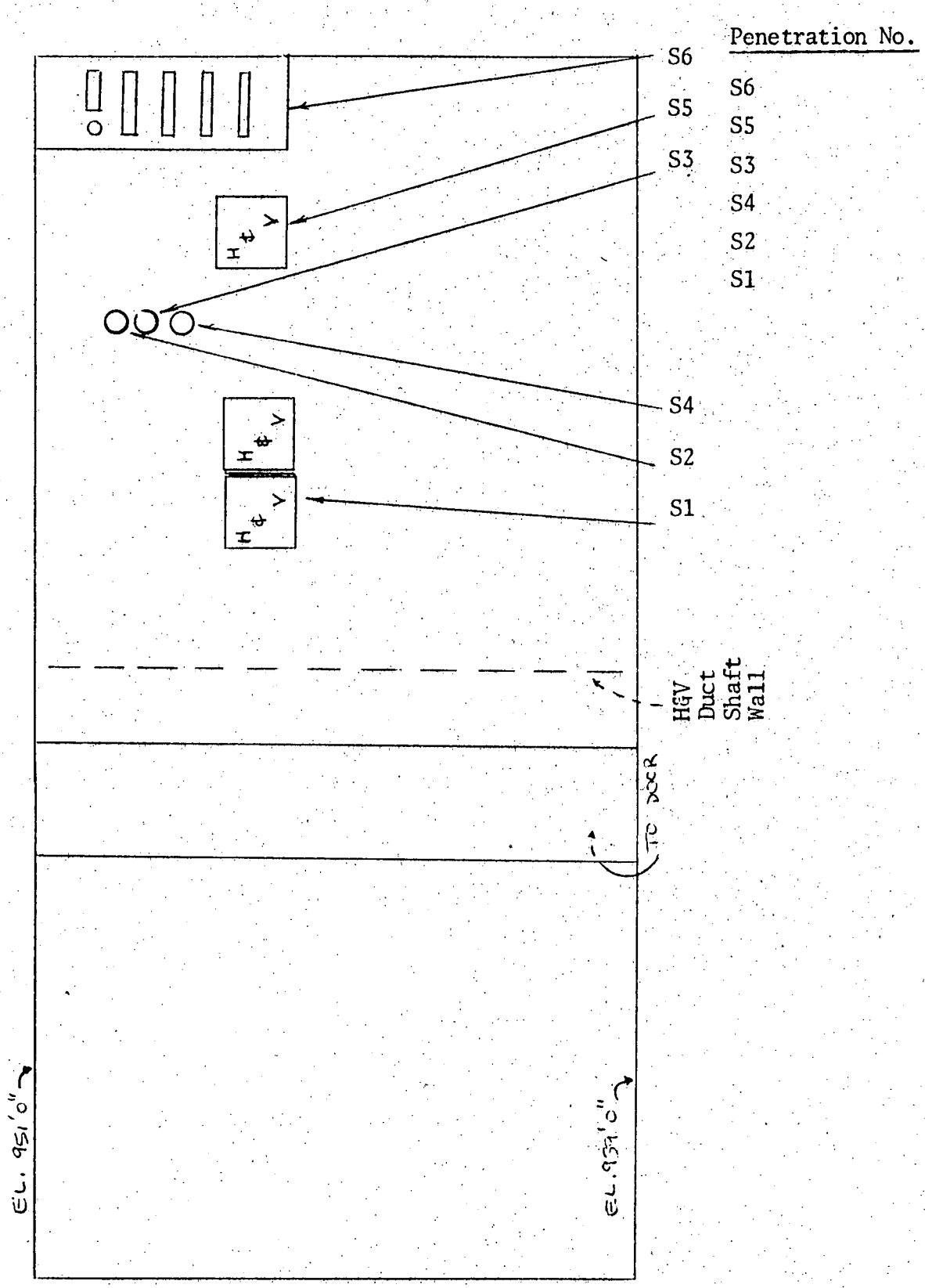
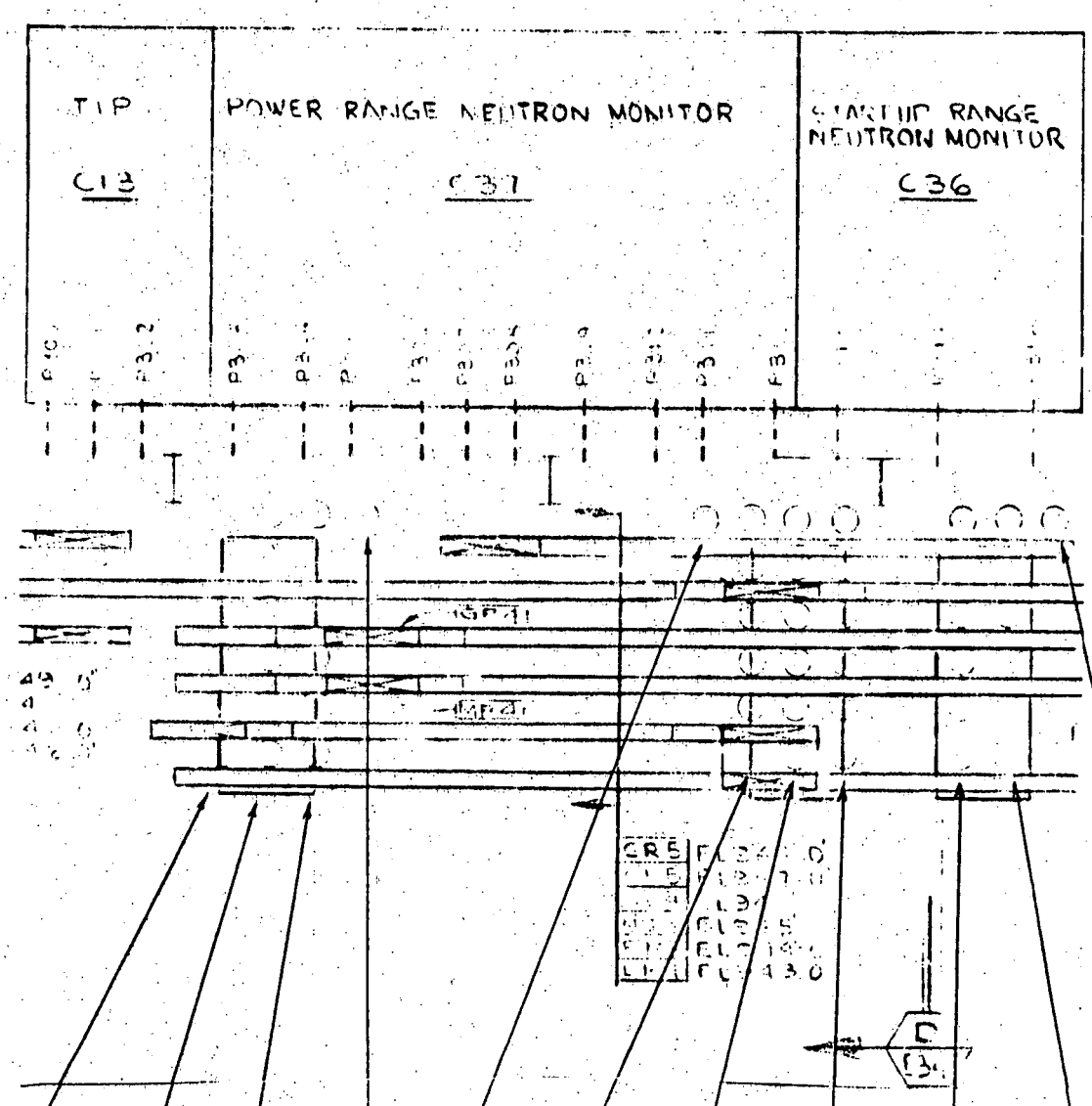
CABLE SPREADING ROOM - SOUTH WALL



CABLE SPREADING ROOM CEILING
AND REACTOR BUILDING WALL



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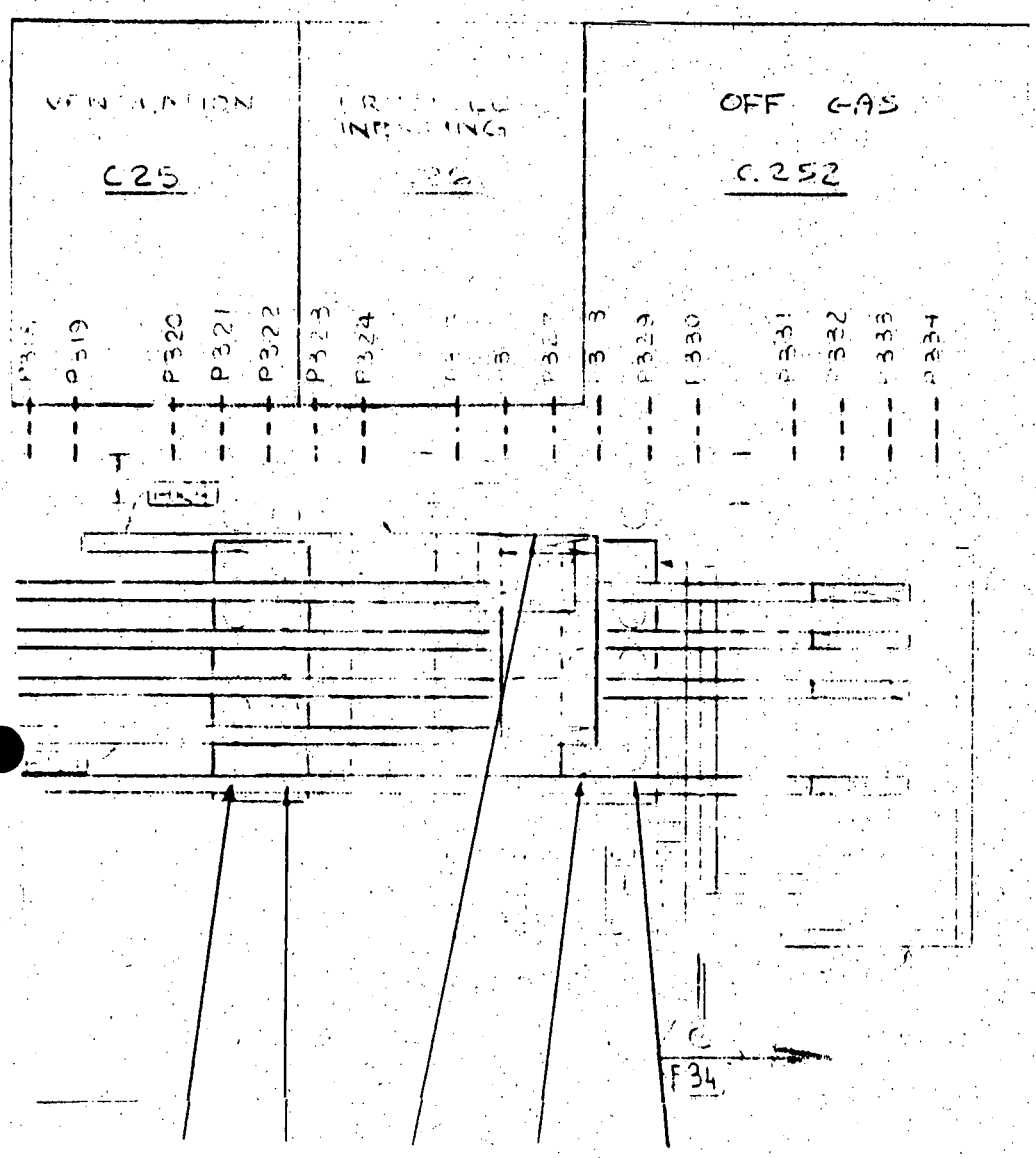
	P133	P134	P135			P136	P137	P138	P233	P234	
	P139	P140	P141			P142	P143	P144	P239	P240	
BOTTOM	P145	P146	P147			P148	P149	P150	P245	P246	

CABLE SPREADING ROOM CEILING
AND REACTOR BUILDING WALL



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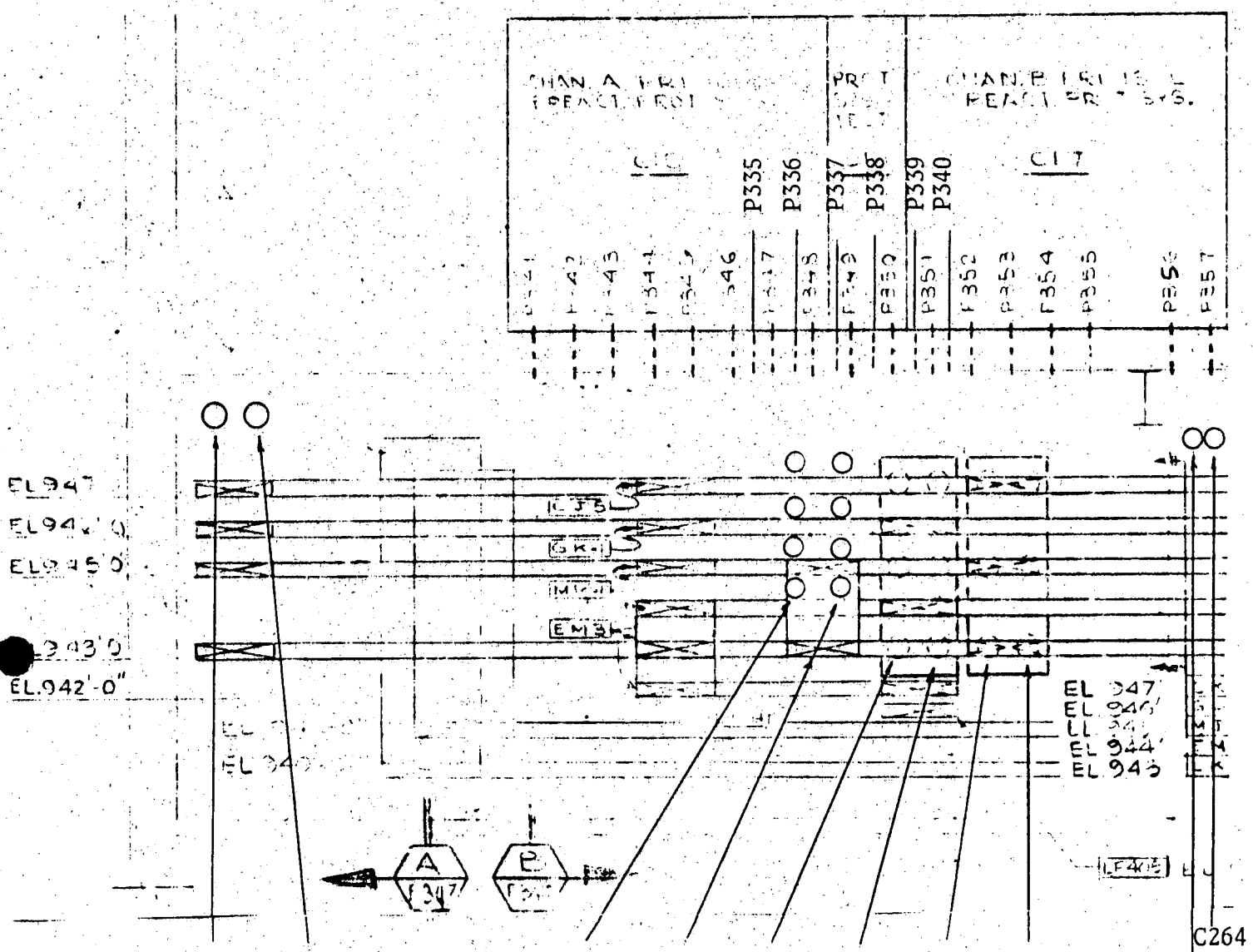
CABLE SPREADING ROOM CEILING
AND TURBINE BUILDING WALL



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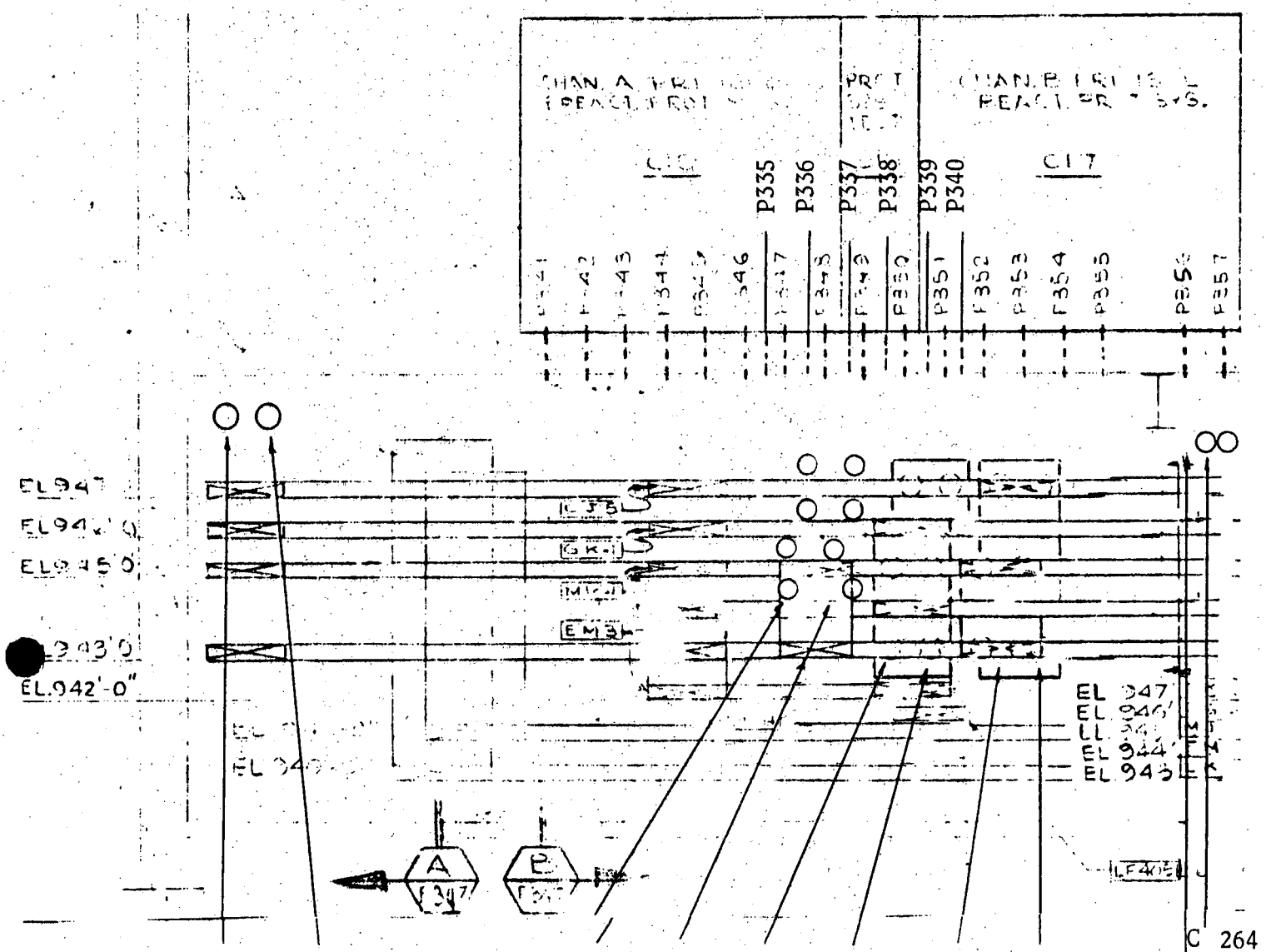
		BOTTOM	N9	N10				

CABLE SPREADING ROOM CEILING
AND TURBINE BUILDING WALL



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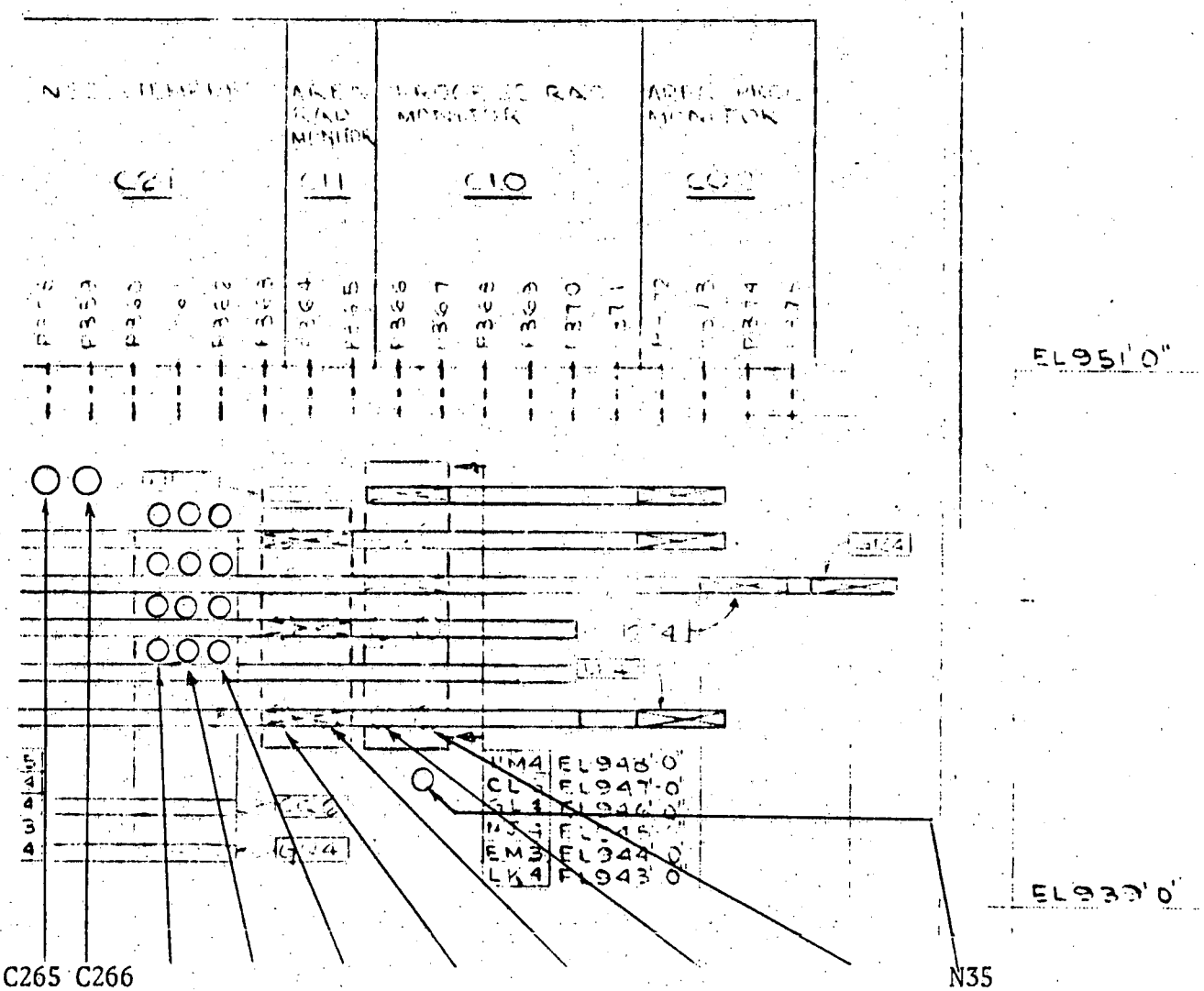
CABLE SPREADING ROOM CEILING
AND TURBINE BUILDING WALL



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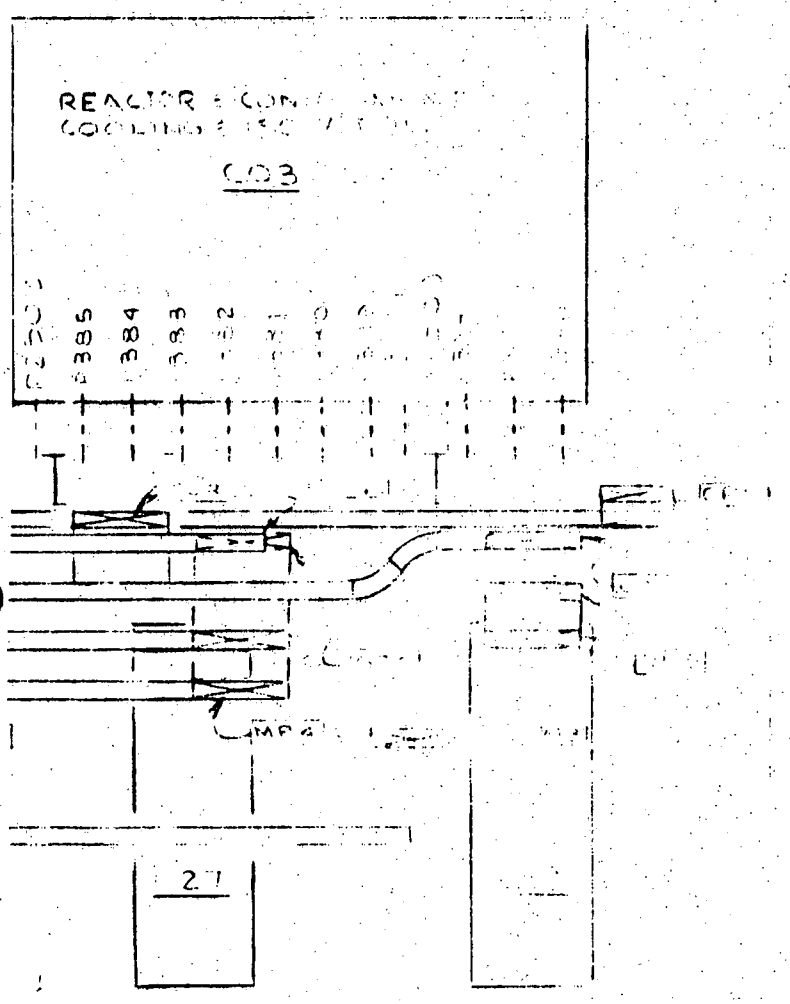
CABLE SPREADING ROOM CEILING
AND TURBINE BUILDING WALL



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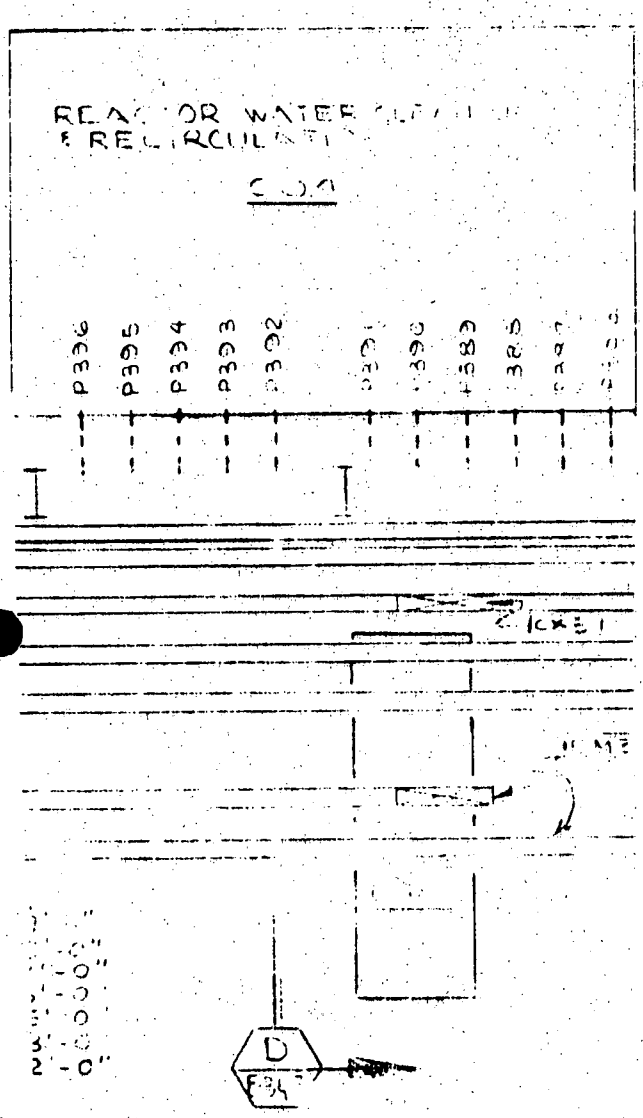
CABLE SPREADING ROOM CEILING



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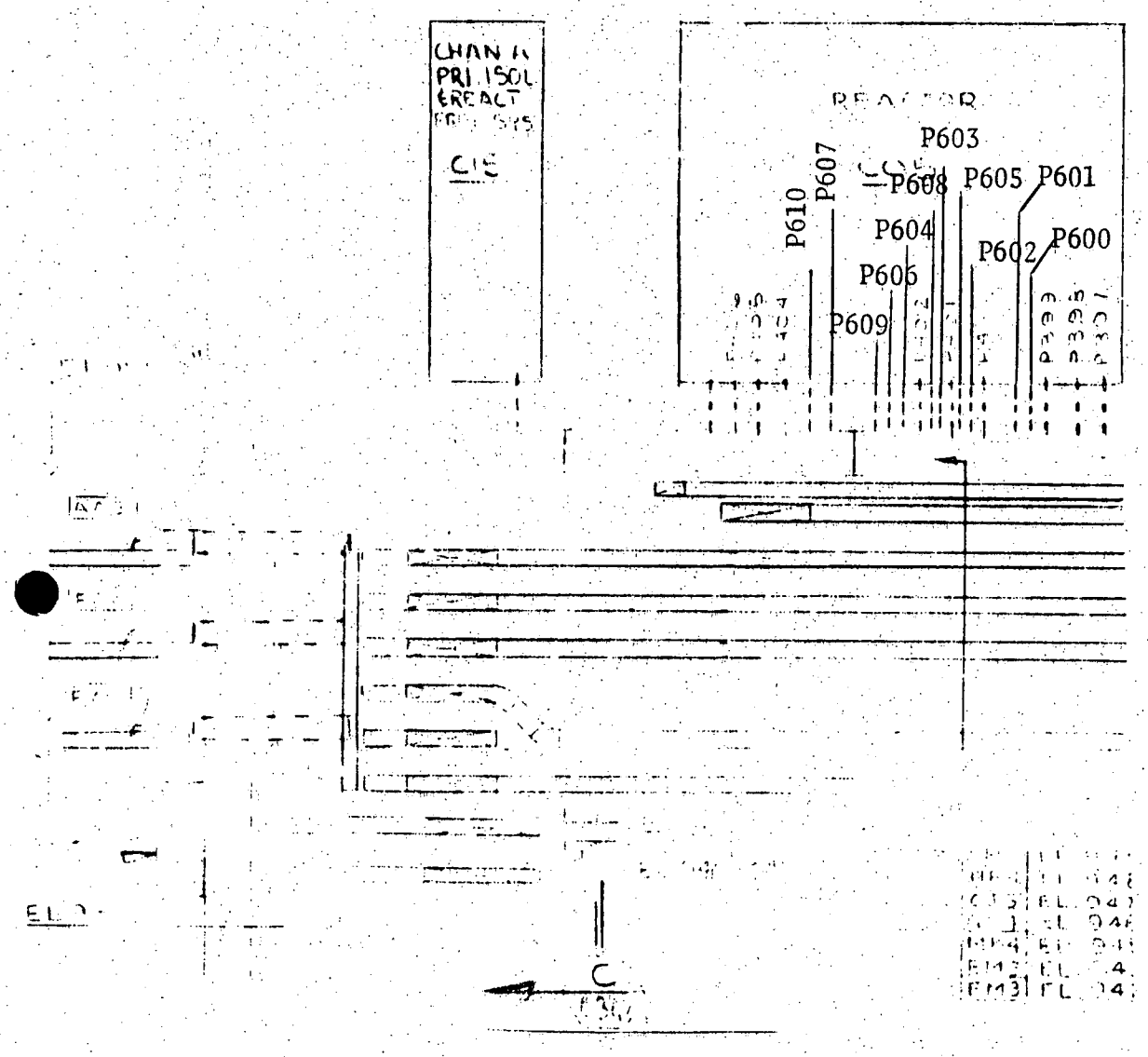
CABLE SPREADING ROOM CEILING



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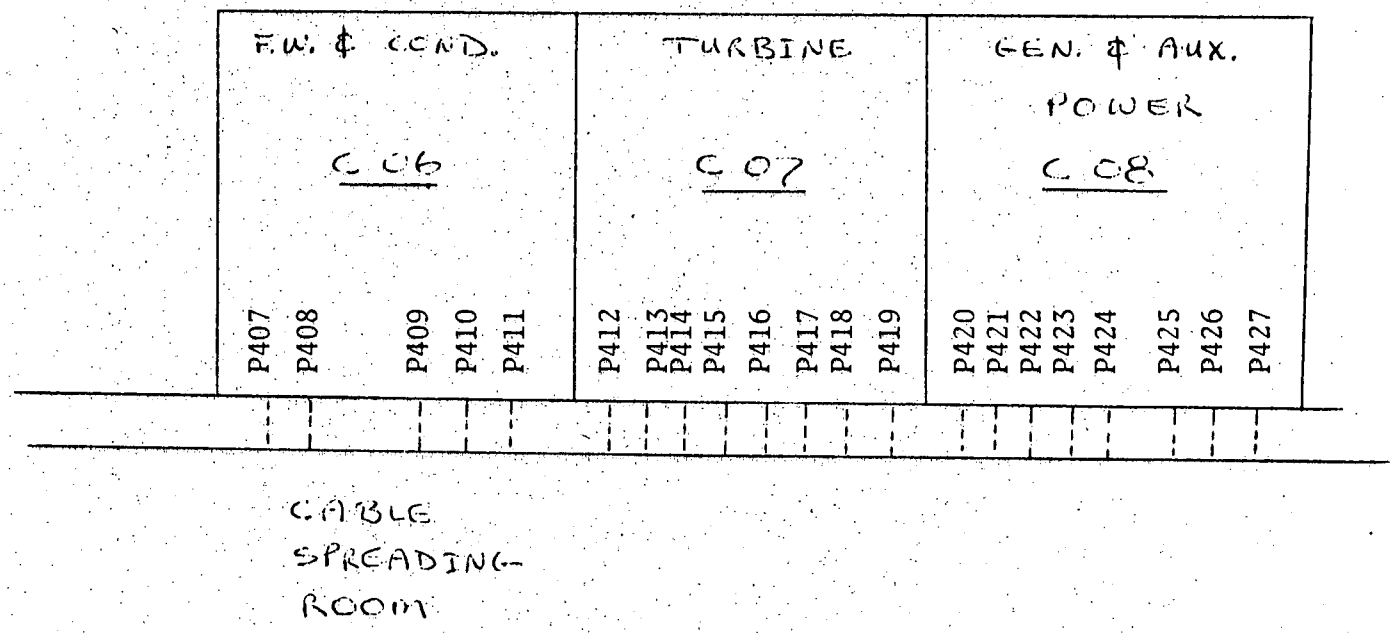

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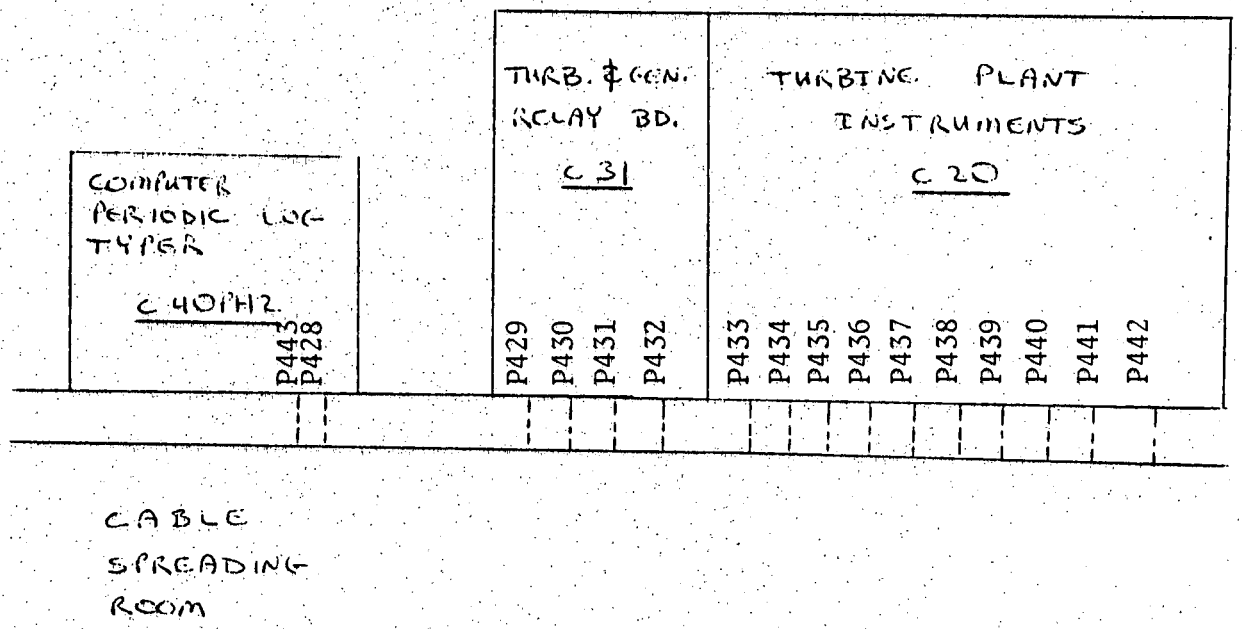

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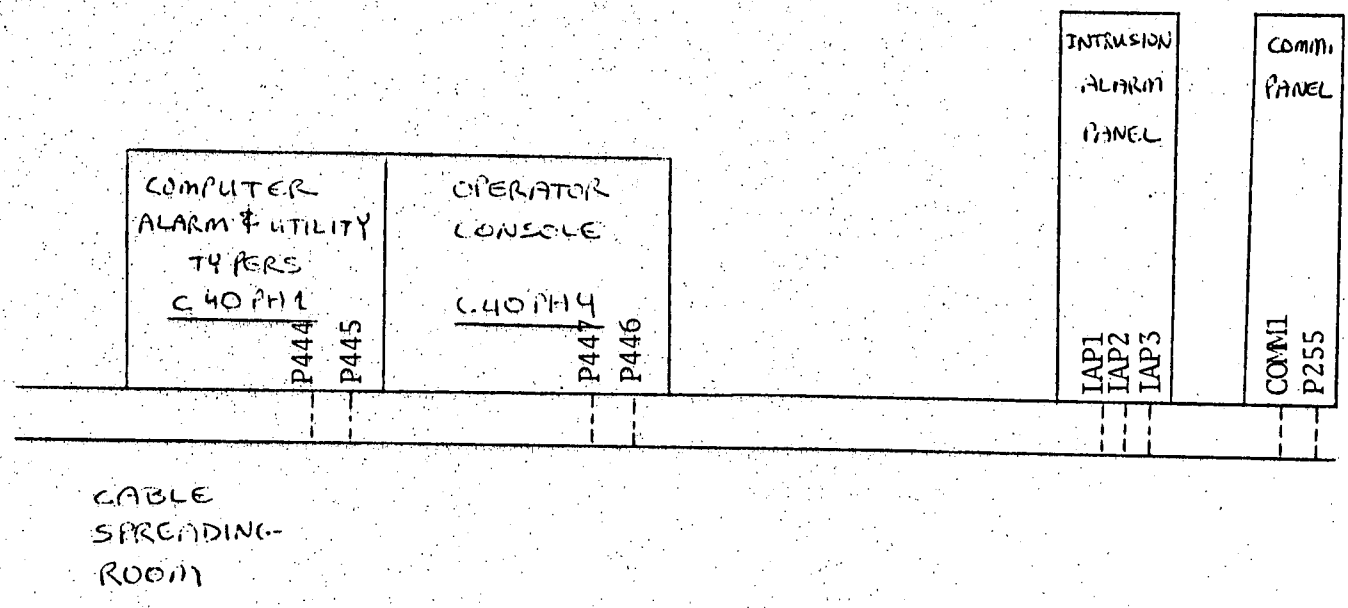

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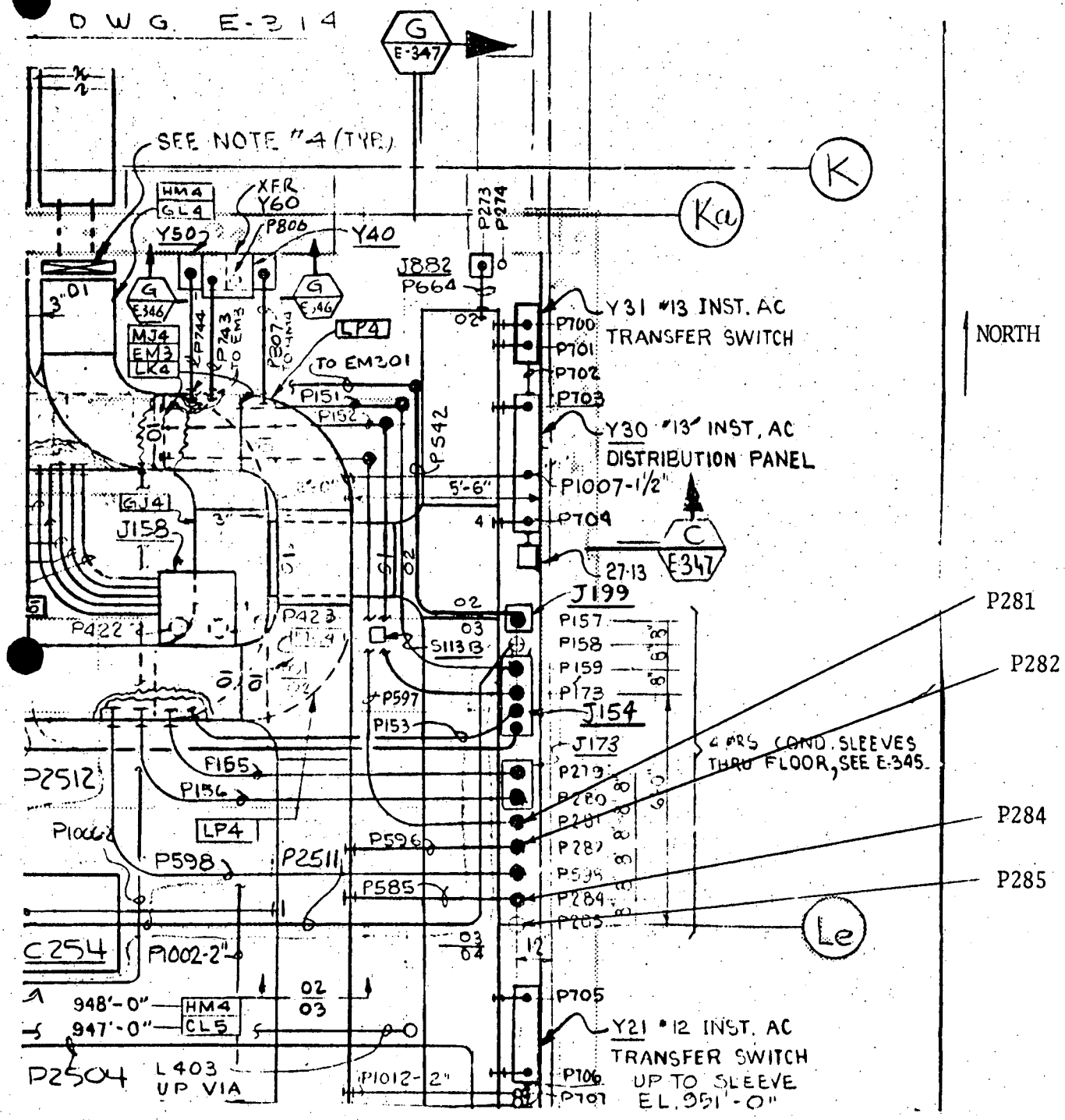
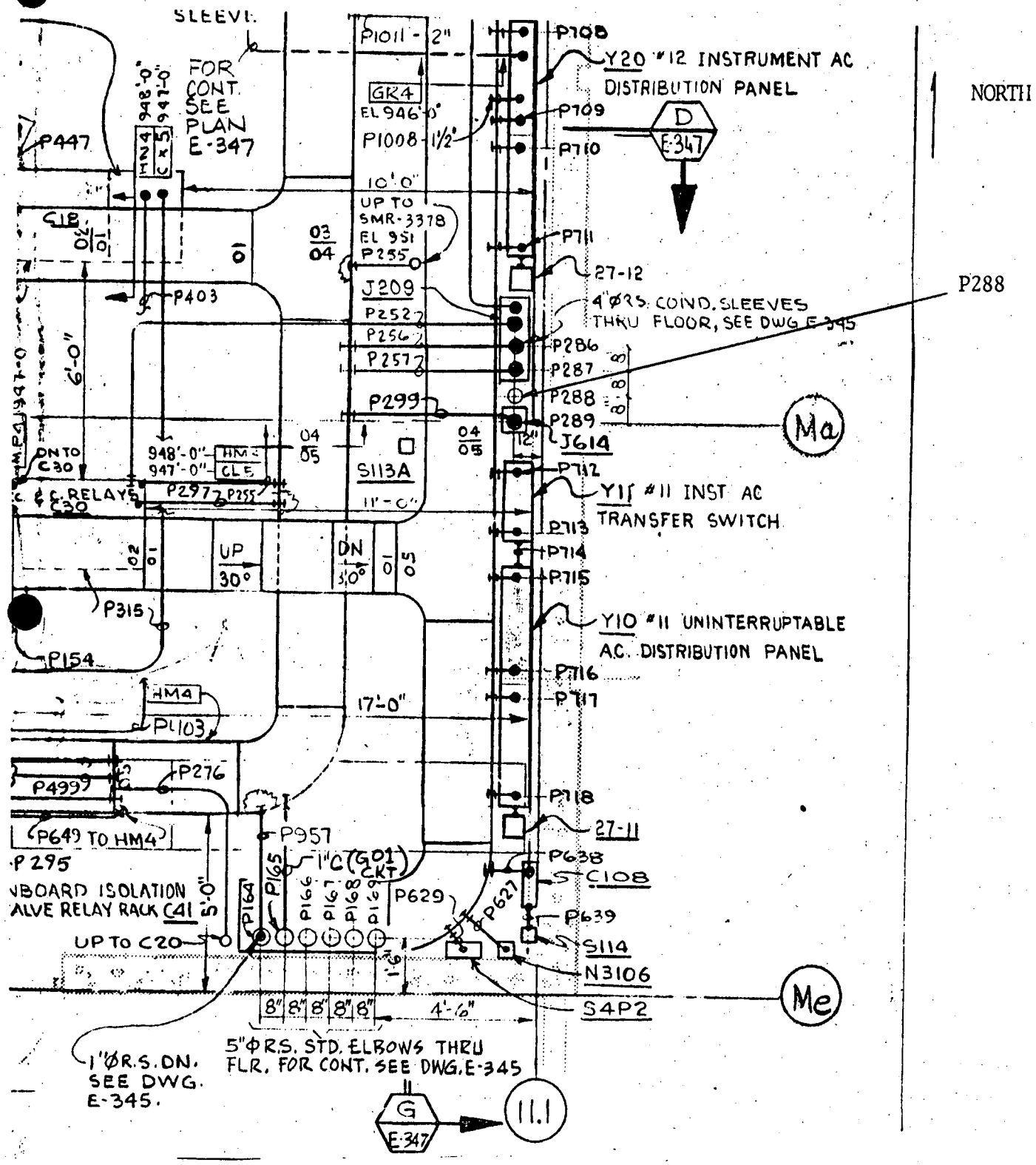
CABLE SPREADING ROOM FLOOR
NORTHEAST CORNER



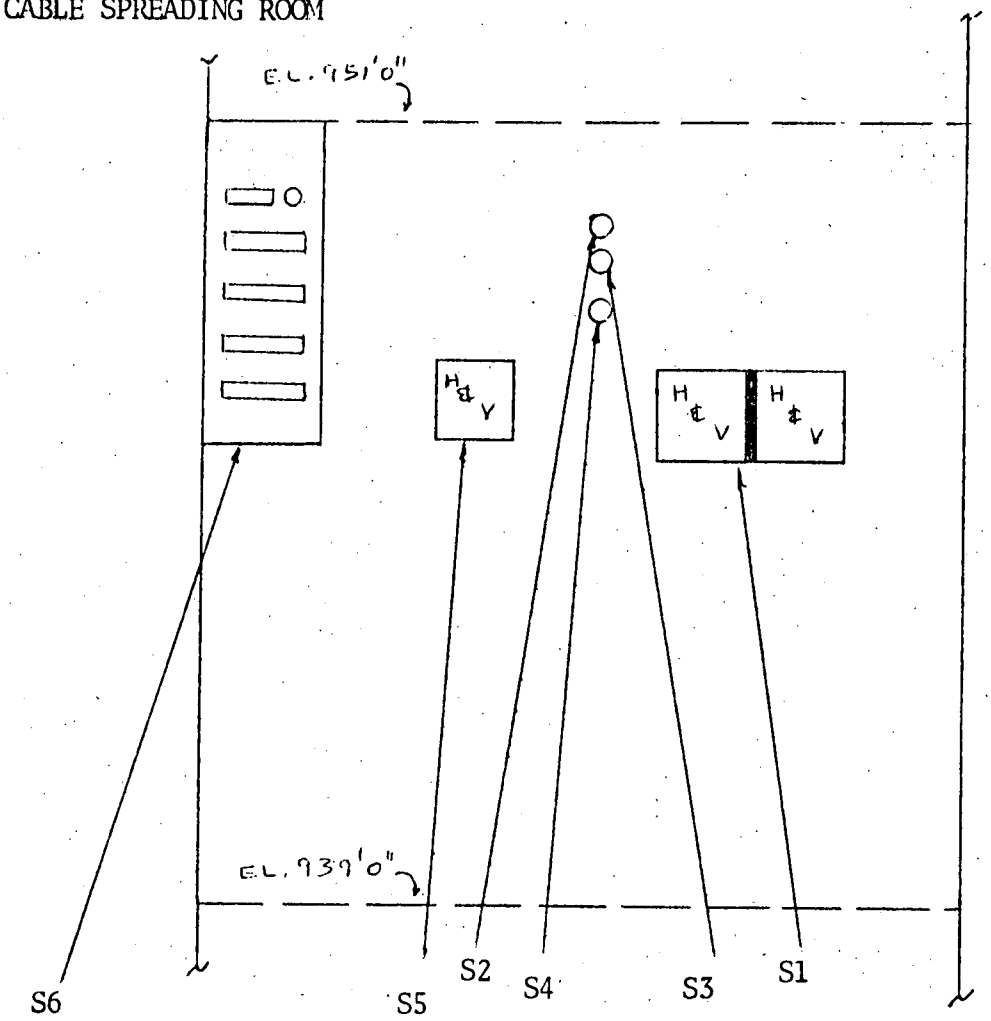
CABLE SPREADING ROOM FLOOR
SOUTHEAST CORNER



Penetration No.

P288

OFFICE & CONTROL BUILDING-DUCT SHAFT, NORTH WALL
AT CABLE SPREADING ROOM



Penetration No.

S6

S5

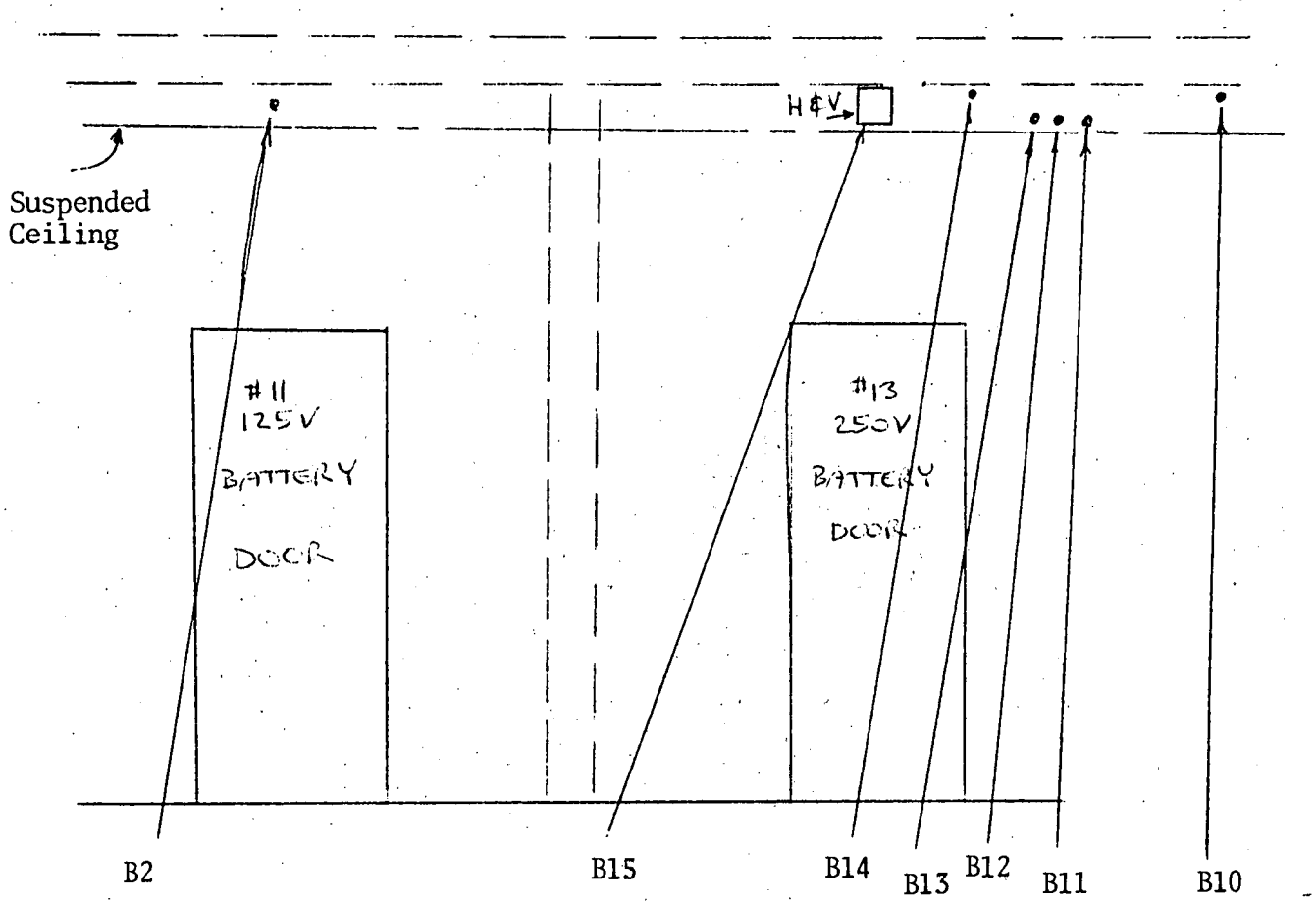
S2

S4

S3

S1

ACCESS CONTROL AREA HALL-EAST WALL



Penetration No.

B2

B15

B14

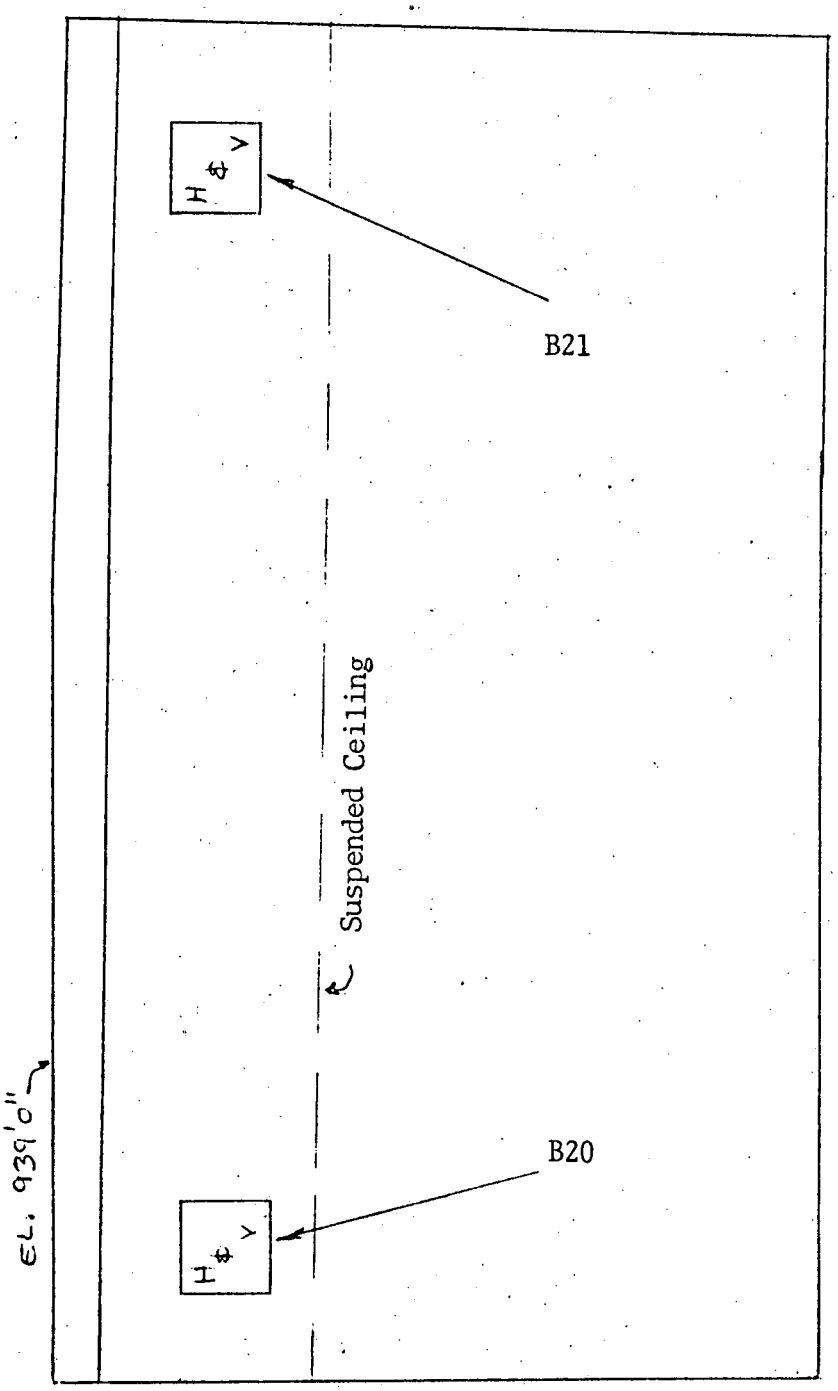
B13

B12

B11

B10

RADIATION PROTECTION SPECIALIST ROOM-NORTH WALL

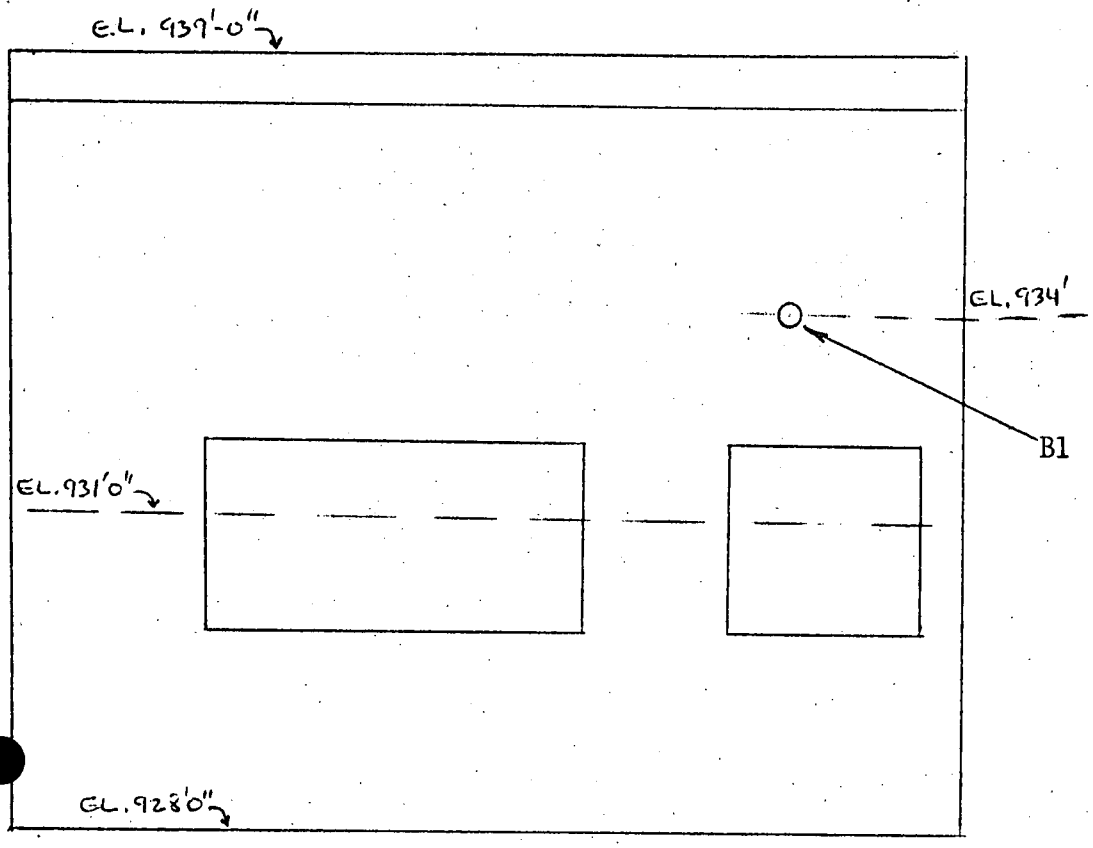


Penetration No.

B21

B20

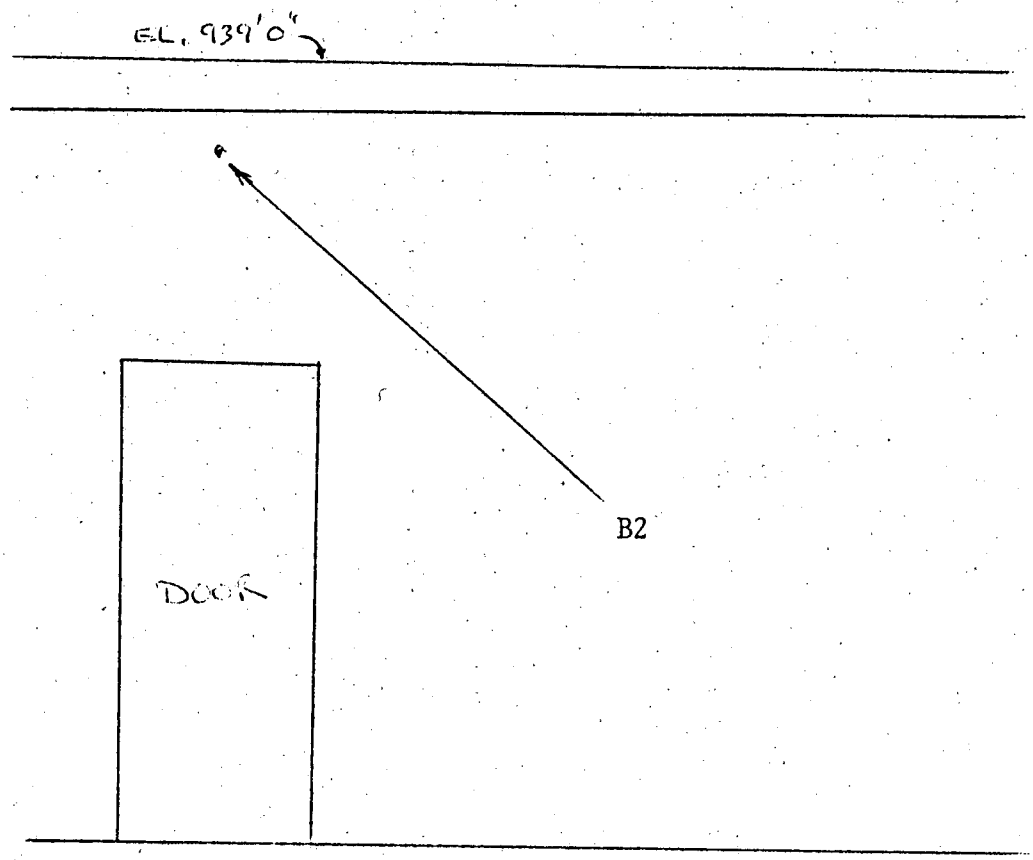
#11-125V BATTERY ROOM-NORTH WALL



Penetration No.

B1

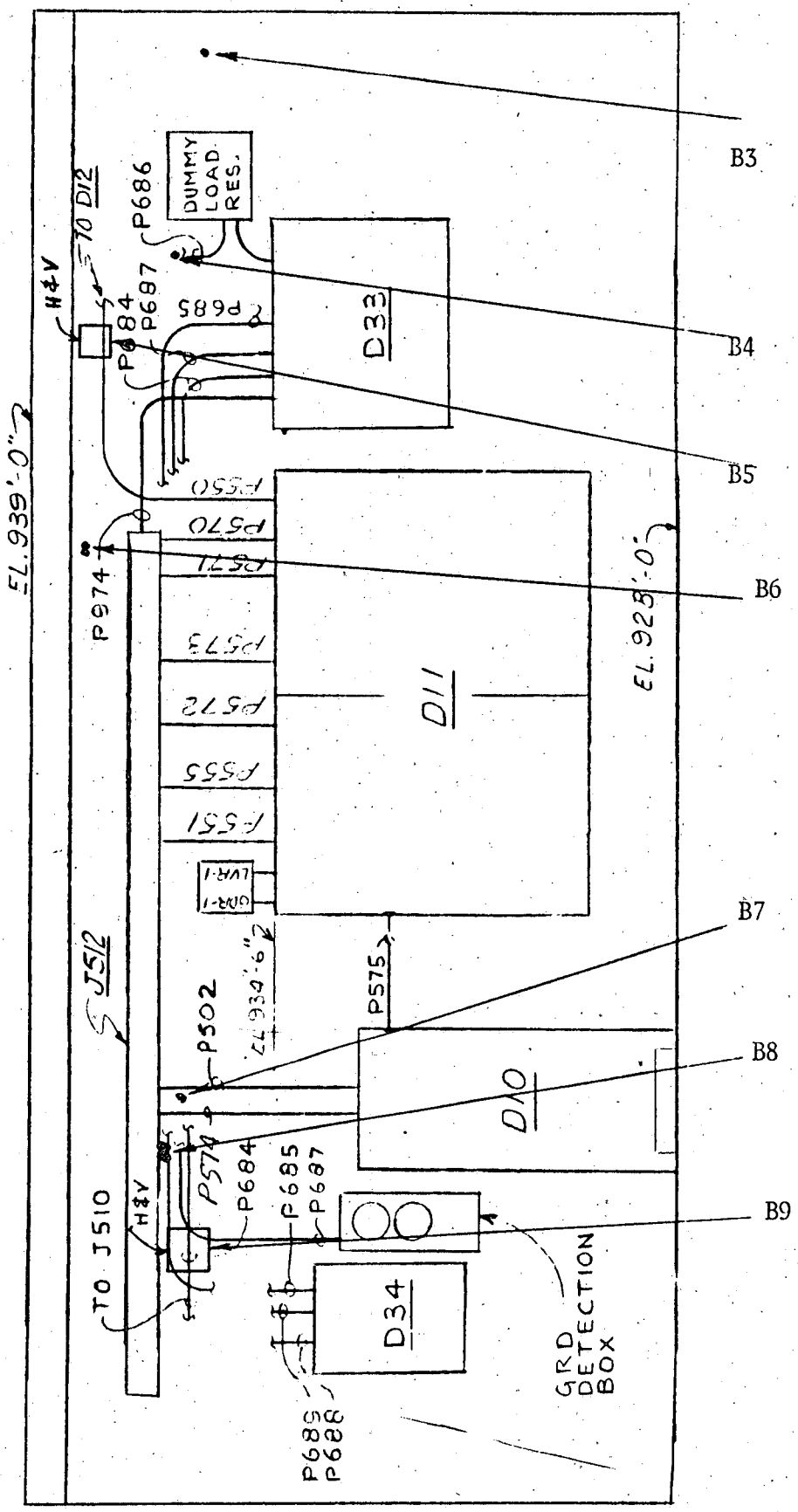
#11-125V BATTERY ROOM-WEST WALL



Penetration No.

B2

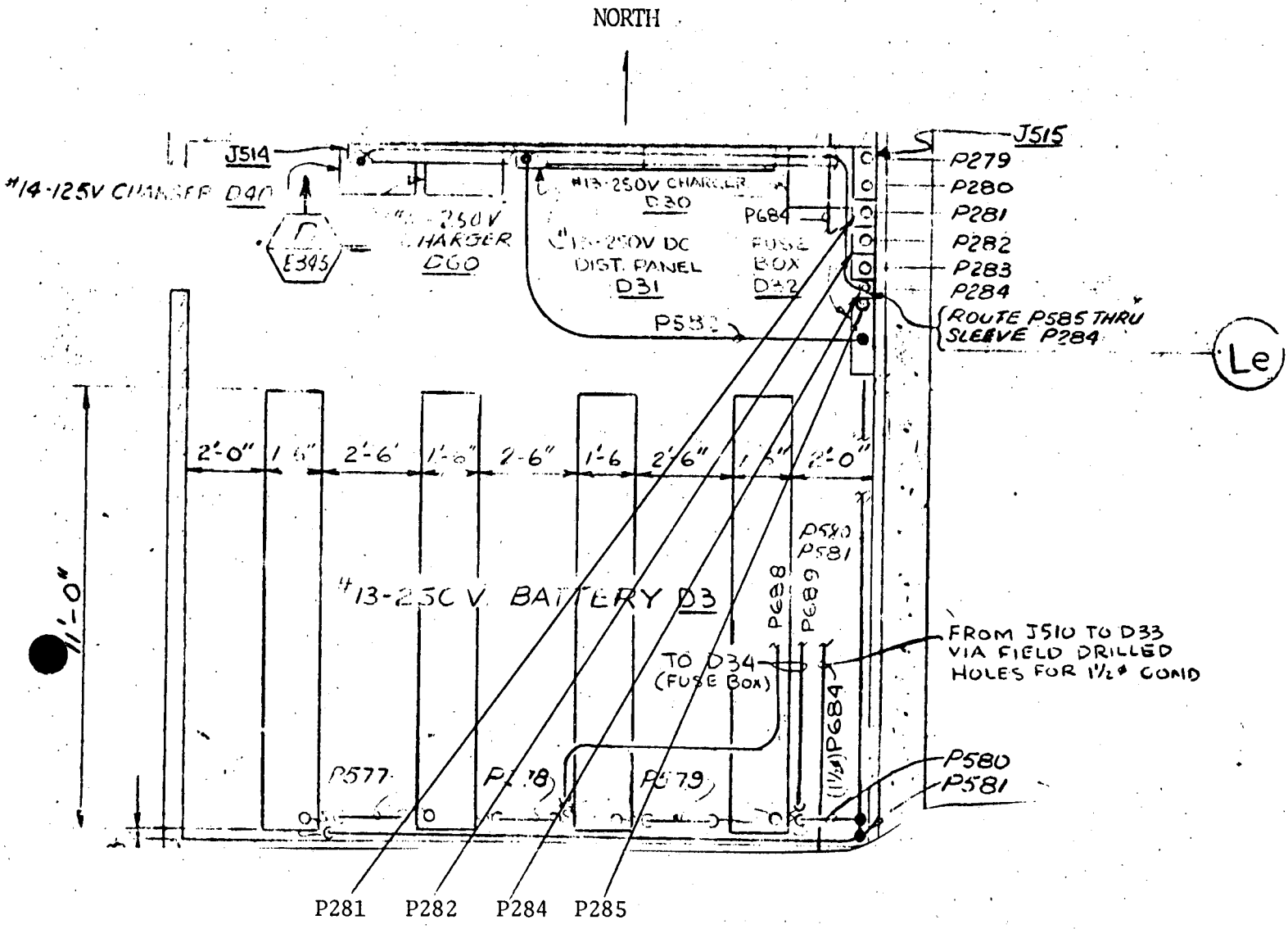
#11-125V BATTERY ROOM-SOUTH WALL



Penetration No.

B3
B4
B5
B6
B7
B8
B9

250V BATTERY ROOM-CEILING



Penetration No.

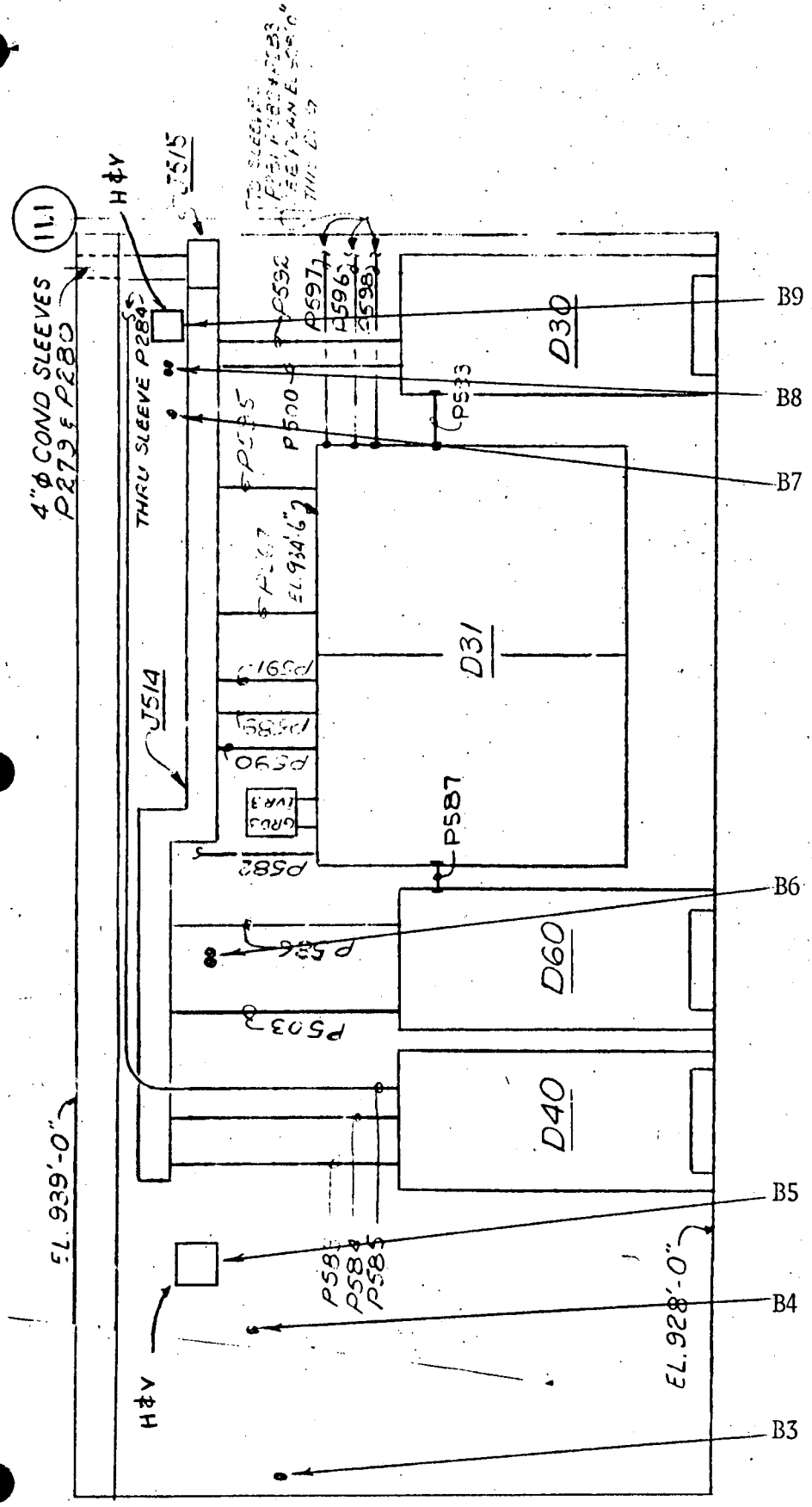
P281

P282

P284

P285

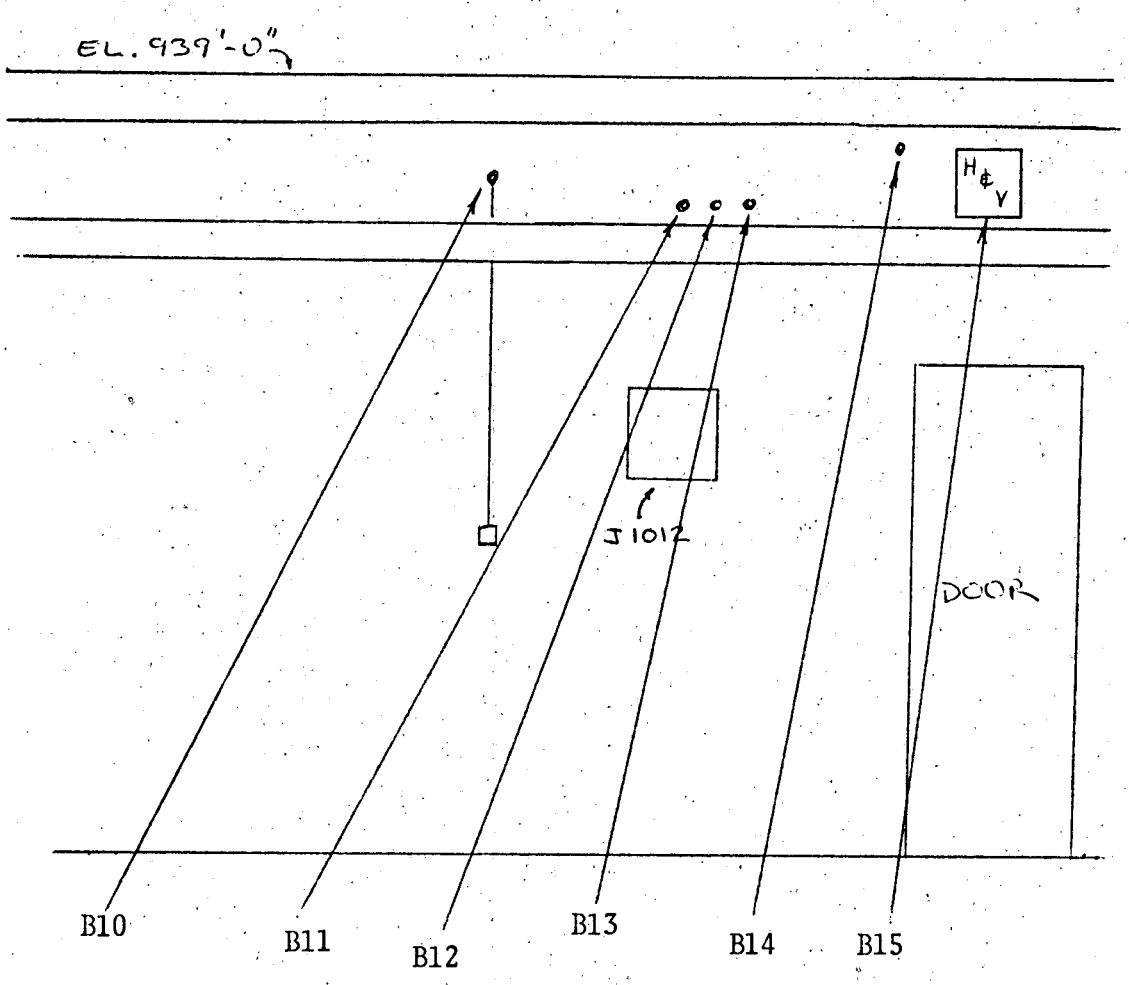
250V BATTERY ROOM-NORTH WALL



Penetration

B9
B8
B7
B6
B5
B4
B3

250V BATTERY ROOM-WEST WALL



Penetration #

B10

B11

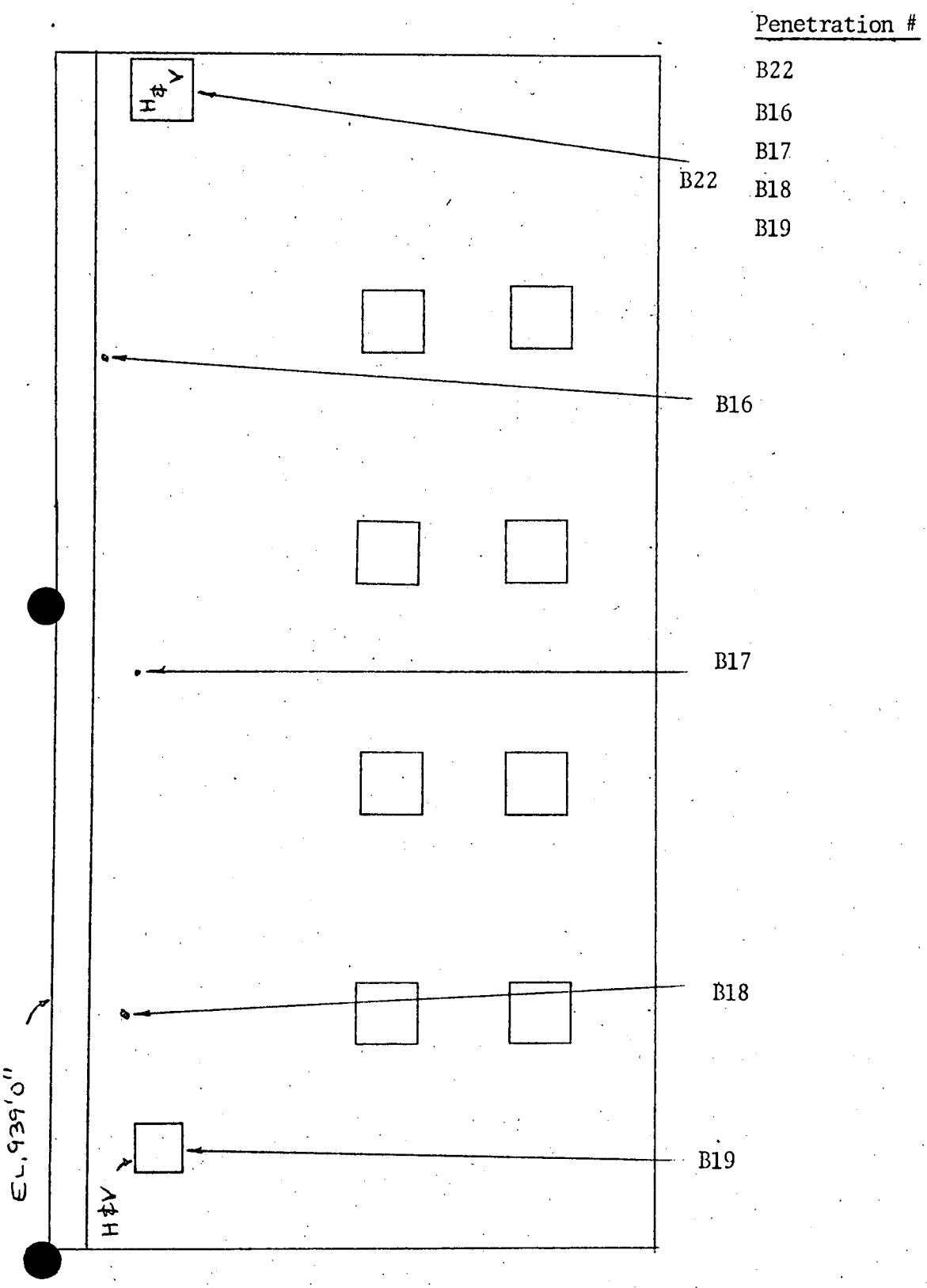
B12

B13

B14

B15

250V BATTERY ROOM-SOUTH WALL



Penetration #

B22

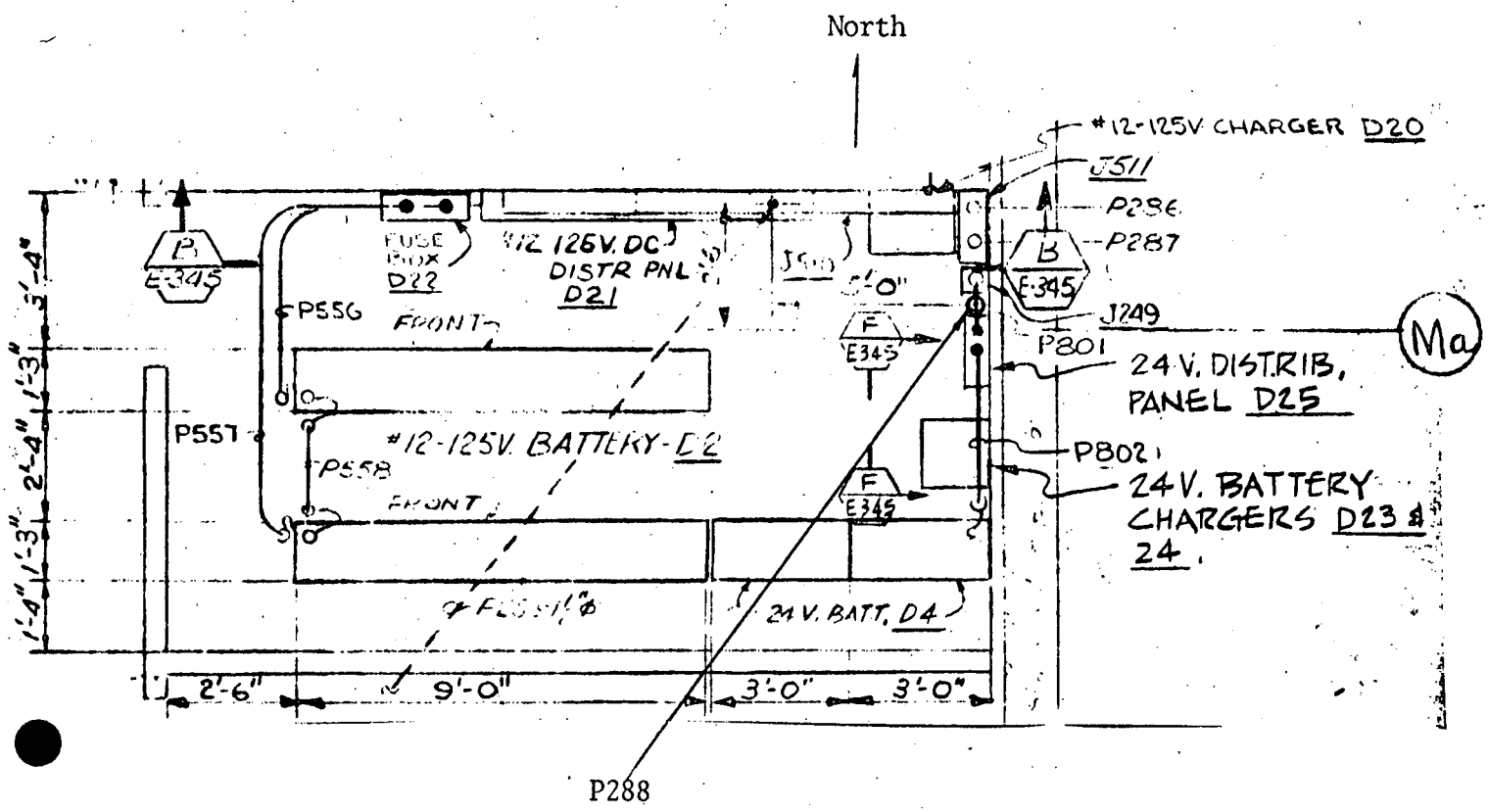
B16

B17

B18

B19

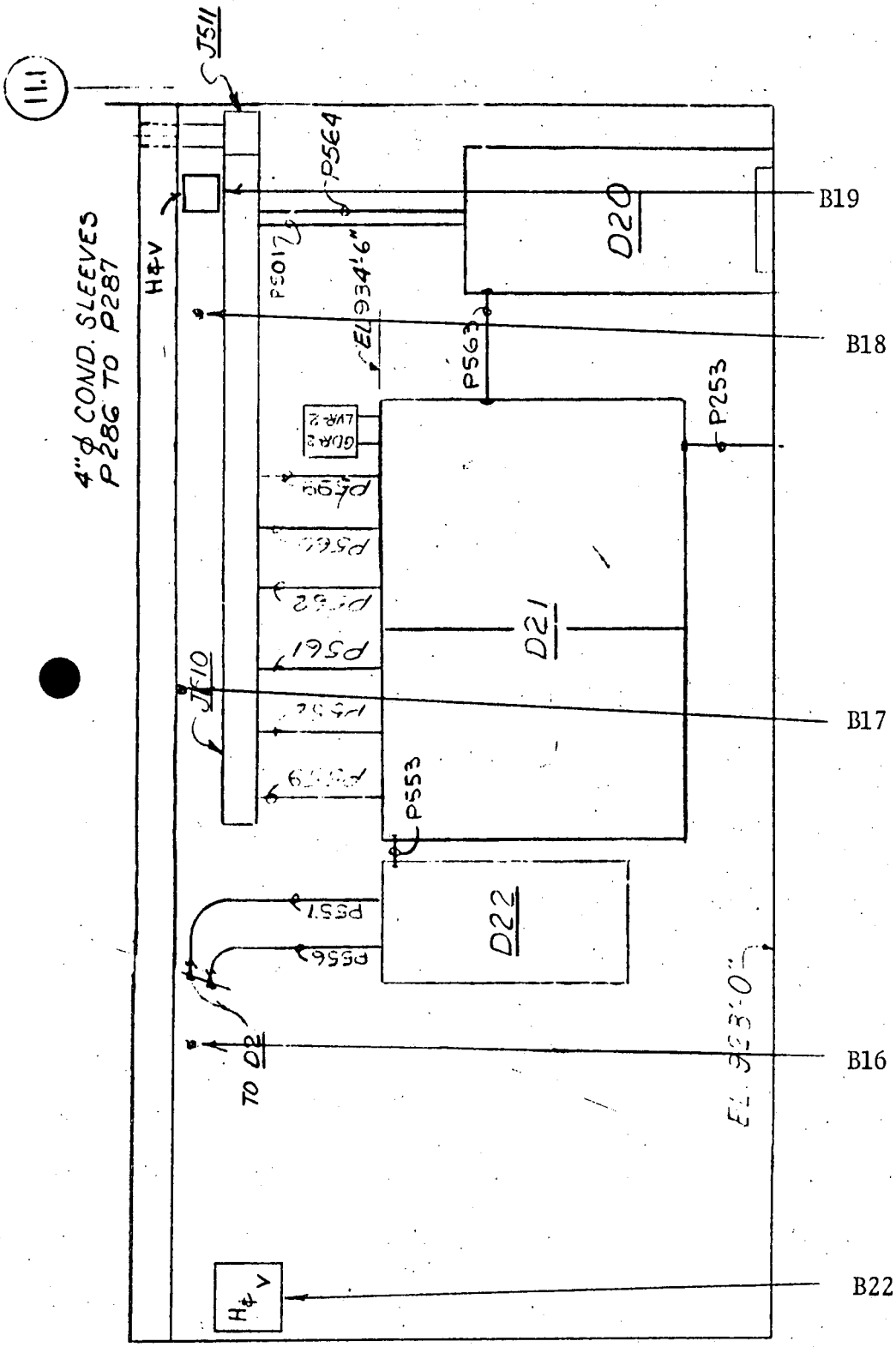
#12-125V BATTERY ROOM-CEILING



Penetration No.

P288

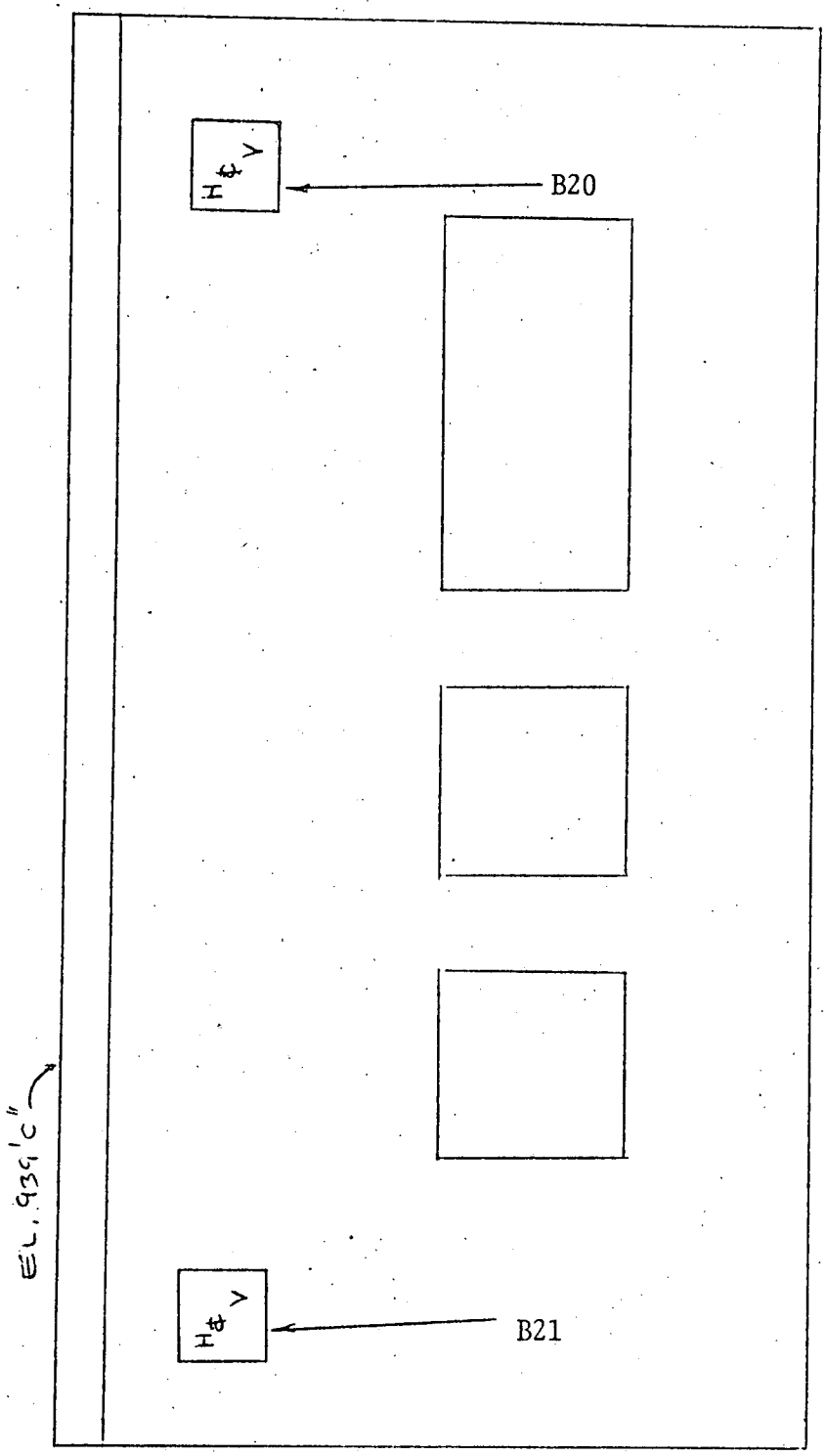
#12-125V BATTERY ROOM-NORTH WALL



Penetration No.

B19
B18
B17
B16
B22

#12-125V BATTERY ROOM-SOUTH WALL

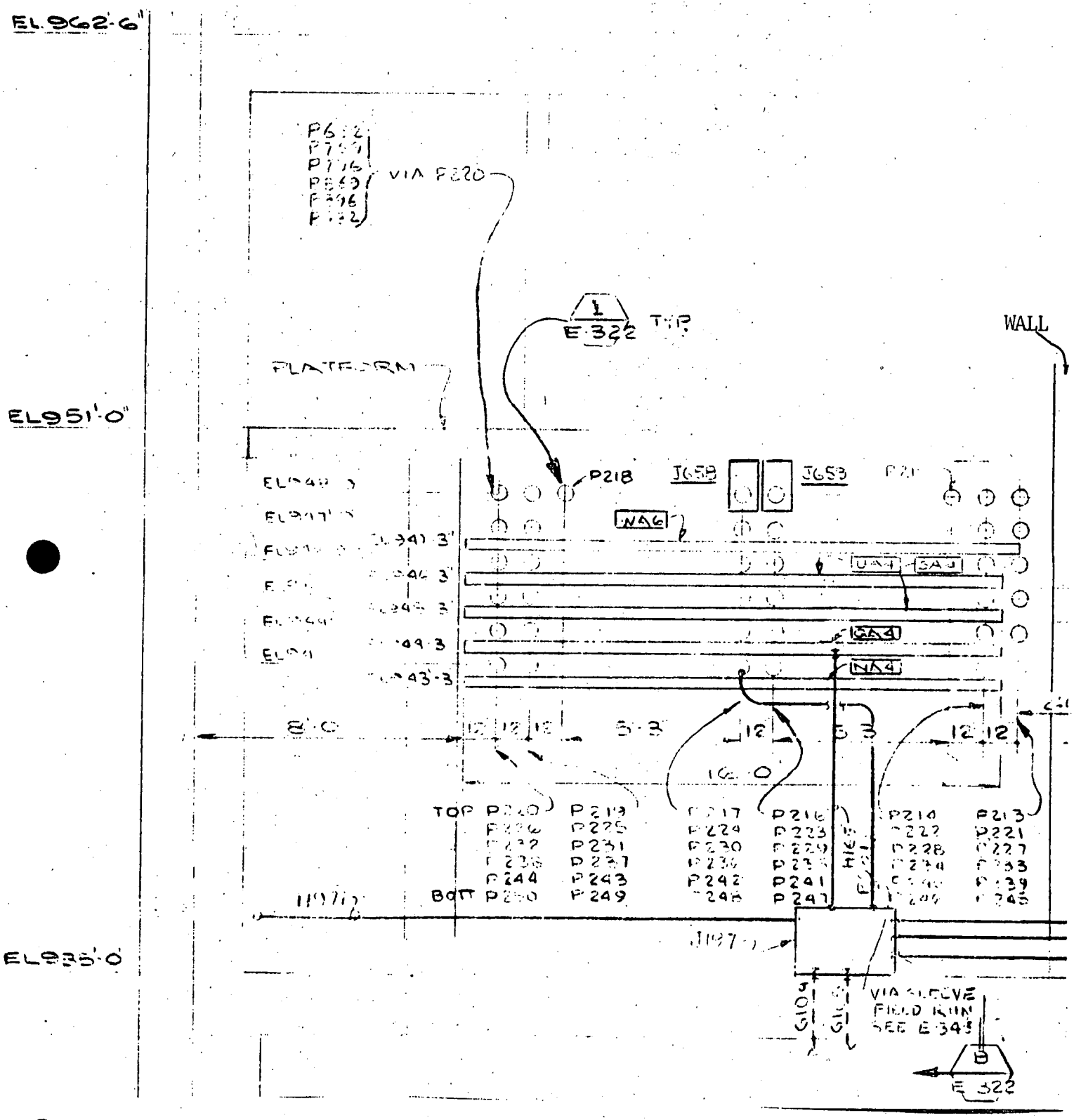


Penetration No.

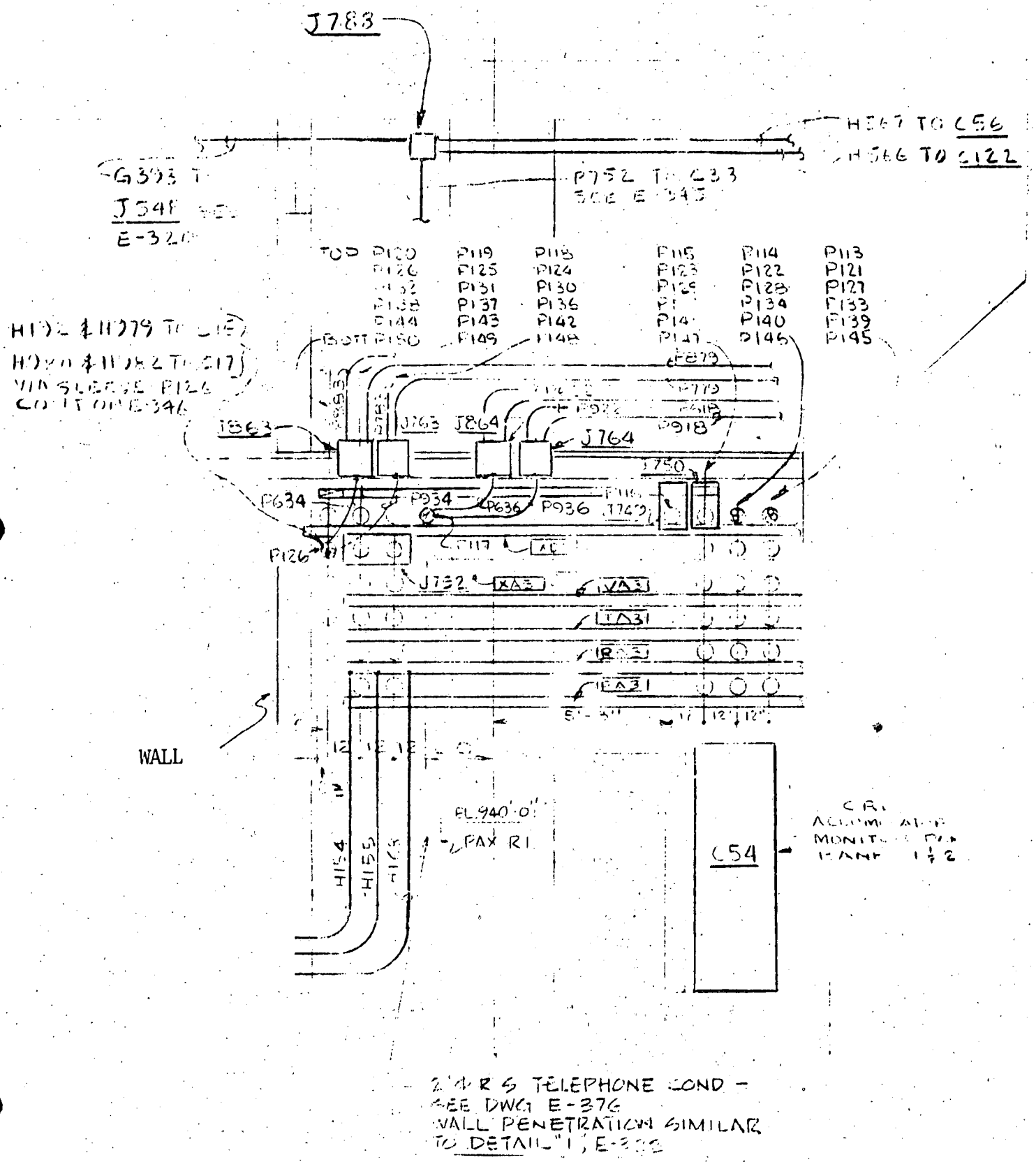
B20

B21

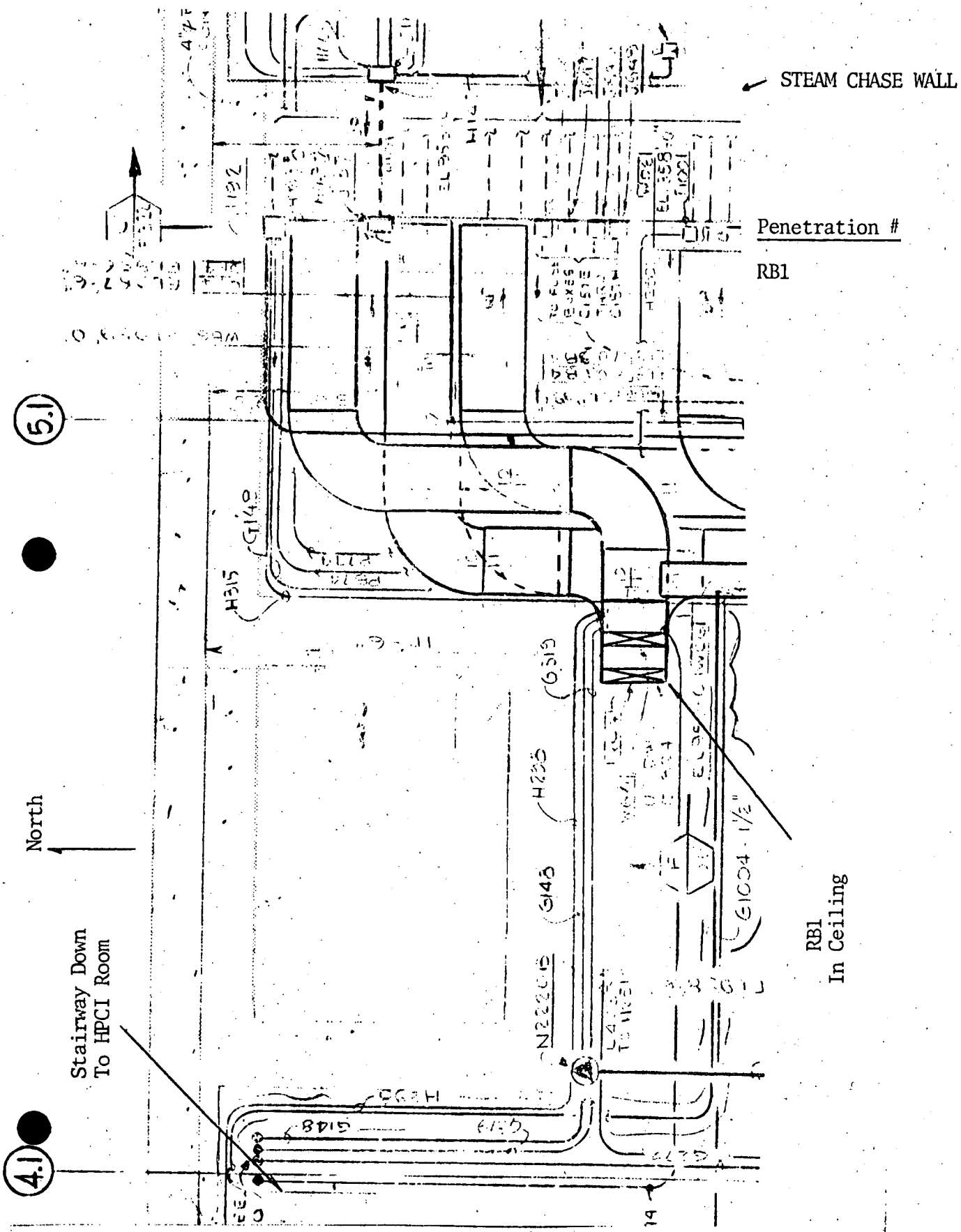
REACTOR BUILDING, CABLE SPREADING ROOM WALL



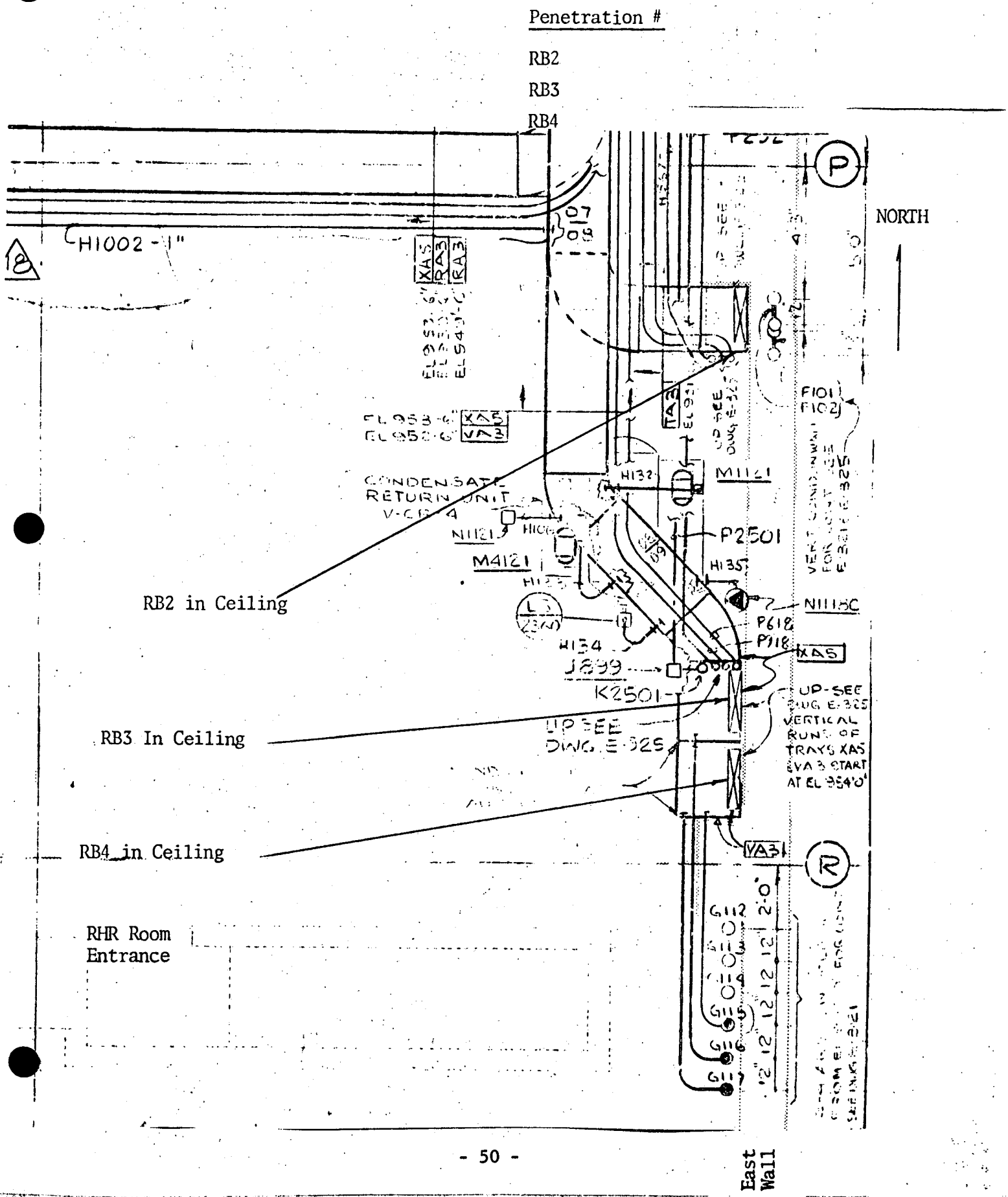
REACTOR BUILDING, CABLE SPREADING ROOM WALL



REACTOR BUILDING-NORTH, EL. 935'0"
FLOOR AND CEILING



REACTOR BUILDING-SOUTH, EL. 935'0"
FLOOR AND CEILING



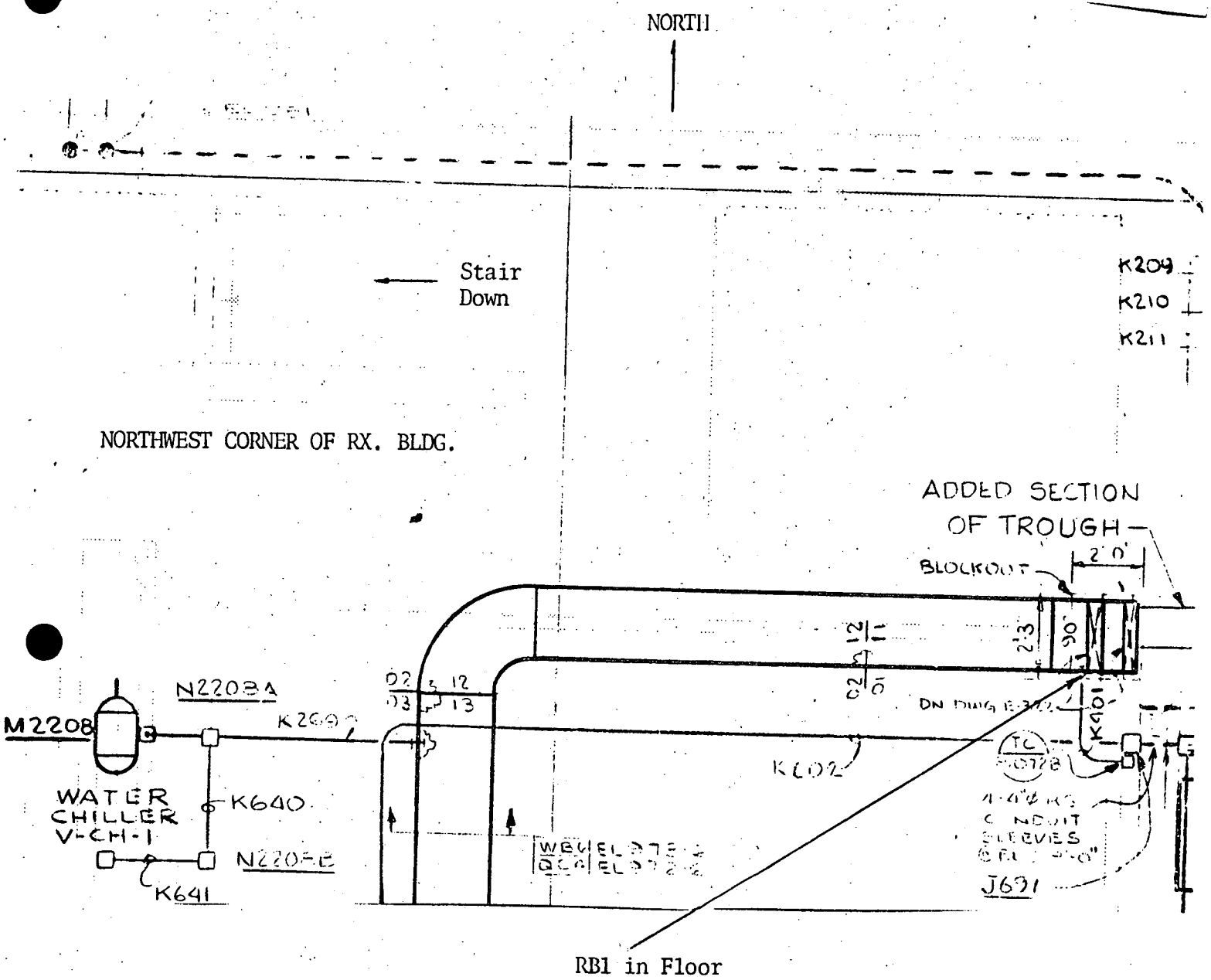
RB2 in Ceiling

RB3 In Ceiling

RB4 in Ceiling

RHR Room
Entrance

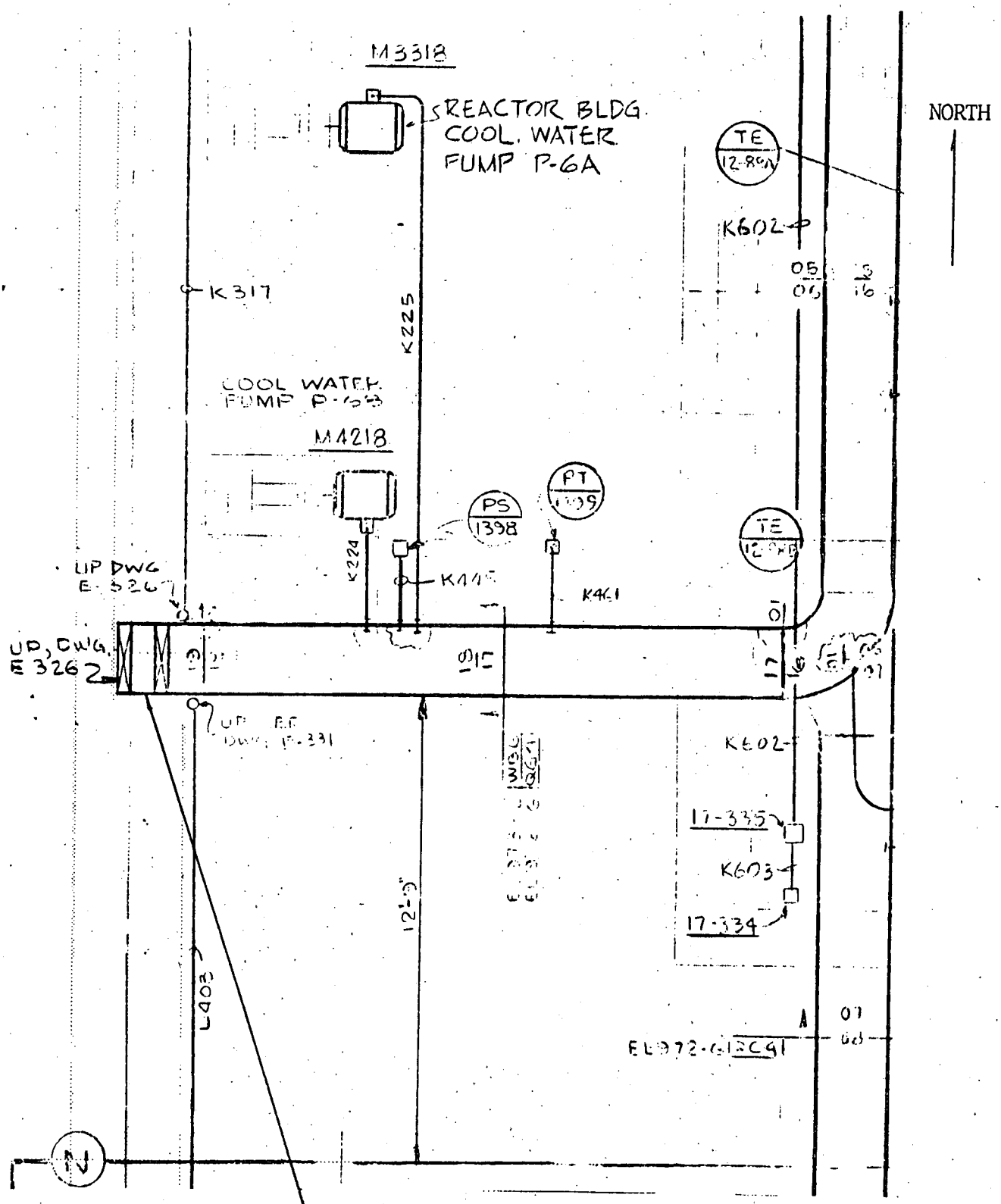
REACTOR BUILDING-NORTH, EL. 962'6"
FLOOR AND CEILING



Penetration No.

RB1

REACTOR BUILDING-NORTH, EL. 962'6"
FLOOR AND CEILING

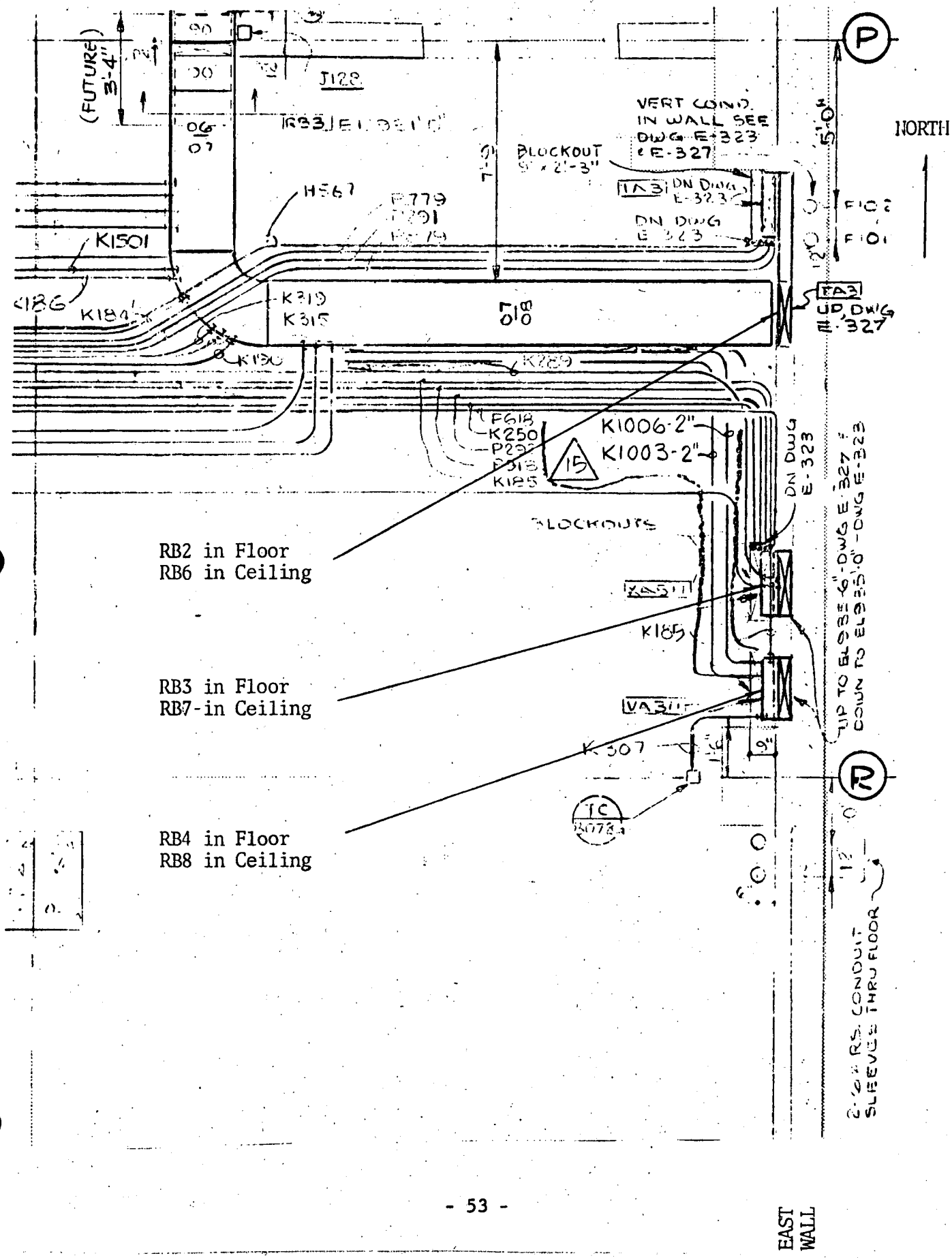


RB5 in Ceiling

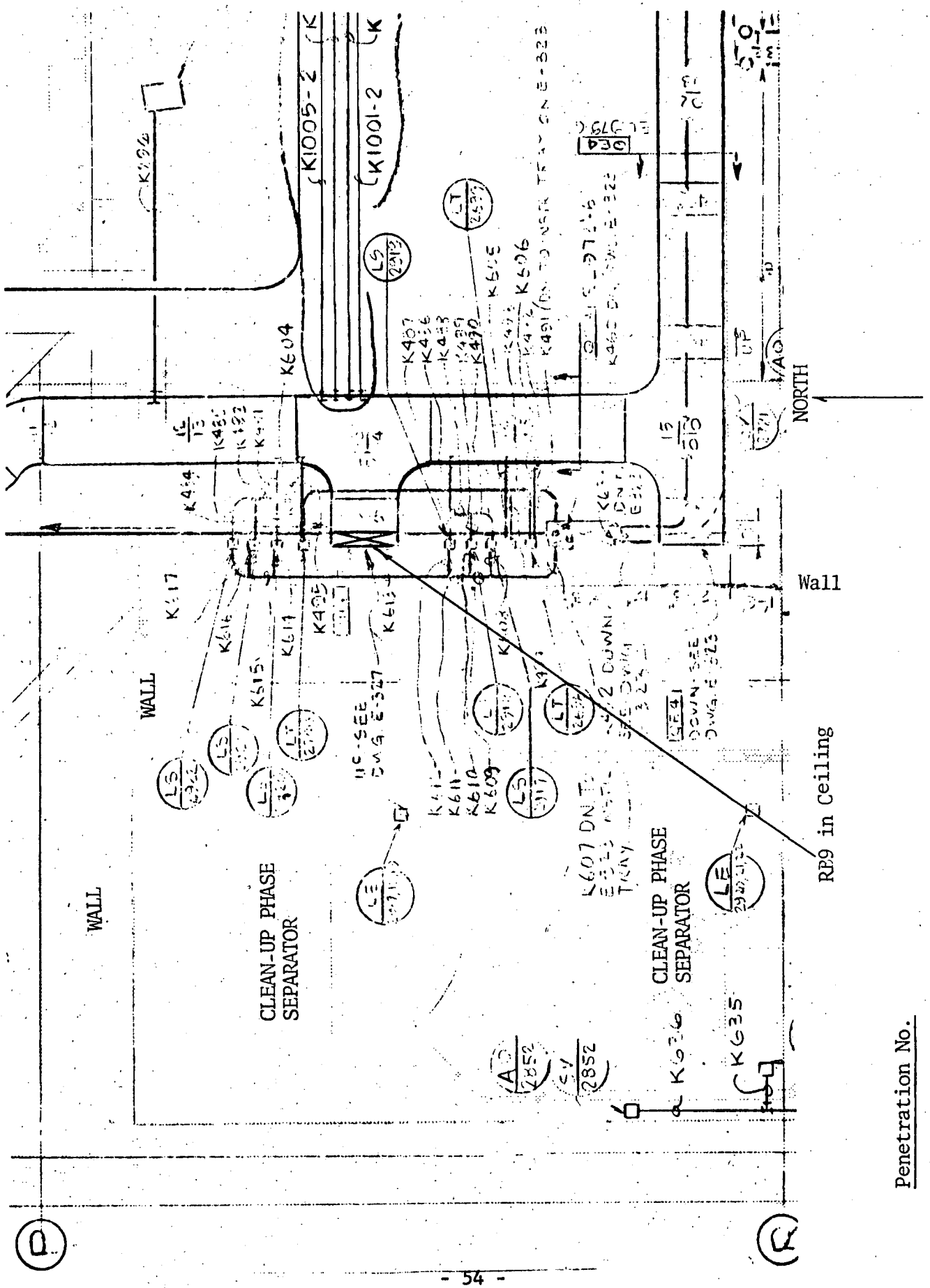
Penetration No.

RB5

REACTOR BUILDING-SOUTH, EL. 962'6"
FLOOR AND CEILING



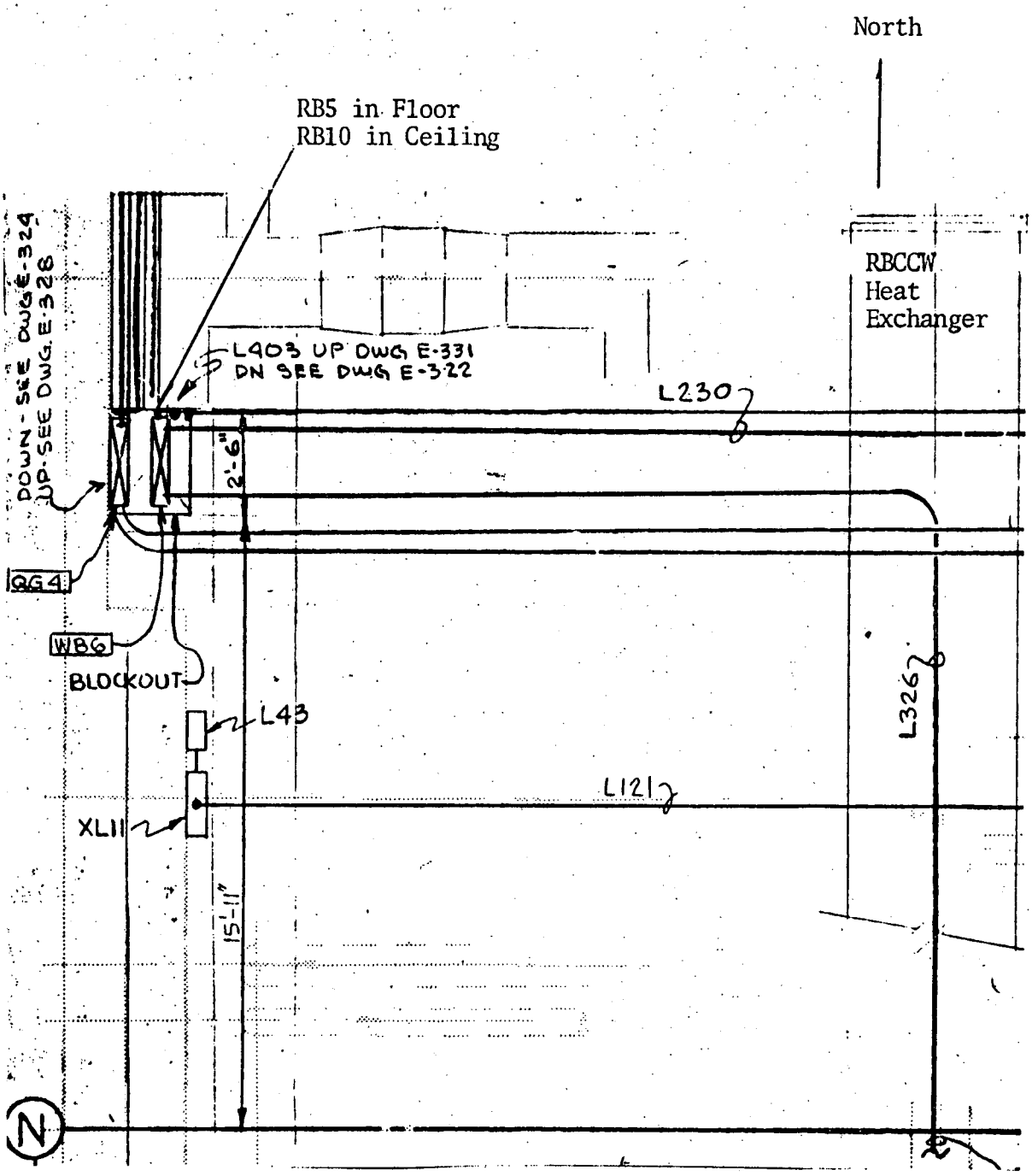
REACTOR BUILDING-SOUTH, EL. 962'6"
FLOOR AND CEILING



Penetration No.

RB9

REACTOR BUILDING-NORTH, EL. 985'6"
FLOOR AND CEILING

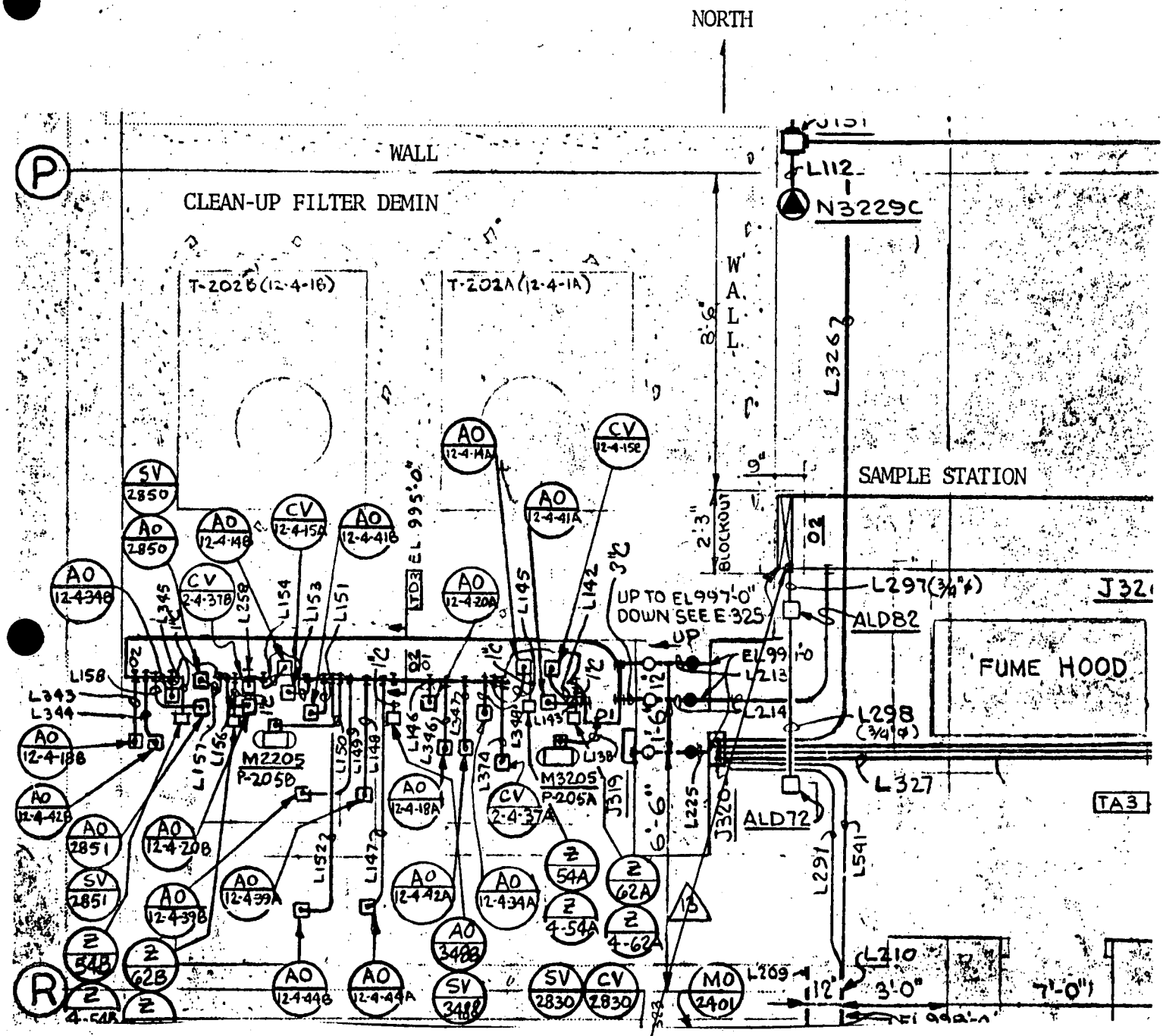


Penetration No.

RB5

RB10

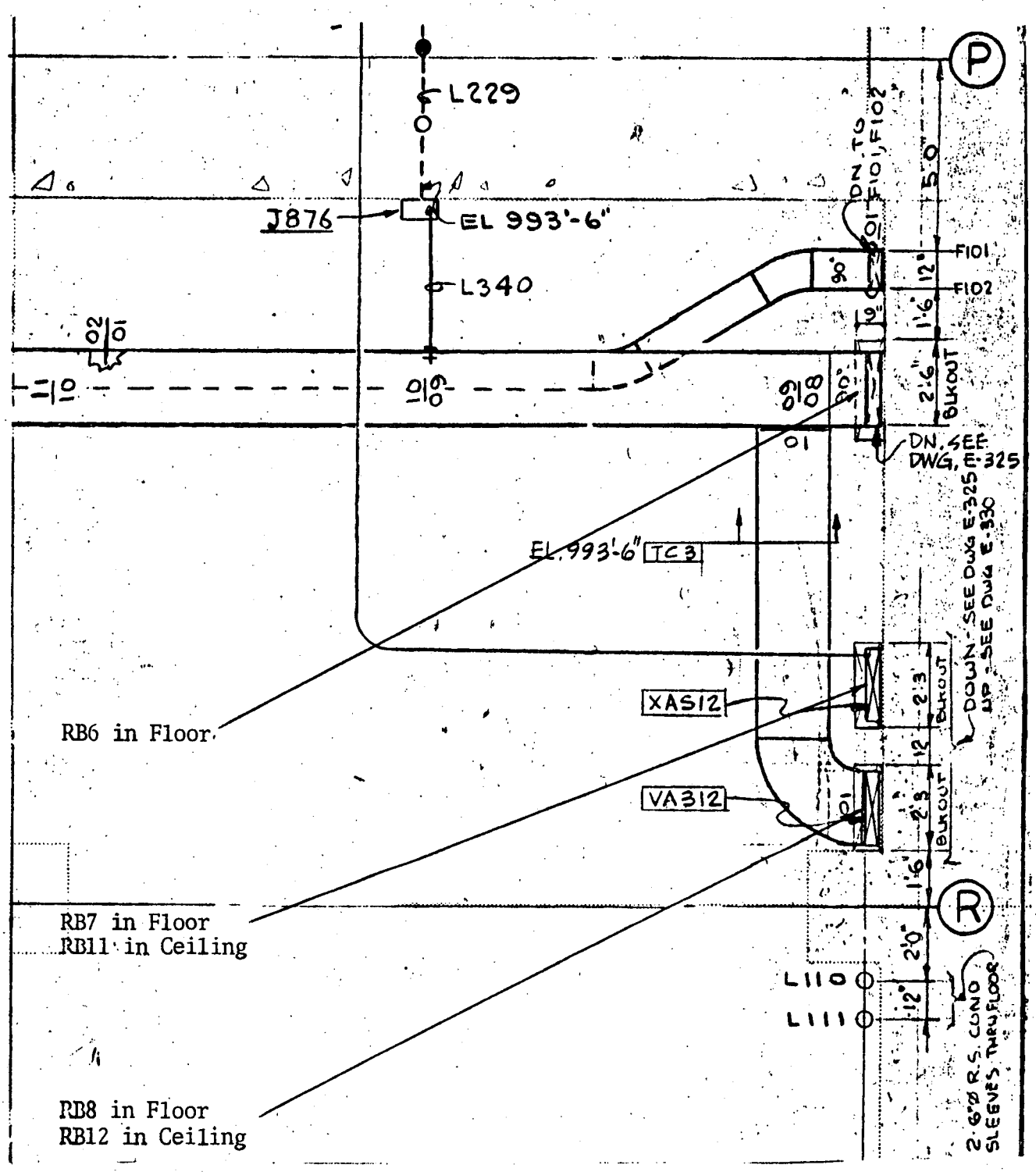
REACTOR BUILDING-SOUTH, EL. 985'6"
FLOOR AND CEILING



Penetration No.

RB9

REACTOR BUILDING-SOUTH, EL. 985'6"
FLOOR AND CEILING

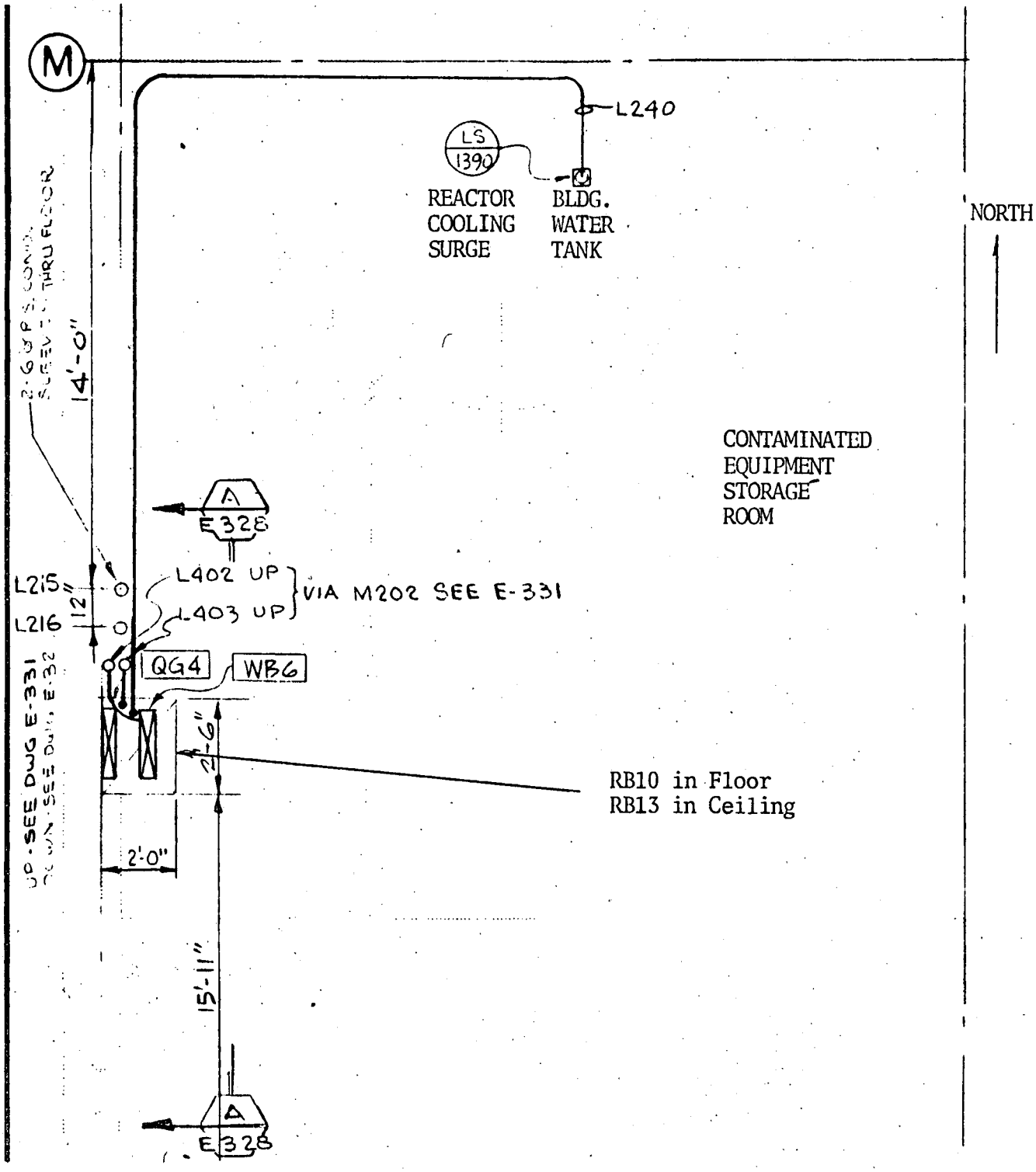


NORTH

East Wall

Penetration #
RB6
RB7
RB8
RB11
RB12

REACTOR BUILDING-NORTH, EL. 1001'2"
FLOOR AND CEILING

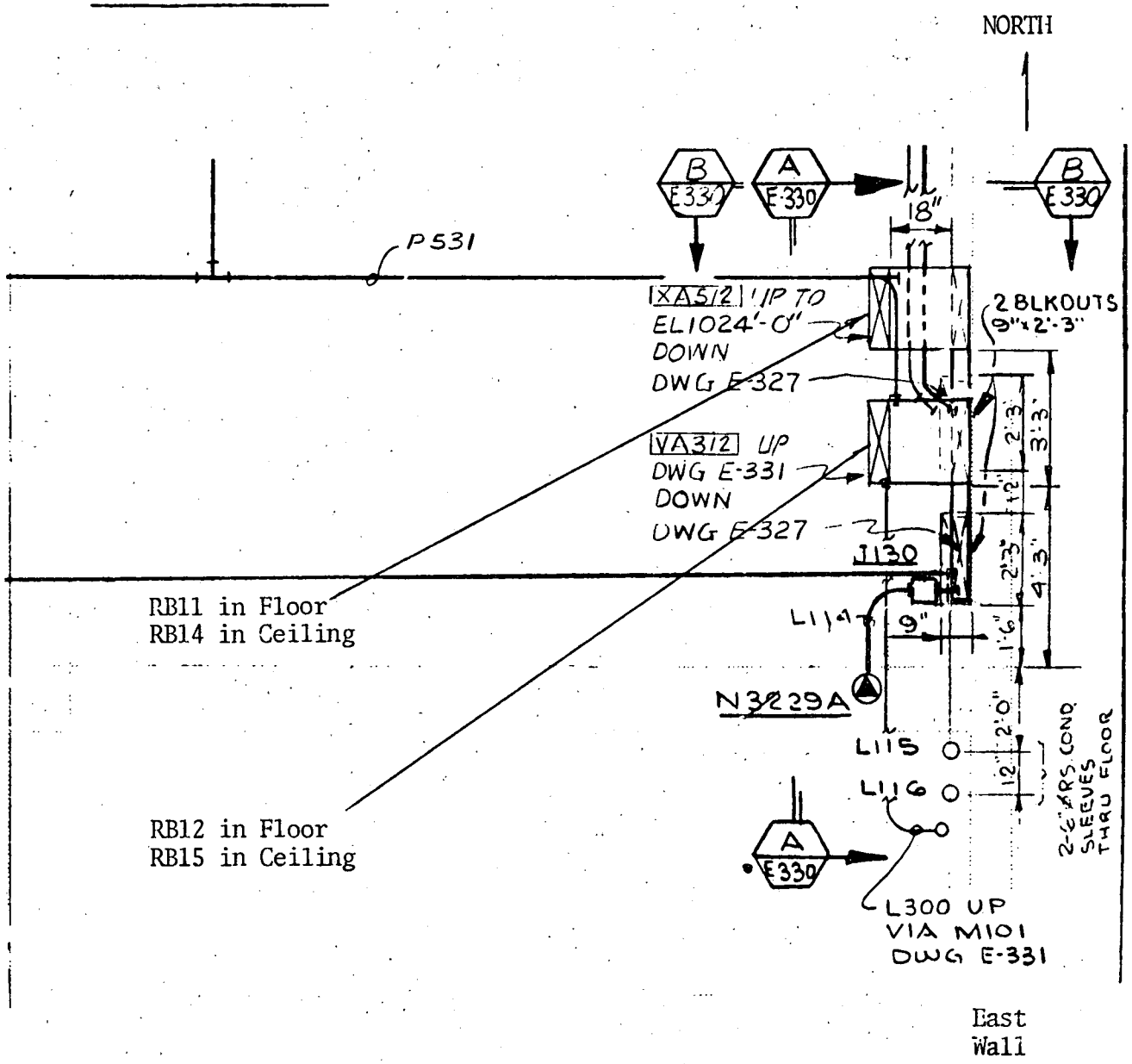


Penetration No.

RB10

RB13

REACTOR BUILDING-SOUTH, EL. 1001'2"
FLOOR AND CEILING



Penetration No.

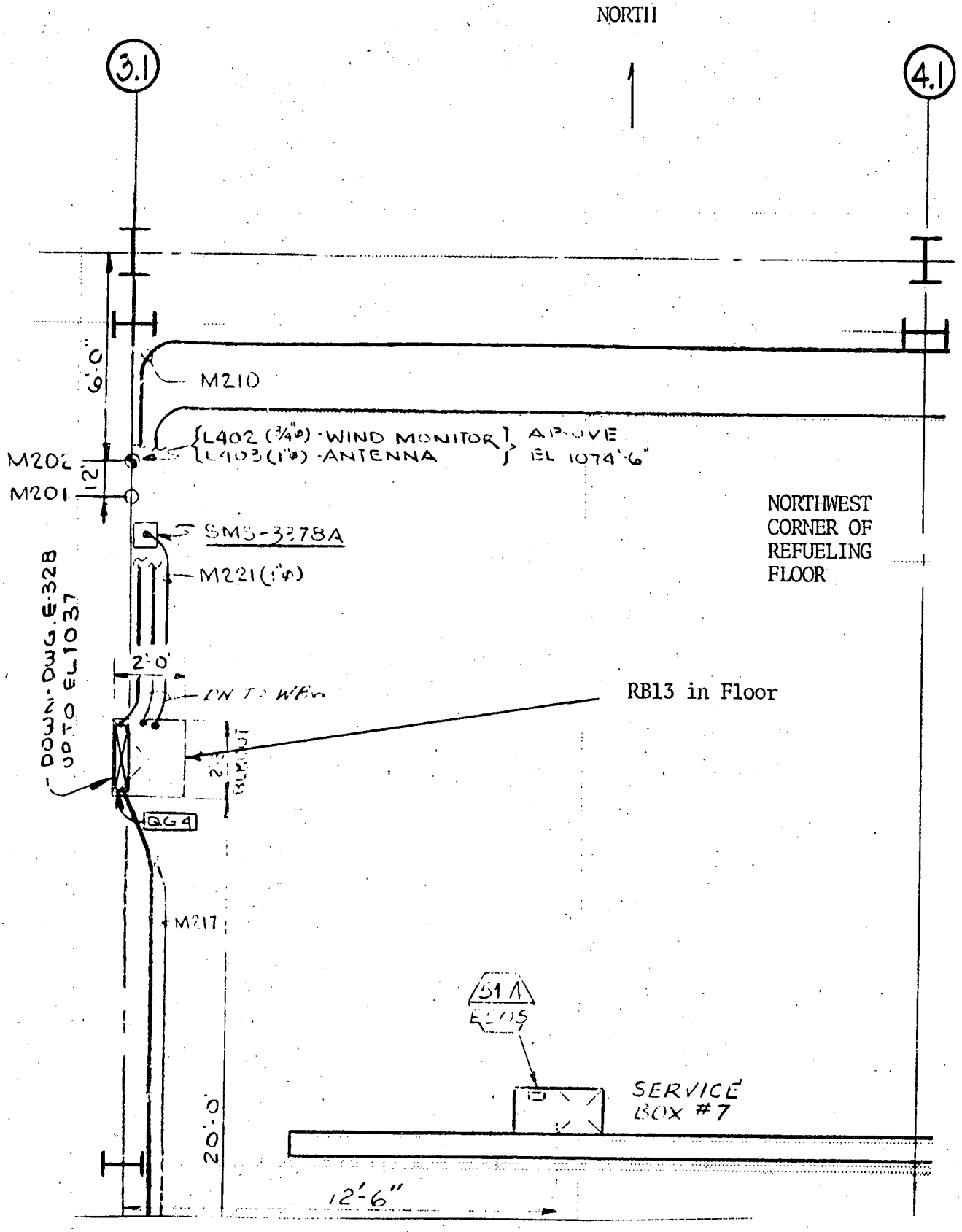
RB11

RB14

RB12

RB15

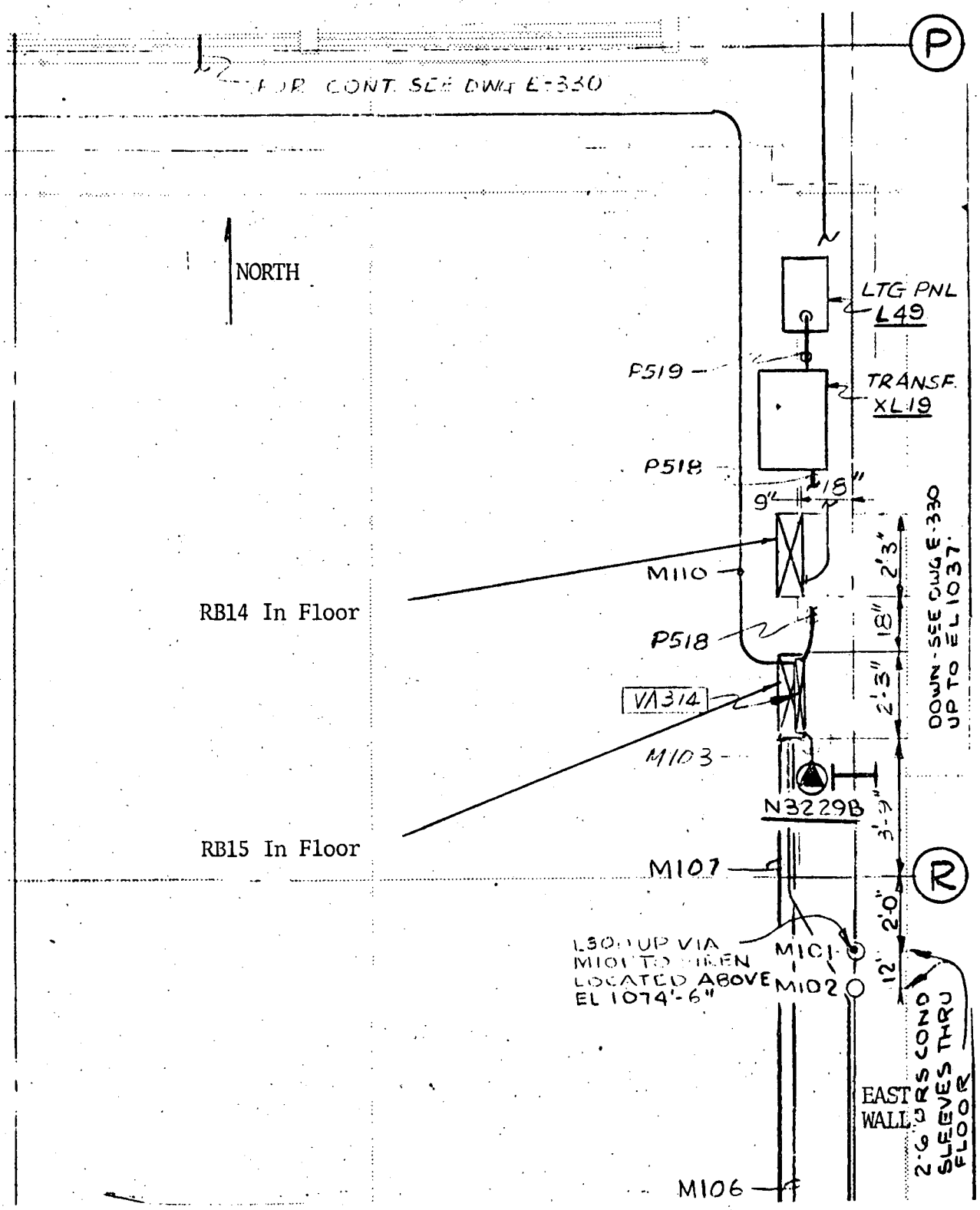
REACTOR BUILDING, EL. 1027'8"
FLOOR



Penetration No.

RB13

REACTOR BUILDING, EL. 1027'8"
FLOOR

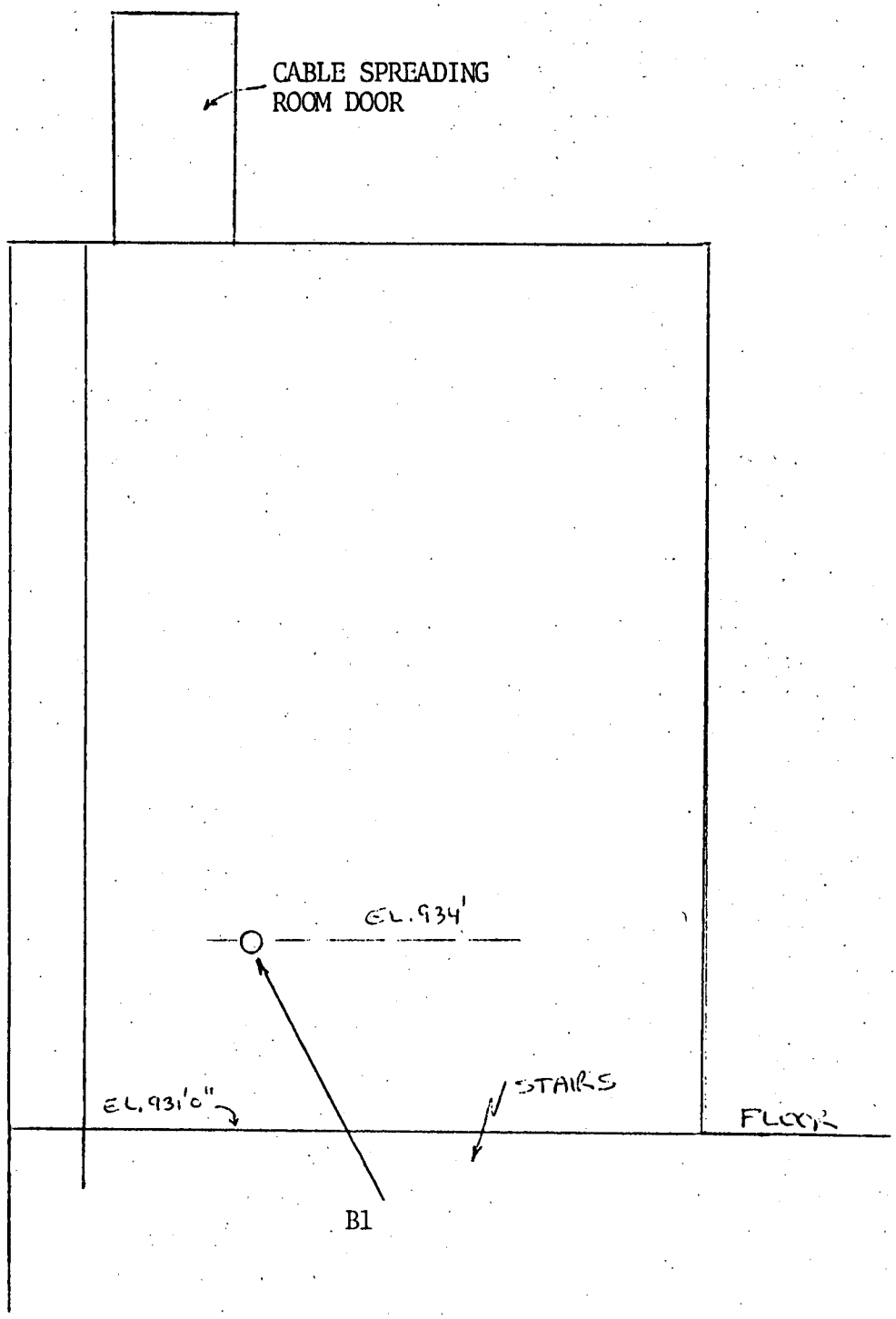


Penetration No.

RB14

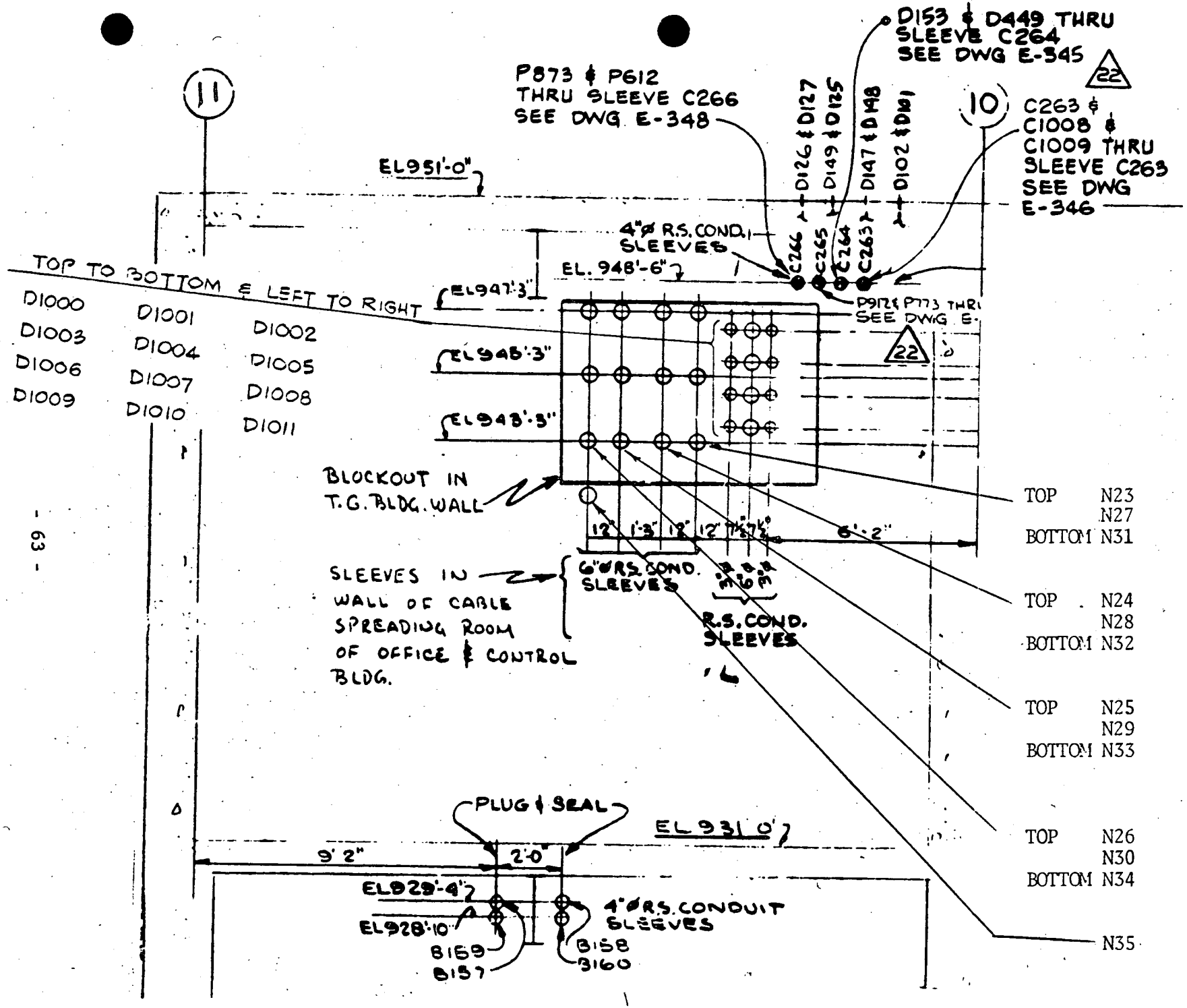
RB15

TURBINE BUILDING, EL. 931'0"-#11-125V BATTERY ROOM WALL



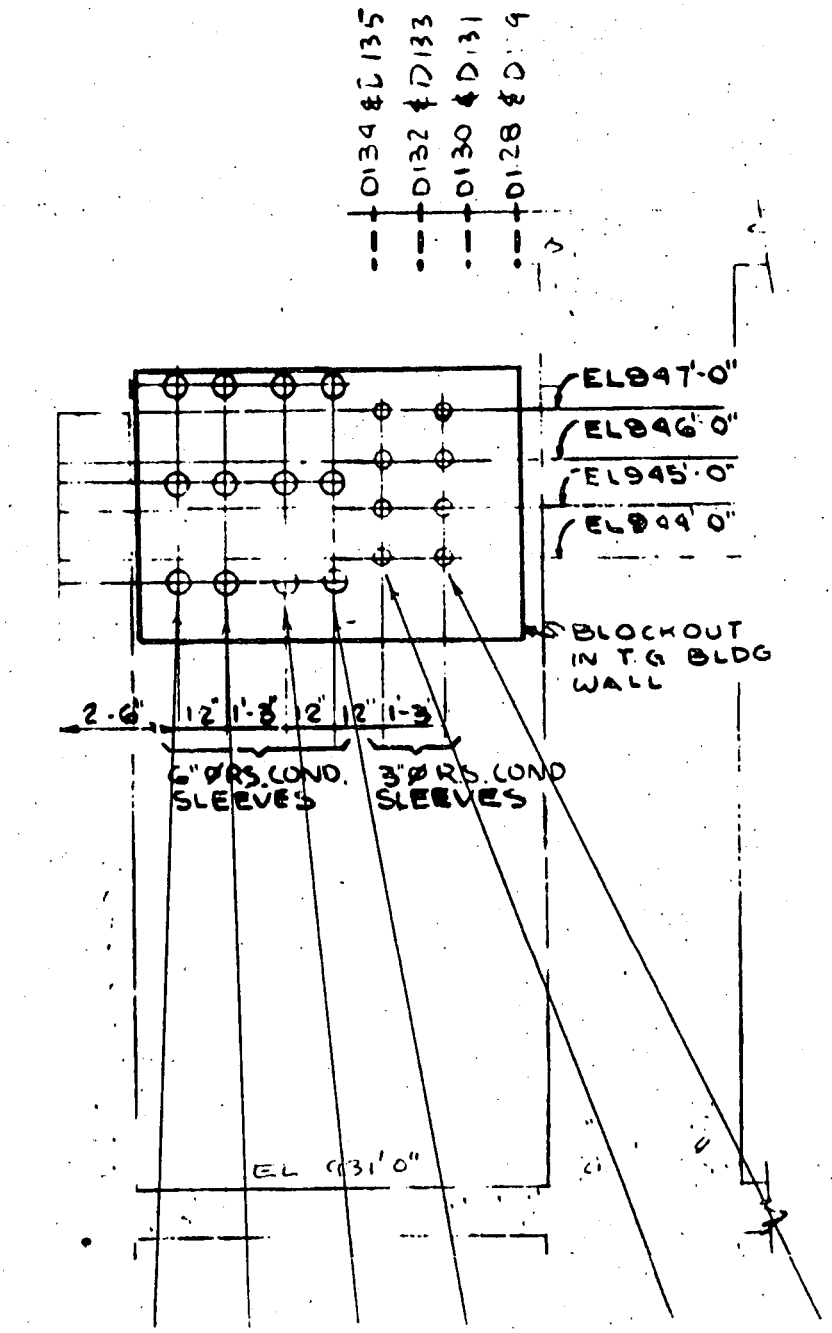
Penetration No.

B1



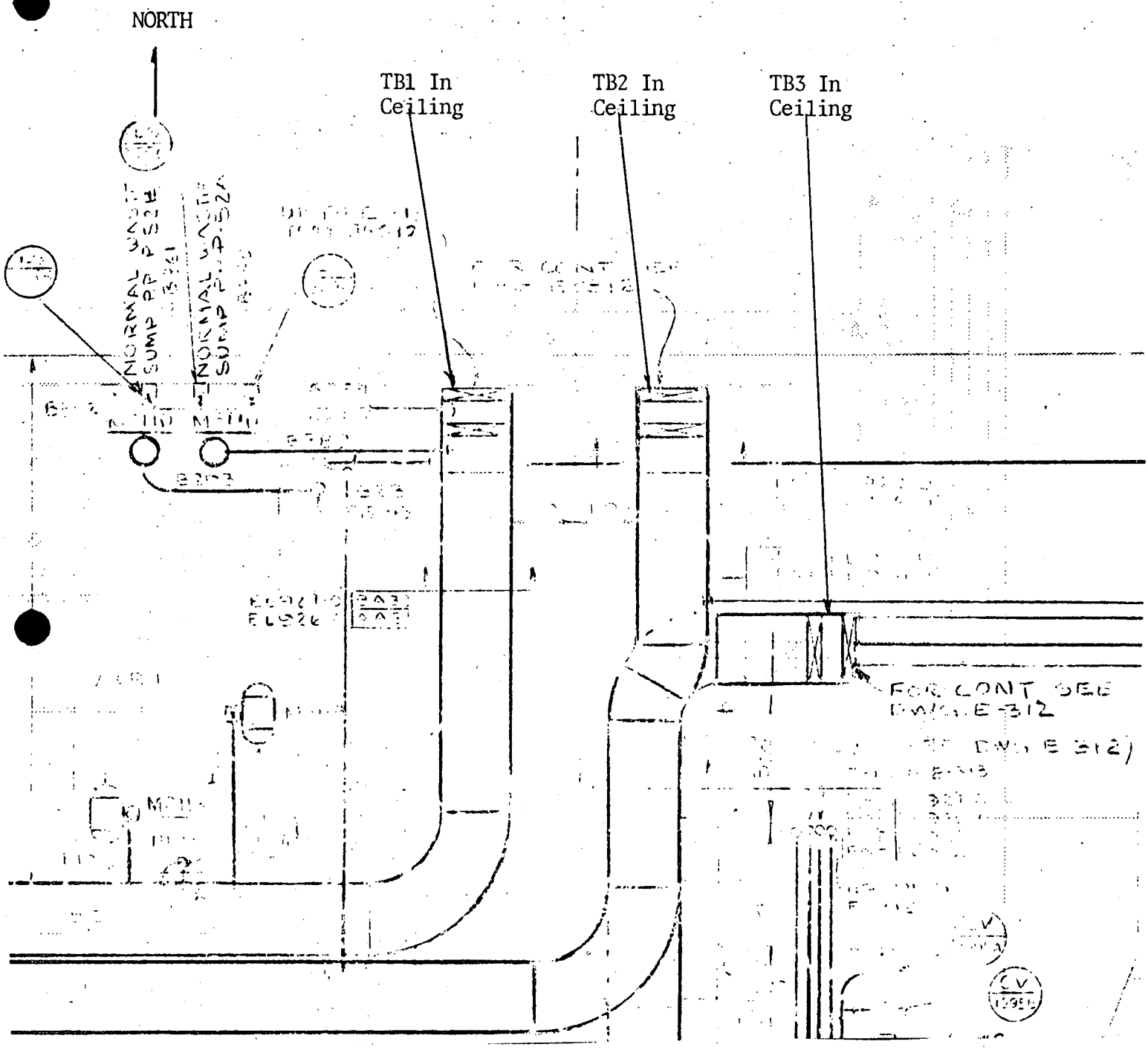
TURBINE BUILDING, CABLE SPREADING ROOM WALL

TURBINE BUILDING, CABLE SPREADING ROOM WALL



TOP	N14	N13	N12	N11	TOP	N4	N3
	N18	N17	N16	N15		N6	N5
BOTTOM	N22	N21	N20	N19		N8	N7
					BOTTOM	N10	N9

TURBINE BUILDING-WEST, EL. 911'0" CEILING



Penetration No.

TB1

TB2

TB3

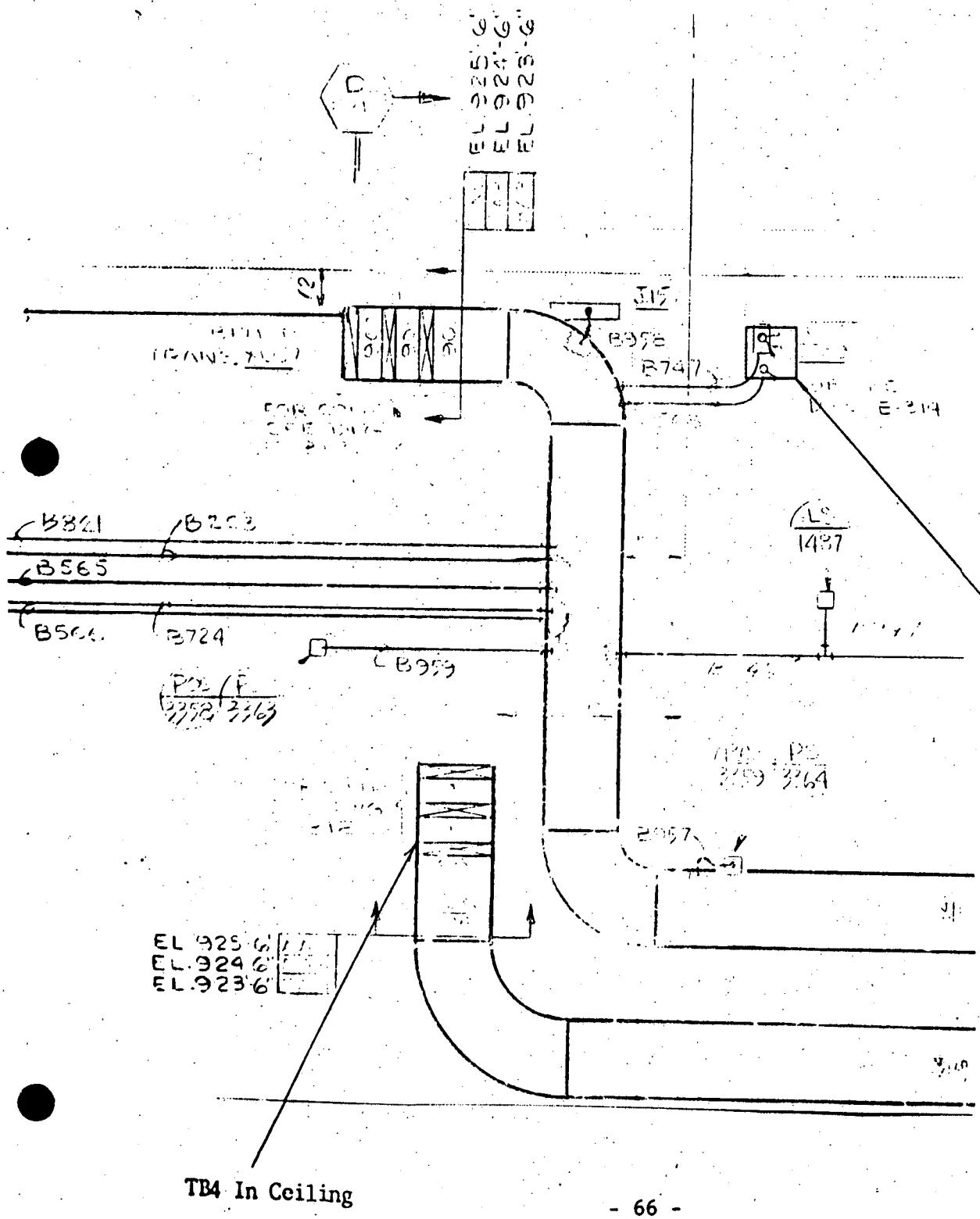
TURBINE BUILDING-EAST, EL. 911'0"
FLOOR AND CEILING

NORTH

Penetration No.

TB4

TB5

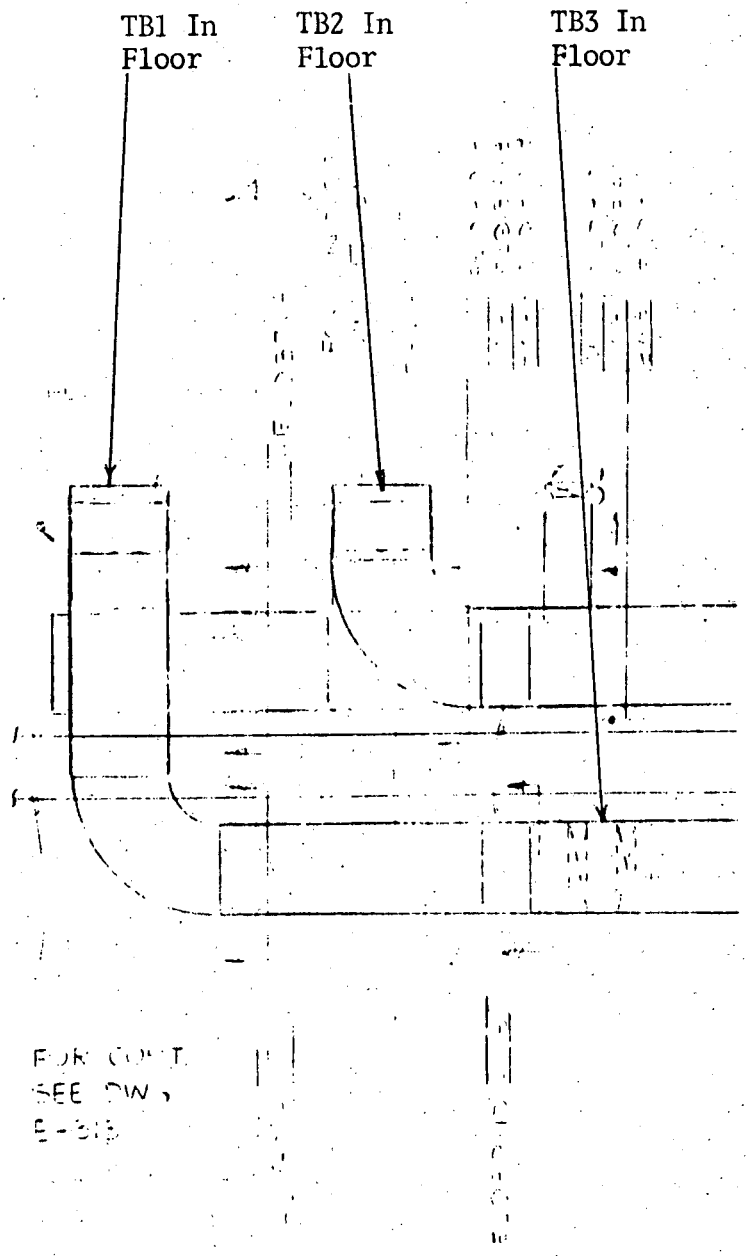


TB5 In Ceiling

TB4 In Ceiling

TURBINE BUILDING-WEST, EL. 931'0"
FLOOR AND CEILING

NORTH

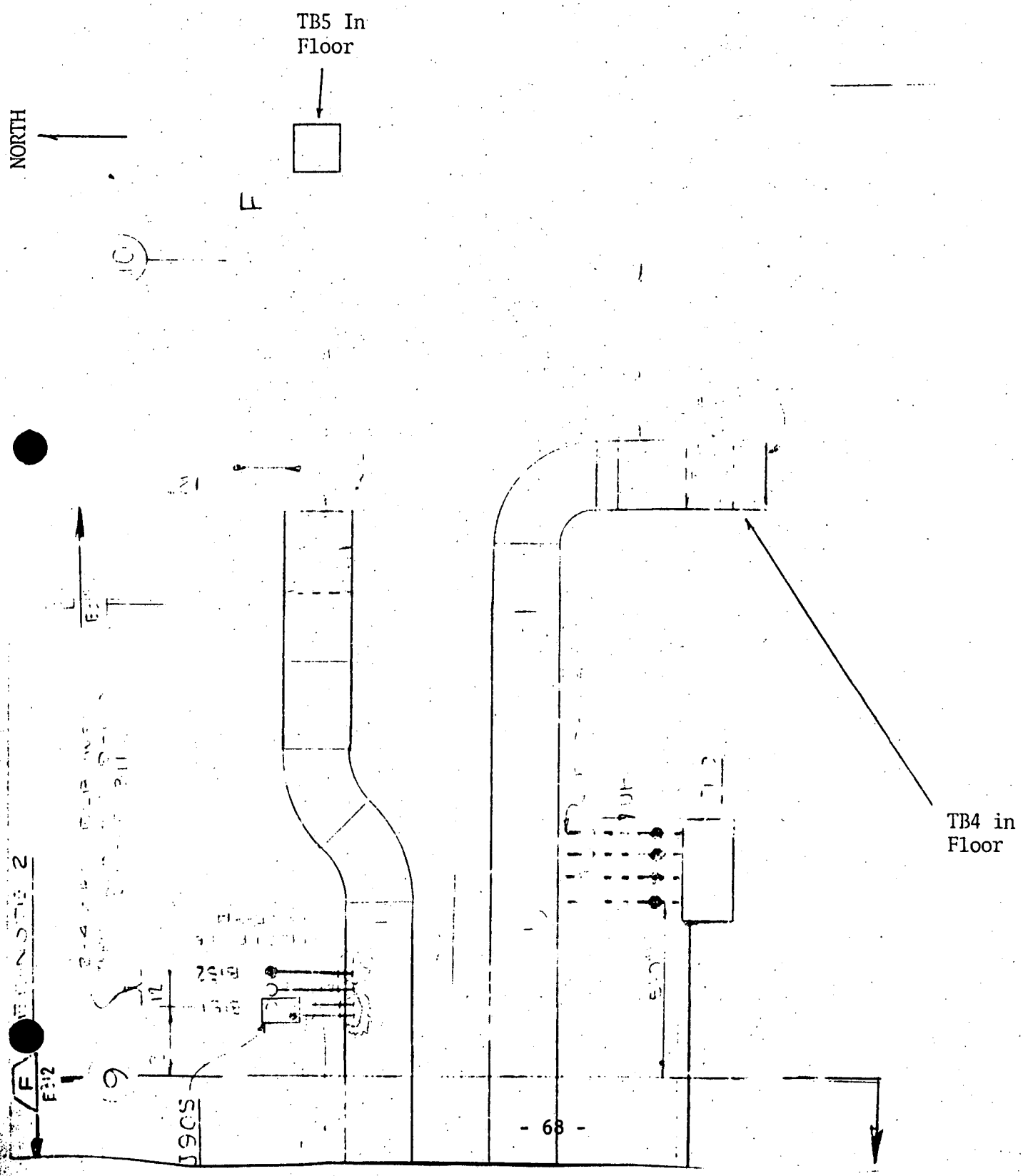


Penetration #

TB1

TB2

TB3

TURBINE BUILDING-EAST, EL. 931'0"
FLOOR AND CEILING

Penetration #
TB4
TB5