
LAYOUT OF THE HYDRAULIC PUMP STATION

B. Bouchet and S. Milner

- A. The entire electrical and electronic control for the actuator and the pump group has been installed in the pump station for the hydraulic actuator. Furthermore there are :
1. A rigid test support for the actuator and the hydrostatic bearings.
 2. A small filling and drawing station for the entire hydraulic system.
 3. A battery of 5 to 6 bottles of nitrogen for filling the accumulators.
 4. A working table and space for maintenance servicing and test.

The drawing FES 304-453-0 gives the lay-out of the pump station.

B. Power distribution

The power distribution boxes are executed according to IHEP standards and the numbers of connection are given on drawing FES 315-803-2. The sizes of the boxes are given arbitrarily. They should preferably be placed along the wall between the pillars K-II. There should be a cable trench under the distribution boxes such as under the CERN racks.

C. Electrical plugs

One plug 3 phase and one plug 1 phase are placed on the wall near the working table. Two plugs 1 phase are placed on pillar K.

D. Control racks

1. P1 and P2 are the motor switches for pump I and pump II.
2. INT. is the rack containing the repeater relays for the interlock system and the interlock signalization.
3. CON. is the control and monitor rack for the actuator and the pump group.
4. RE, reserve
5. Cable termination rack

The racks shall be placed at least 1,5 m from the power distribution boxes and have a cable trench of the dimension of 300 × 200 under them. All control and power cables are laid down in this trench which ends up in the collector basin. From the collector basin the cables are placed on cable trays along the wall in the tube tunnel up to the separation wall of the two cable tunnels. Here they have to pass through a hole of about 300 cm² into the cables tunnel of the CERN tunnel.

E. Water connection

The main tubes ending with a shut-off valve of size 1" and the 1/2" female for the pump group of the hydrostatic bearings will be installed by IHEP. The shut-off valves shall be placed near the entrance of the tube tunnel and the back side of the test support. The connections between the main valves and the pump group will be executed by CERN.

F. Air connection

There will be two air connection 1/4" female near the water connection.

G. Nitrogen bottles

A support for 5 to 6 nitrogen bottles must be placed between pillar K and the collector basin. The filling pressure of these bottles should not be less than 200 kg/cm².

H. Filling and draining station

A small reservoir of 1300 l is placed in the collector basin and is provided by IHEP. It is an ordinary clean oil tank with a man hole and flanges for inlet and outlet of at least 1". There is a visual level indicator and a drain connector. A 2" filling tube from the outside filling place must be installed by IHEP.

I. Test support

The test support shall have the same shiftness and strength as the support in SS 24 and the steel plate covering the concrete block shall be executed as on drawing IHEP 00-01.

J. Double floor

The collector basin shall be covered with a double floor for 400 kg/m² between the pump group and the test bench and behind the test bench. It is not necessary to cover the collector basin between the pump group and the filling station.

K. Cranes

The crane hook shall have a lifting height of at least 3 m and be able to reach the accumulator on the pump station 0.7 m from the wall.

- L. IHEP is requested to supply final drawings with exact positions and dimensions of the tubing, the nitrogen battery, tube trenches, double floor, draining reservoir, eventually walls etc. Furthermore a detailed engineering drawing for the complete tube trench from the pump station to the ring with indications of angles levels etc. is urgently needed in order to execute the final tubes.

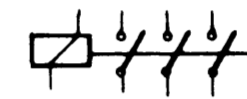
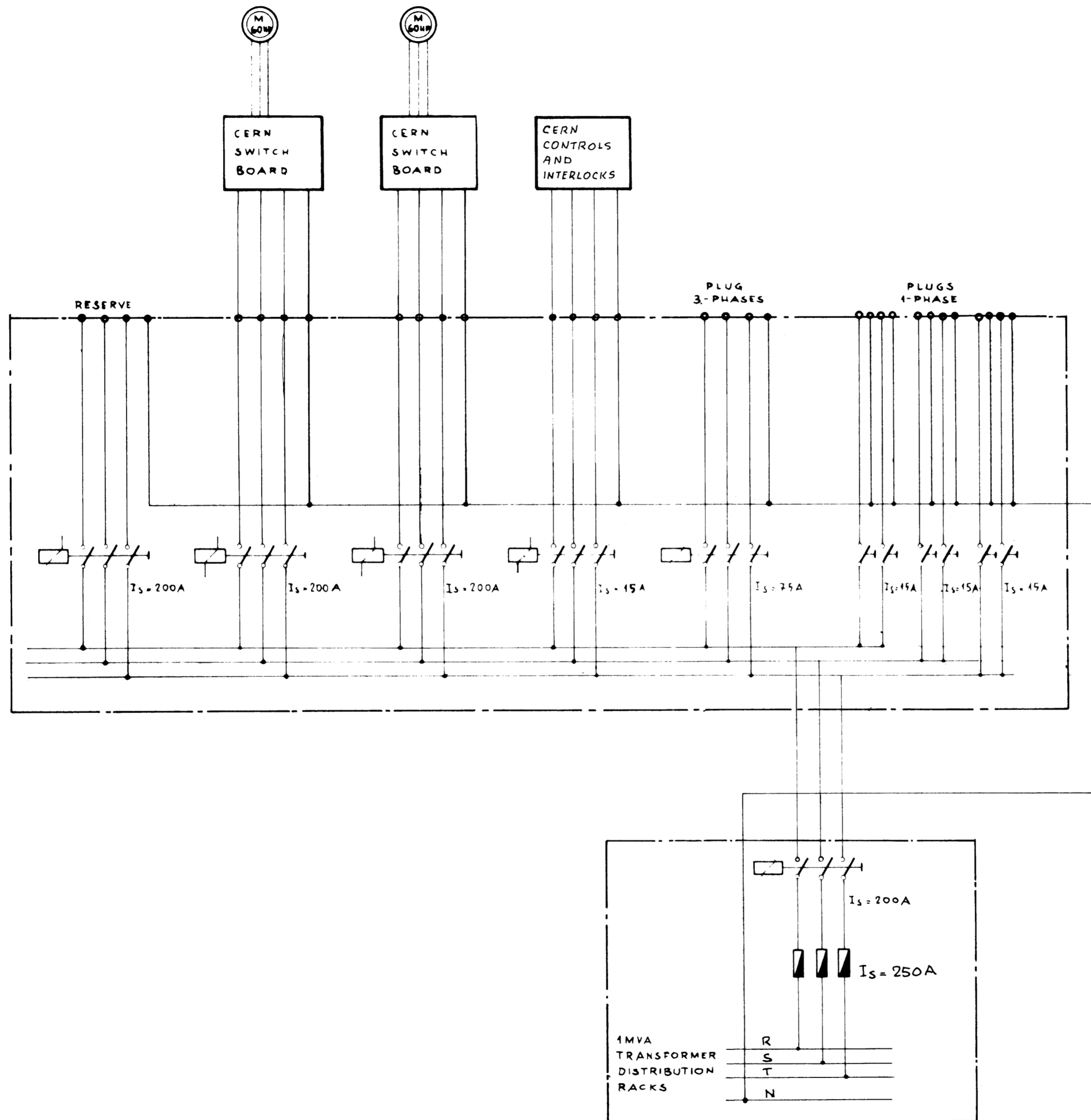
PUMP STATION FOR HYDRAULIC POWER SUPPLY

EJECTION EQUIPMENT CERN

POWER CONNECTION CABLES IHEP

POWER DISTRIBUTION BOXES IHEP

SUB STATION



REMOTE BREAKER 3 PHASES



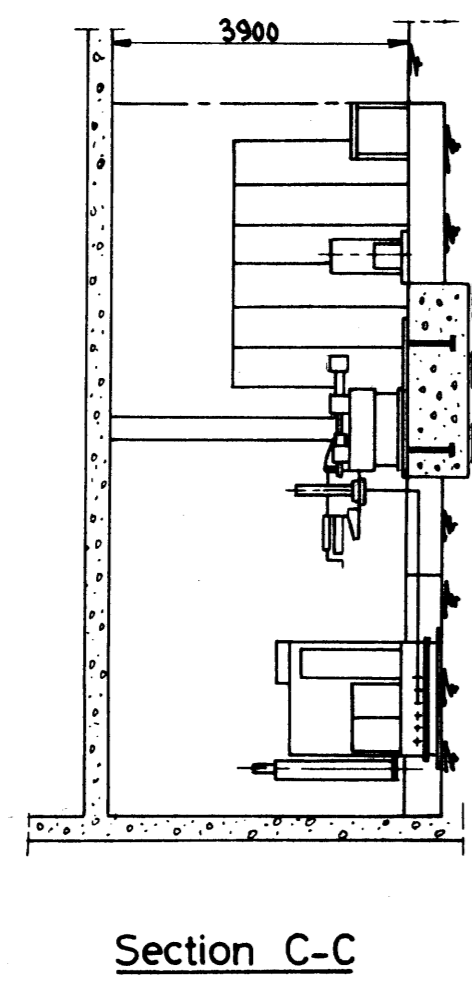
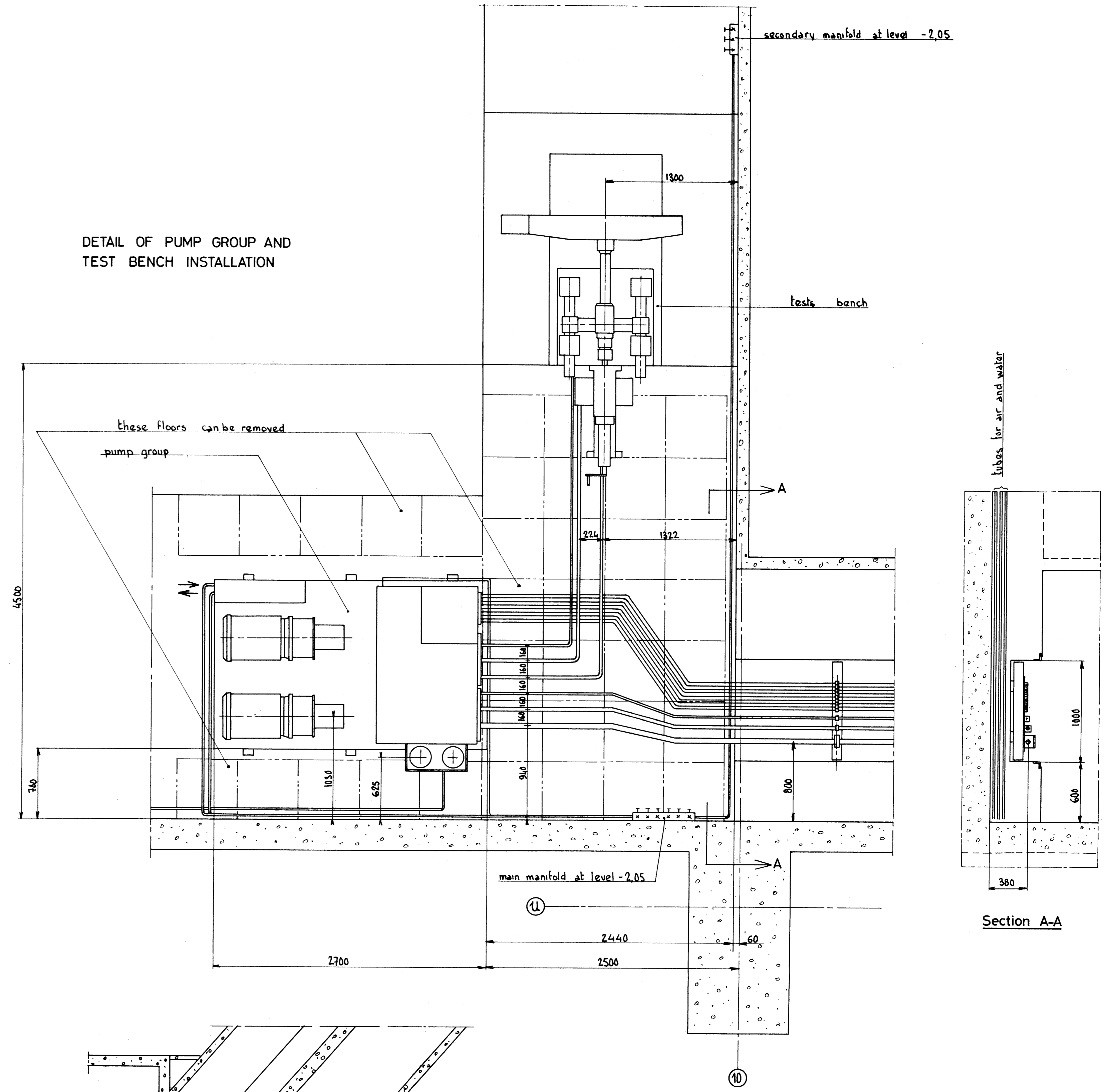
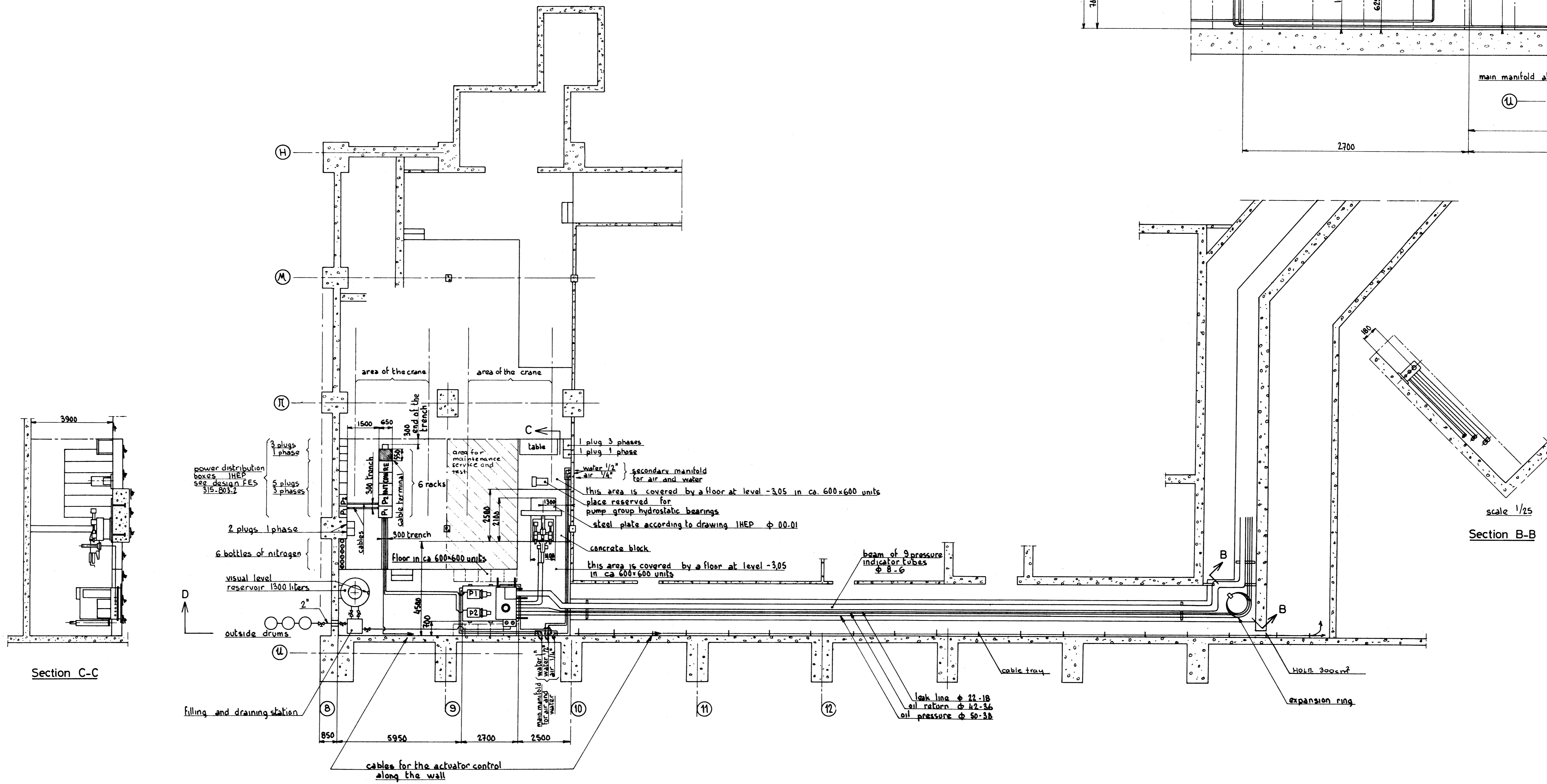
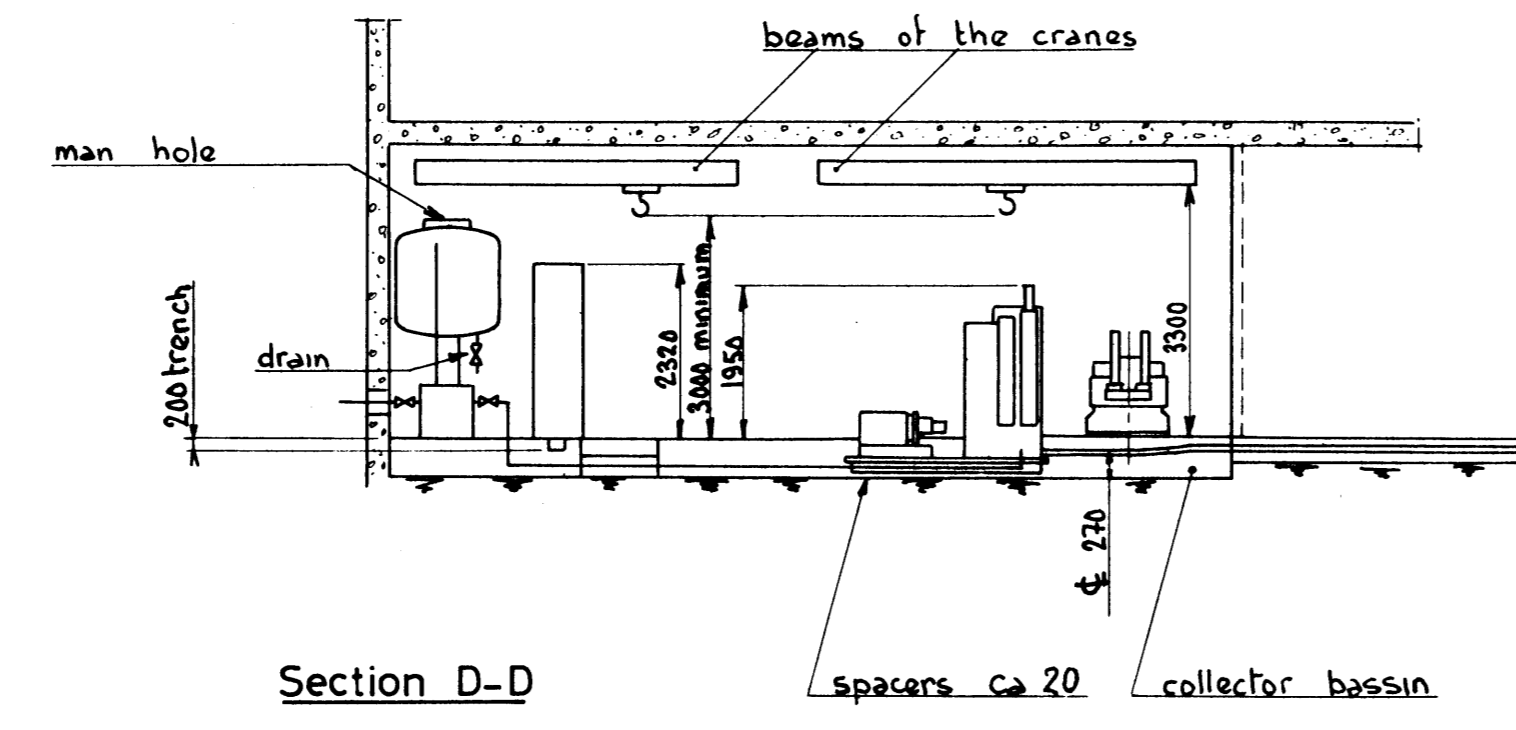
MANUAL BREAKER 3 PHASES



MANUAL BREAKER 1 PHASE

TERMAL- AND SHORT CIRCUIT TRIP

Nombre de pièces		Désignation		Pos.	Matière	Observations
III	II	I	Mod	Date	Nom	Tolérances générales
			A			de à
			B			de à
			C			de à
Ensemble				S. Ensemble		Dessiné 21.8.69 <i>U. Ranga</i>
Fast ejection, Serpukhov A				Echelle		Contrôlé Vu
MAINS DISTRIBUTION PUMP STATION				Remplace		Remplacé par
ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE				FES		315-803-2
CERN EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH				1211 GENEVE 23		



Section B-B
scale 1/25

Nombre de pièces		Désignation		Pos.	Matériau	Observations
III	II	I	Mod.	Date	Nom	
					Tolérances générales	
	A				de A	
	B				de A	
	C				de A	
Ensemble		S. Ensemble				Dessiné 25.4.11 135
A PUMP GROUP						Contrôle 25.4.11 65
PUMP STATION						Échelle 1/100
INSTALLATION at SERPUKHOV						Remplacé
						Remplacé par
						Echelle 1/25
ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE CERN EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH 1211 GENEVE 23						
Dossier N°				FES 304-453-0		