

RUTHERFORD LABORATORY BUILDING COMMITTEE.

Heavy Duty Laboratory - Cooling Water Installation.

1. When approval was given for the Heavy Duty Laboratory to be constructed, it was recognised that additional services to meet user requirements would have to be determined and dealt with separately to avoid interference with the package contract for the Building.

2. The special cooling water services necessary for the work to be carried out in this Laboratory has now been determined, and completion of the installation is required by the end of 1962.

The method of implementing the requirements has been discussed and agreed in principle with S.W.O.

3. The service required is a demineralised cooling water system to dissipate 1 M.W. of heat from experimental equipment.

The water will be circulated through flow and return mains in the laboratory at a rate of 120 g.p.m. with a pressure of 150 p.s.i. available to drive the required quantities through the various experimental rigs.

The necessary pumps, together with associated motors, starters, ion exchange equipment and instrumentation will be housed in a plant room, with an air blast radiator type cooler mounted on the roof of the plant room.

The system is shown diagrammatically at fig. 1.

The system is capable of being extended to meet possible future demands, should these arise, by extension of the plant room and the addition of another cooler, pumps etc.

4. The plant room will be approximately 25 ft. x 16 ft. x 12 ft. high, and will be sited at the south west corner of the laboratory as indicated at Fig. 2.

This site has been selected because it is remote from the office block and a suitable access road is already intended.

In providing the cooler, particular attention will be paid to selecting one with an acceptable noise level. It has not been conclusively determined that the sum quoted in the estimate will be adequate to cover any special arrangements to meet this requirement.

5. An "order of cost" estimate which lists the work to be done has been prepared by S.W.O. and is given at Appendix A.

The estimated cost is:

Cost and contingency:	£13,000.
Fees 15% say:	£ 2,000.
Total:	<u>£15,000</u>

It is expected that the whole of this expenditure will occur in the financial year 1962/63.

6. Approval is sought for the provision of a cooling water system for the Heavy Duty Laboratory at a total cost not exceeding £15,000. Reference back will be made should it not be necessary in view of the position stated in para. 4.

R. N. WALKER.

G. E. SIMMONDS.

31st May, 1962.

N.I.R.N.S. HEAVY DUTY LABORATORY.

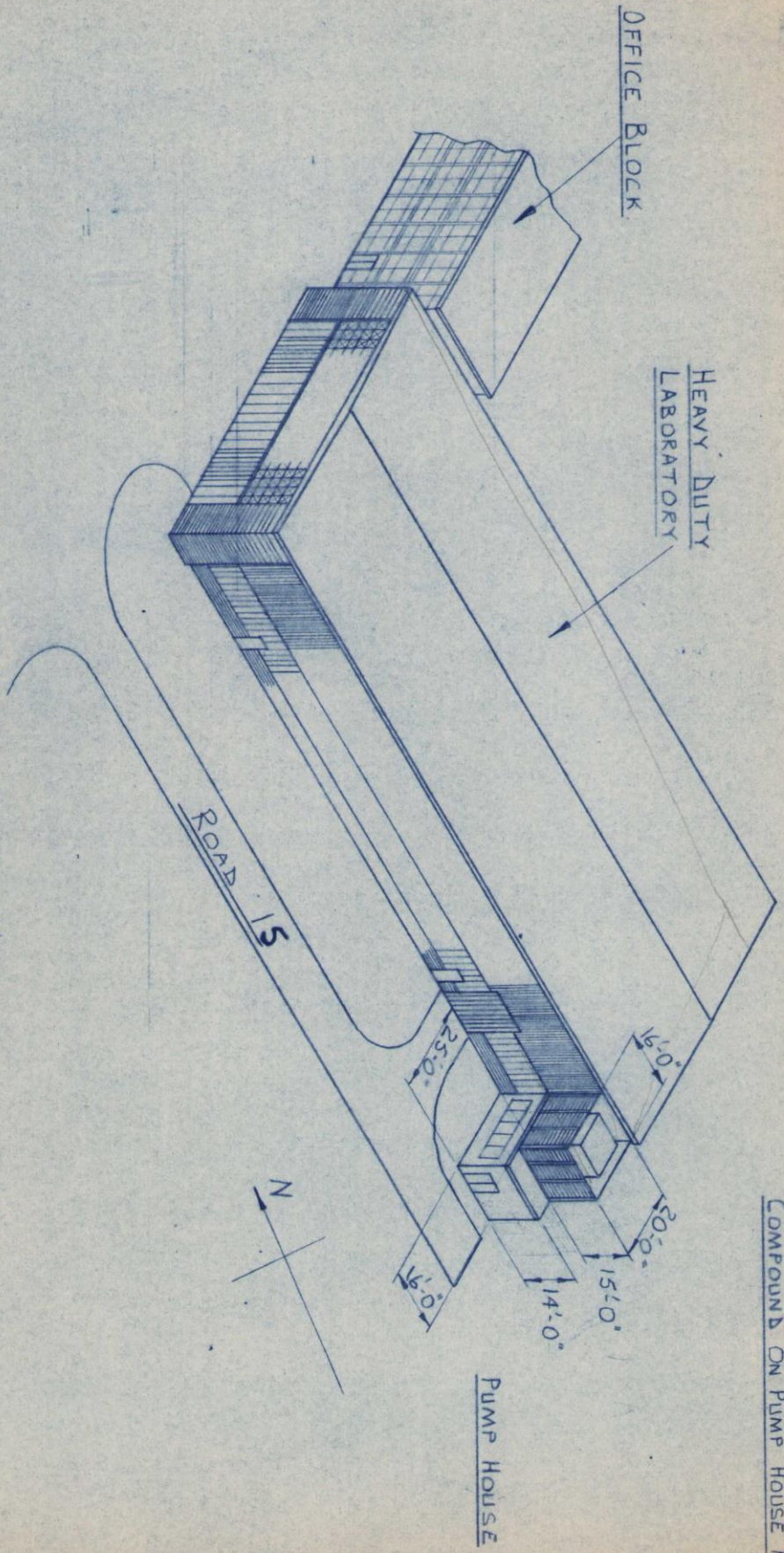
1 MW Cooling Water System.

Job No. 6676.

Building	£
12' x 25' x 16' £5.	2,000
2 Lined Steel Tanks.	1,500
Pumps and Motors.	500
Cooler.	4,300 ^{to} 10,000
Pipework.	2,000
Demin. Unit.	200
Electricies.	800
Allowance.	1,700
	<u>£13,000</u>

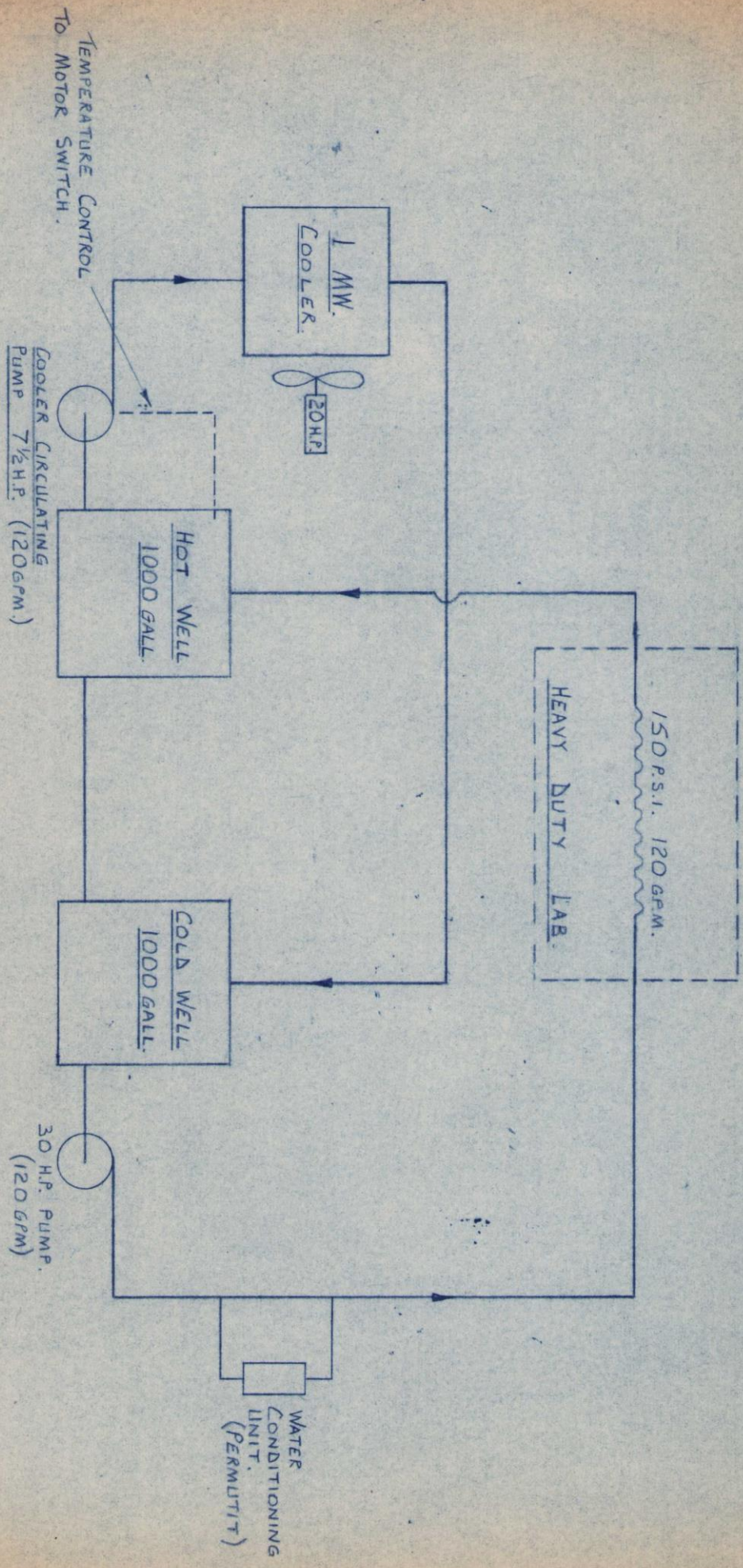
BLD. No. R 25
SCALE: - 1/500
MB

SITING OF PUMP HOUSE & HEAT EXCHANGERS FOR THE HEAVY DUTY LAB.
COOLING WATER INSTALLATION.



HEAT EXCHANGER IN LOUVERED
COMPOUND ON PUMP HOUSE ROOF

31-5-62



FLOW CHART FOR HEAVY DUTY
LABORATORY COOLING SYSTEM

1/3. 31-5-62