

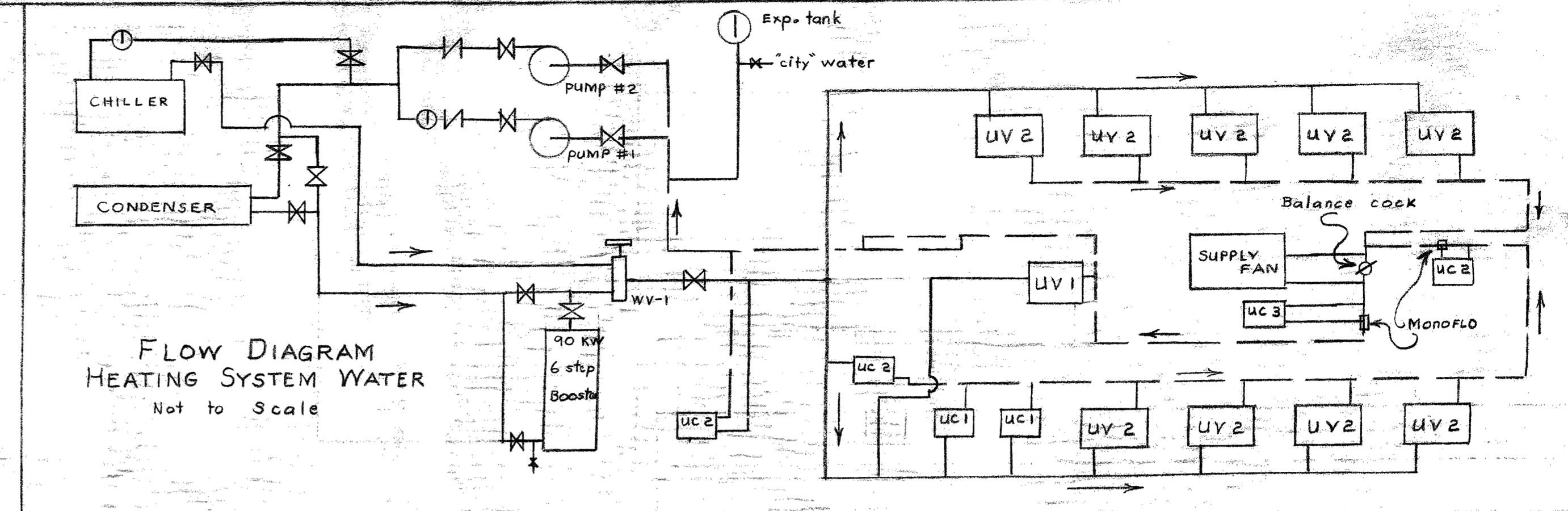
EQUIPMENT SCHEDULE

- Unit Ventilator #1: 1000 cfm Hermal-Cool III bottom OSA intake.
- Unit Ventilator #2: 1500 cfm Hermal-Cool III twin wall OSA intakes.
- Unit Conditioner #1: 400 cfm Nelsenair upright cabinet with damper for 100% OSA.
- Unit Conditioner #2: 400 cfm Nelsenair upright cabinet (100% RA).
- Unit Conditioner #3: 400 cfm Nelsenair horizontal for duct connection.

- Supply Fan Unit: 8000 cfm at 0.4 ESP 2 HP, twin 18" DW fans, coil cool 8000 cfm from 80°DB to 60°DB with 35 GPM of 55° EWT. H₂O p.d. net over 8.0 ft. 32 sq. ft. filter face area. Equip unit with face and by-pass dampers and OSA/RA dampers.

- Exhaust Fan #1: 8200 cfm at 3/8 ESP 2 HP, twin 16" DW fans. Line cabinet with acoustic liner.
- Exhaust Fan #2: 8200 cfm at 3/8 ESP 2 HP, twin 16" DW fans. Line cabinet with acoustic liner.
- Exhaust Fan #3: 600 cfm at 1/4 ESP 9" SW belted vent set 1/6 HP with HOA motor protective switch and relay or with magnetic starter and HOA in cover. UED, OW.
- Exhaust Fan #4: Wall mount propeller fan with gravity back draft dampers 1000 cfm at 1/8" SP.

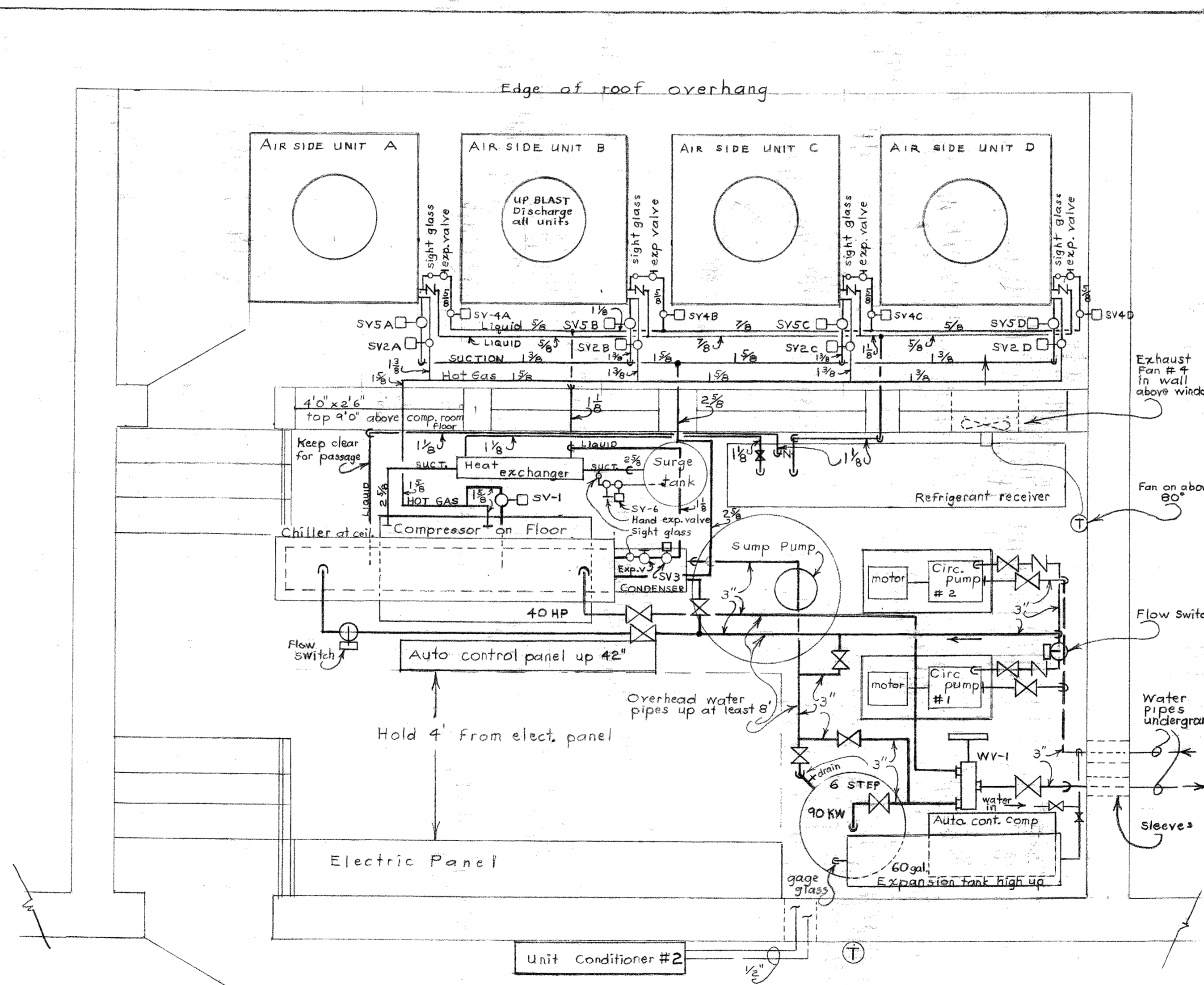
- Compressor: 30 tons at 40° suction and 105° condensing with hot gas muffler.
- Chiller: 30 tons at 40° suction and 118 GPM of 45° LWT and 5.0 ft. water p.d.
- Condenser: 500,000 BTU at 105° refrigerant temperature, 118 GPM of 95° LWT 0.0005 fouling factor, 10.0 ft. p.d.
- Air Side Units: 4 identical units for heat pump duty. Up blast discharge. Each unit 1 HP motor, 6500 cfm, condense 125,000 BTU/hr with 90° air and 120° Ref., evaporate 45,000 BTU/hr with 20° air and 10° Ref.
- Circulating Pumps: B and G #1531 120 GPM at 53 ft. (Two identical units required.)
- Receiver: 350 lbs. refrigerant storage capacity.
- Surge Tank: 175 lbs. liquid storage capacity.
- Heat Exchanger: Nominal 30 ton.
- Booster Heater: 120 gallon 90 KW in 6 units of 15 KW 3 phase.



Thermometers: each side of chiller
each side of condenser
ahead of booster
after pumps
each side of supply fan

Pressure Gauges: each side of each pump
each side of supply fan

HEAT PUMP CONTROL SCHEDULE				
ITEM	CYCLE			REMARKS
	DEFROST	HEATING	COOLING	
SV-1	CLOSED	OPEN	CLOSED	
SV-2A	ONE OPEN	CLOSED	OPEN	DEFROST ONE AIR-SIDE UNIT AT A TIME. ONE DEFROST EVERY 22 1/2 MINUTES. TOTAL CYCLE 1 1/2 HRS. PHASE SV-2, SV-4, SV-5 and FAN AS REQ'D
SV-2B		"	"	
SV-2C		"	"	
SV-2D		"	"	
SV-3	CLOSED	CLOSED	OPEN	OPEN ONLY WHEN ROOMS 12 & 15 REQUIRE COOLING and room B DOES NOT REQUIRE HEAT.
SV-4A	ONE CLOSED	OPEN	CLOSED	OPEN ONLY IF SPACE CHANGE-OVER START DEMANDS HEAT
SV-4B		"	"	
SV-4C		"	"	
SV-4D		"	"	
SV-5A	Same as SV-4	OPEN	CLOSED	
SV-5B		"	"	
SV-5C		"	"	
SV-5D		"	"	
SV-6	OPEN	OPEN	OPEN	Open only when COMPRESSOR OPERATES
AIR SIDE FAN A	ONE FAN OFF (Same as SV-4)	ON	ON	
AIR SIDE FAN B		"	"	
AIR SIDE FAN C		"	"	
AIR SIDE FAN D		"	"	
COMPRESSOR	ON	ON as req'd	ON as req'd	COMPRESSOR STARTS WHEN SV-3 or SV-4 OPENS and LOW PRESSURE SWITCH CLOSSES
PUMP #1	ON	ON	ON	ON CONTINUOUSLY DURING WARMUP and DAY
PUMP #2	ON if pump #1 is OFF	ON if pump #1 is OFF	ON if pump #1 is OFF	
WV-1	OPEN TO HTG	OPEN TO HTG	OPEN TO CLG	
BOOSTER HEATER	ON as req'd	ON as req'd	OFF	see spec for LOCKOUT SCHEDULE
CHANGE OVER				Allow 3 minute delay after water change over before changing space controls



Install full line size double port
Liquid indicate ahead of each exp. valve
Install full capacity replaceable cartridge
drier with shut off valves and
valved by pass

<p>OMER T. JACOBSON CONSULTING MECHANICAL ENGINEER 1305 S.E. BELMONT PORTLAND 14, OREGON</p>	<p>REGISTERED PROFESSIONAL ENGINEER 3129 OMER T. JACOBSON MAY 21, 1958 OREGON</p>	<p>REGISTERED ARCHITECT James C. Gardiner Portland, Oregon STATE OF OREGON</p>	<p>JAMES C. GARDINER A.I.A. ARCHITECT 3158 S.W. 87th AVENUE - PORTLAND, OREGON - CY 2-3727.</p> <p>ADDITION TO VOSE ELEMENTARY SCHOOL SCHOOL DIST. NO. 48 WASHINGTON COUNTY, OREGON</p> <p>DATE 1-18-62 FILE NO. 21-691</p> <p>TITLE OF SHEET DETAILS</p> <p>SHEET NUMBER M-30 of 3</p>
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