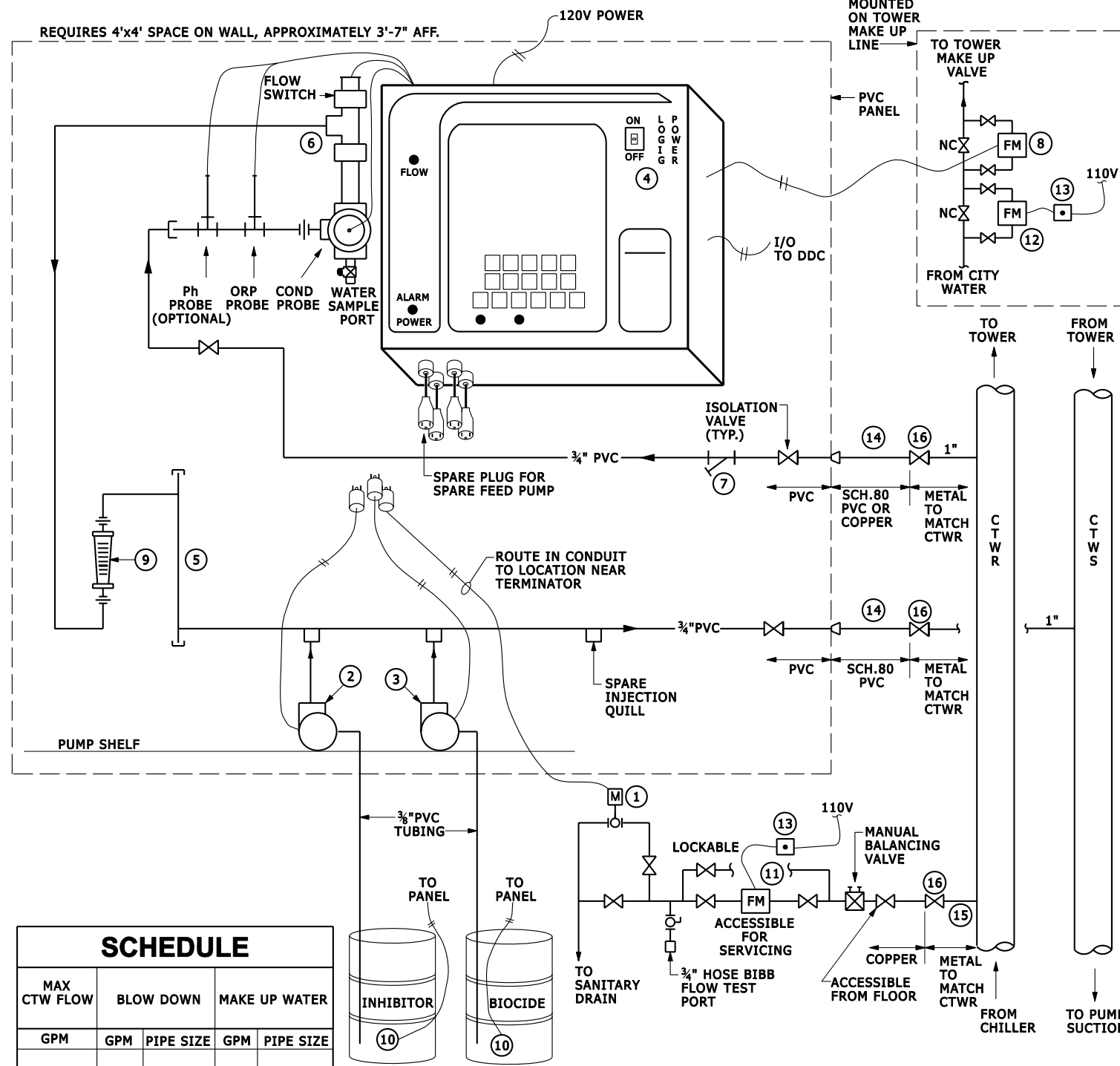


CHEMICAL FEED OPEN SYSTEM SPECIFICATION



INSTALLATION INSTRUCTIONS

- 1) ALL ISOLATION VALVES SHALL BE BALL VALVES.
- 2) POWER WILL BE 110V DEDICATED CIRCUIT FOR CHEMICAL PANEL AND CITY WATER MAG METERS.
- 3) BEFORE ANY WORK STARTS, GENERAL CONTRACTOR SHALL COORDINATE A MEETING WITH ELECTRICAL CONTRACTOR, WATER TREATMENT VENDOR, CONTROL CONTRACTOR AND PLANT ENGINEERING.
- 4) PROVIDE 10 DIAMETERS OF STRAIGHT PIPE UPSTREAM OF CITY FLOW METER AND 5 DIAMETERS DOWNSTREAM. (NOT REQUIRED FOR CHEMICAL TREATMENT SYSTEM METER.)
- 5) ALL 120V POWER WIRING TO CHEMICAL PANEL AND FLOWMETERS BY DIVISION 16. ALL OTHER WIRING BY CONTROLS CONTRACTOR.

KEY NOTES

- 1) 110V MOTOR OPERATED BALL VALVE WITH SPRING RETURN TO FAIL CLOSED. (SIZED PER SCHEDULE)
- 2) CHEMICAL FEED PUMP-PULSATRON SERIES E PLUS, LPB4-SA-PTC1-XXX, WITH 120V PLUG.
- 3) CHEMICAL FEED PUMPS-PULSATRON SERIES E PLUS, LPB4-SA-VTC1-XXX, WITH 120V PLUG.
- 4) CONTROLLER-PULSATROL MODEL MC 9551
- 5) PULSAFEEDER CCR2 CORROSION COUPON RACK WITH HAND VALVES AND COUPONS (1 SOFT STEEL AND 1 COPPER).
- 6) CLEAR PLASTIC PULSAFEEDER MODULAR FLOW MEASURING ASSEMBLY FOR PULSATROL PLUS MCT 450 WITH CONDUCTIVITY PROBE, (OPTIONAL Ph PROBE), ORP PROBE, FLOW SWITCH, SAMPLE PORT, AND FLOW INDICATOR.
- 7) PVC CLEAR PLASTIC STRAINER
- 8) PULSAFEEDER GPC, CONTACTING WATER METER, SIZED PER SCHEDULE.
- 9) FLOAT TYPE FLOW INDICATOR IN CLEAR GRADUATED HOUSING.
- 10) CHEMICAL TANK LEVEL SENSOR (PULSATROL PLUS SINGLE POINT LEVEL WAND MODEL 16-171-81-1).
- 11) CITY OF ANN ARBOR FLOW METER(FURNISHED BY U OF M). INSTALL TO MAINTAIN "PIPE FULL" AT ALL TIMES.
- 12) CITY OF ANN ARBOR FLOW METER(FURNISHED BY U OF M). INSTALL NO HIGHER THAN 48" AFF. COORDINATE WITH CITY OF ANN ARBOR TO DETERMINE IF THIS IS A MAGMETER OR A POSITIVE DISPLACEMENT METER.
- 13) LOCKABLE 120V SWITCH LOCATED NEAR CITY WATER MAG METER.
- 14) MINIMUM 3/4", USE 1" FOR LOCATIONS REQUIRING OVER 50' OF PIPING OR MORE THAN 5 ELBOWS IN ROUTING TO AND FROM CONTROLLER.
- 15) MINIMUM 1" TAP AND BALL VALVE TO CTWR PIPE FOR BLOW DOWN LINE SIZED PER SCHEDULE.
- 16) ISOLATION VALVE LOCATED AT MAIN HEADER.

SEQUENCE OF OPERATION

- CONDUCTIVITY IS CONTROLLED BY ENERGIZING THE BLOW DOWN VALVE TO MAINTAIN 2000 MICRO MHO'S (UMHO'S)
- ORP (OXIDATION REDUCTION POTENTIAL) IS CONTROLLED BY ENERGIZING A PUMP THAT INJECTS BIOCIDES INTO THE FEED LOOP TO MAINTAIN A FREE RESIDUAL ORP RANGE BETWEEN 0.2-0.5 PPM.
- INHIBITOR WILL BE CONTROLLED BY READING THE COOLING TOWER MAKE UP WATER METER AND PROVIDE 110V POWER TO THE INHIBITOR PUMP TO RUN. WATER TREATMENT VENDOR WILL DETERMINE CORRECT CHEMICAL LEVELS FOR THE SYSTEM.
- CHEMICAL DRUM LEVELS WILL BE MONITORED BY THE CONTROLLER AND WILL SEND AN ALARM SIGNAL TO THE CHEMICAL FEED PANEL WHEN EITHER DRUM LEVEL GETS TO A PRE-DETERMINED LOW LEVEL.
- THE CONTROLLER WILL SEND A GENERAL FAULT SIGNAL TO THE DDC WHEN ANY OF THE STANDARD AVAILABLE CONTROLLER MANUFACTURER'S FAULTS OCCUR.
- ALL EQUIPMENT MUST BE SUBMITTED FOR APPROVAL BY PLANT ENGINEERING.

DDC POINTS

- DI CHEM FEED PANEL GENERAL FAULT ALARM
- AI-1 CONDUCTIVITY (4-20 M AMP)
- AI-2 ORP (4-20 M AMP)(OPTIONAL)

DESIGN NOTE

IF SYSTEM IS BEING INSTALLED WITH A NEW COOLING TOWER, pH CONTROL MAY BE ADDED AS AN OPTION TO THE CHEMICAL FEED PANEL ACCORDING TO TOWER MANUFACTURER PASSIVATION PROCEDURES AND ACID WILL BE PUMPED INTO TOWER WATER TO CONTROL pH IF REQUIRED, DURING THE PERIOD OF PASSIVATION.

SCHEDULE

MAX CTW FLOW	BLOW DOWN		MAKE UP WATER	
	GPM	PIPE SIZE	GPM	PIPE SIZE

CONDENSER WATER TREATMENT EQUIPMENT DIAGRAM

NO SCALE

D 15710 002 07 04.dgn

REFERENCED DETAILS/SCHEDULES:
D 15130 002
D 15710 001

ADDITIONAL INFORMATION:

MODULES: 6

UNIVERSITY OF MICHIGAN
ARCHITECTURE, ENGINEERING AND CONSTRUCTION
ARCHITECTURE & ENGINEERING
328 East Hoover, Mall Stop B
Ann Arbor, MI 48109-1002
Phone: 734-764-3414
Fax: 734-936-3334

Condenser Water Treatment Equipment Diagram

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