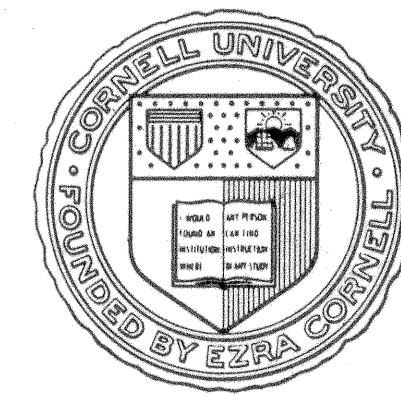




APPROVAL DATE
Philip L Cox 8/8/89
FACILITIES ENGINEERING

LIFE SAFETY

DRAWN BY DATE
MBM & FDP 8/8/89

CHECKED BY

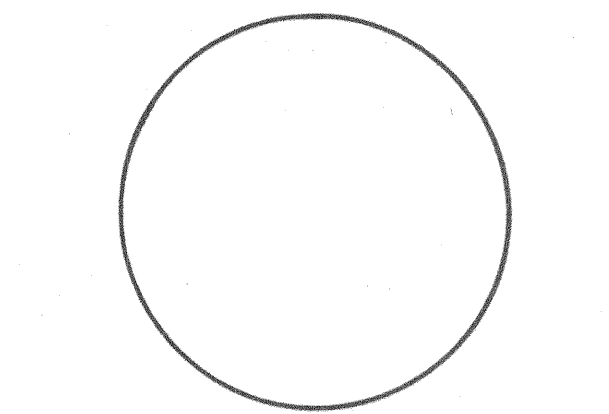
ARCH *ACE* ENERGY
CIVIL *MT* ENVIR
ELEC *SK*
MECH *LACS*
STRUCT

REV DATE BY DESCRIPTION

DRAWING TITLE
MCC SCHEMATICS,
NOTES &
LEGEND

PROJECT
WILSON LAB
CESR COOLING
TOWERS

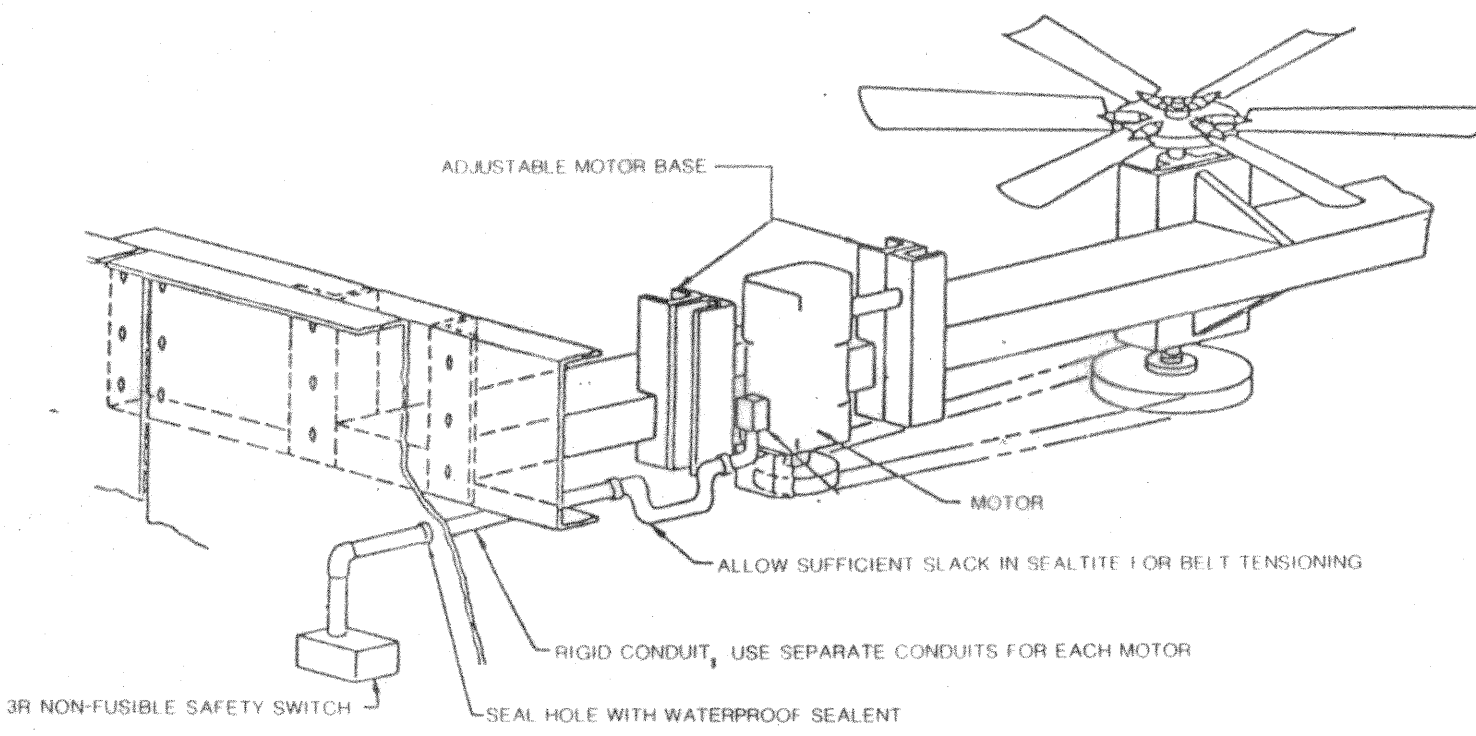
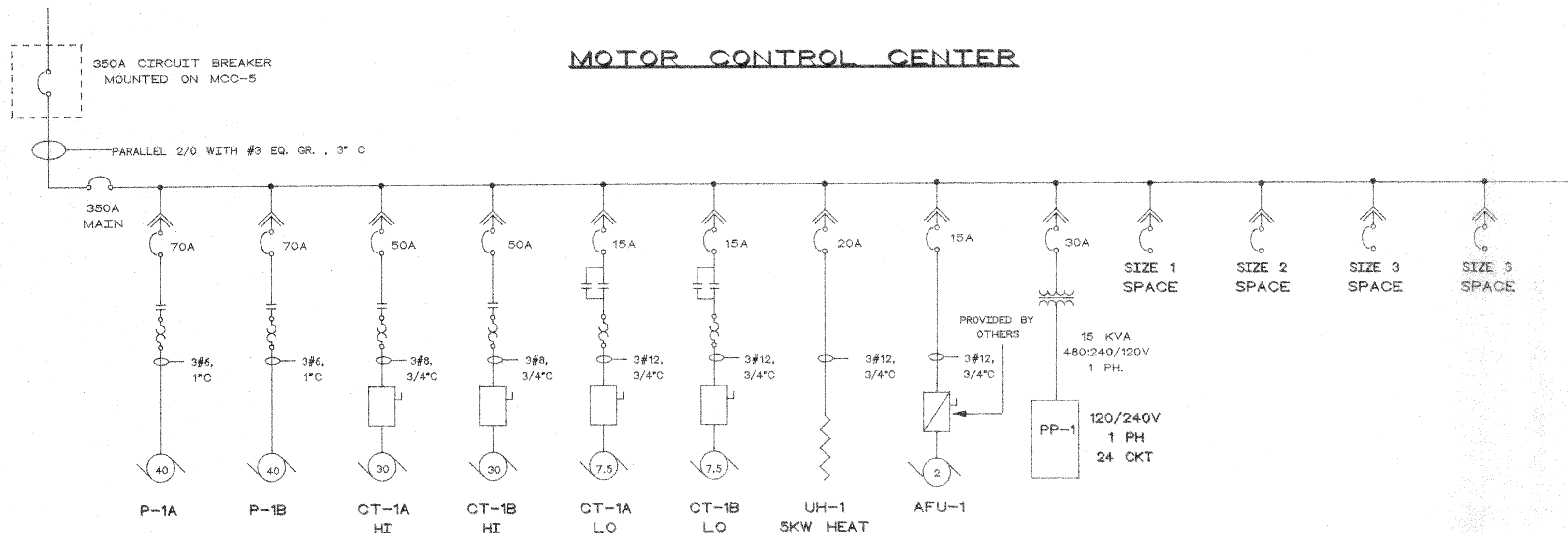
LOCATION NO. 2085



SCALE AS NOTED
FILE NO. 85610
DRAWING NO. D-2849

SHEET NO. E2
20 OF 20

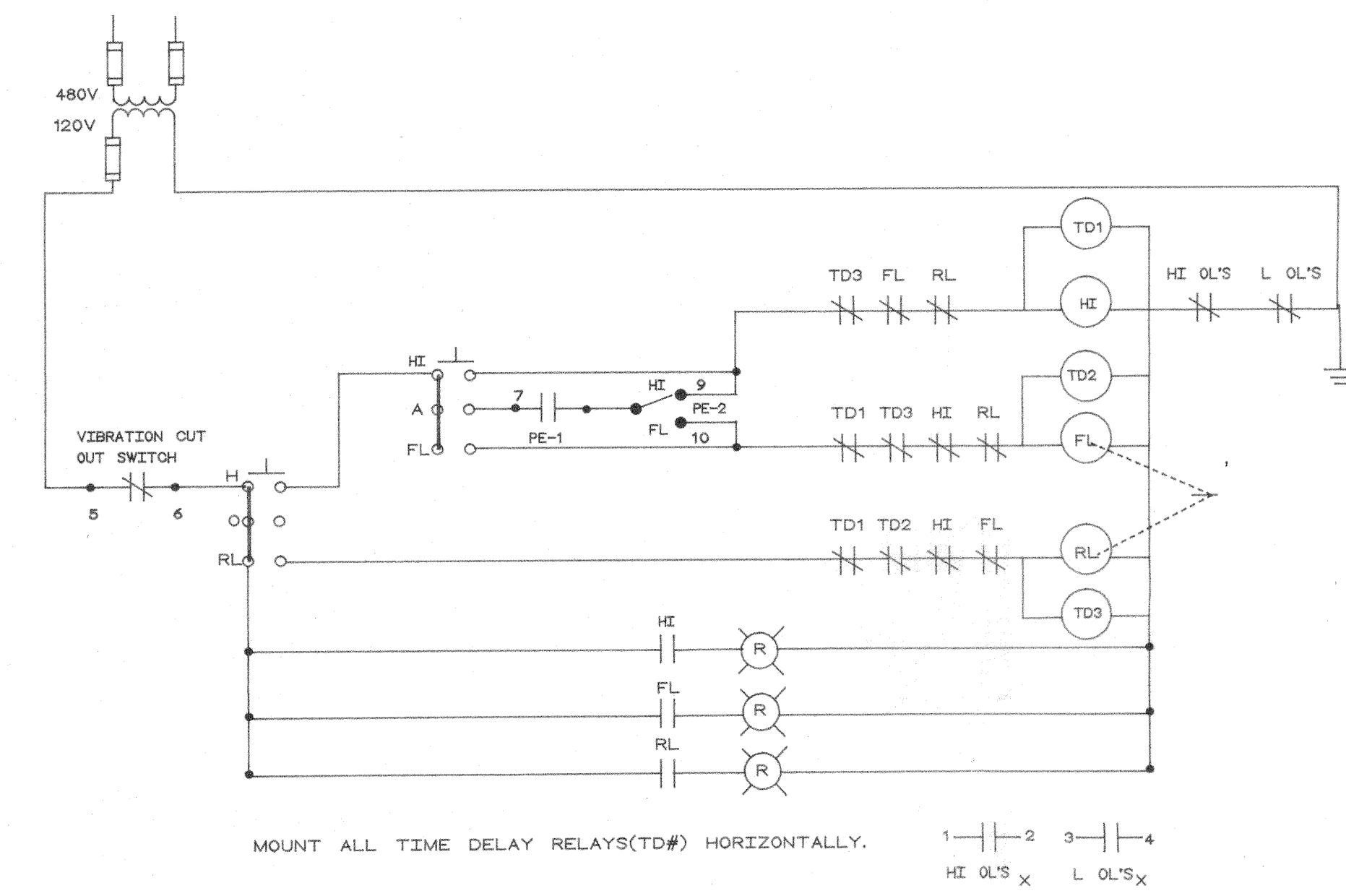
MOTOR CONTROL CENTER



COOLING TOWER FAN DETAIL

PANEL PP-1		120/240VAC		1 PHASE					
OCT. #	TRIP	POLES	AWG	LOCATION	LOCATION	AWG	POLES	TRIP	OCT. #
1	20	1	12	INDOOR LIGHTING	OUTDOOR LIGHTING	12	1	20	2
3	20	1	12	INDOOR OUTLETS	OUTDOOR OUTLETS	12	1	20	4
5	20	1	12	F/A PANEL	EXHAUST FAN (EF-1)	12	1	20	6
7	20	1	12	ATC PANEL	SPARE	1	20	8	
9	20	1		SPARE	SPARE		1	20	10
11				SPACE	SPACE				12
13				SPACE	SPACE				14
15				SPACE	SPACE				16
17				SPACE	SPACE				18
19				SPACE	SPACE				20
21				SPACE	SPACE				22
23				SPACE	SPACE				24

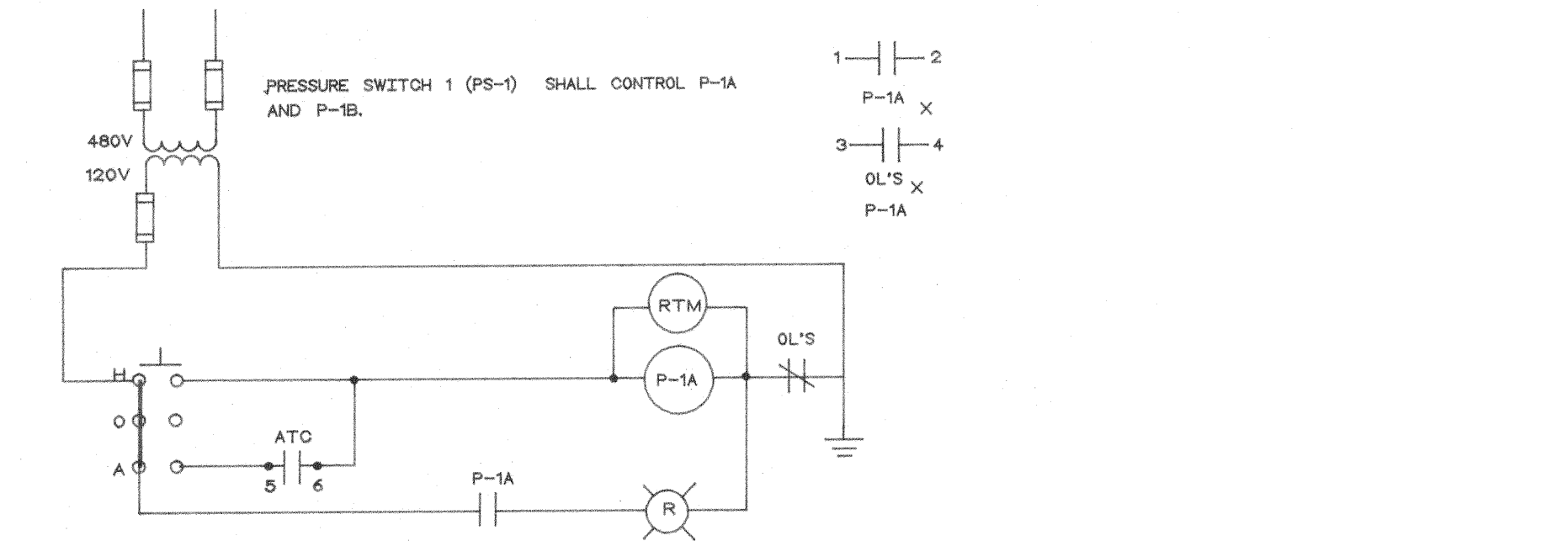
PANELBOARD SCHEDULE



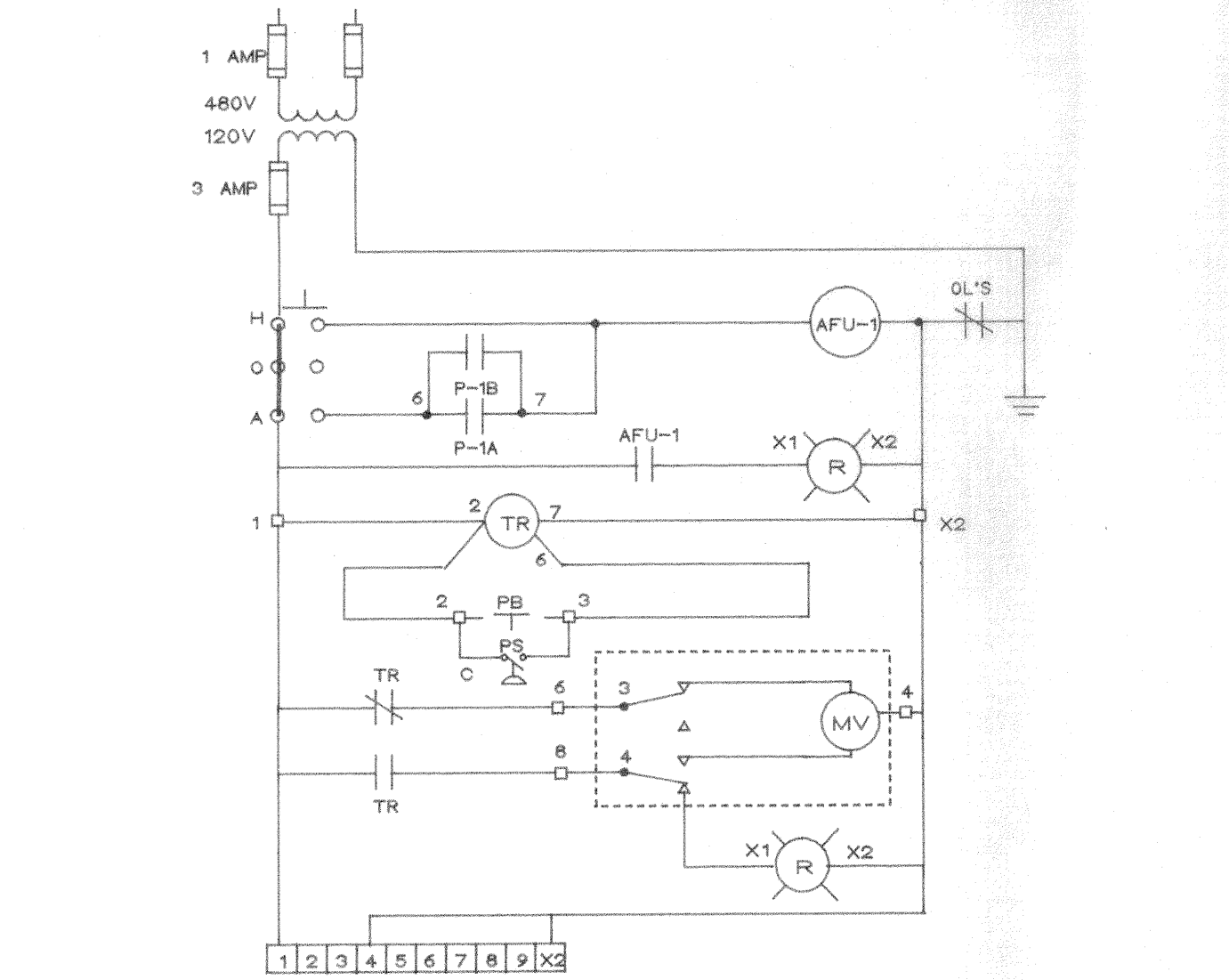
COOLING TOWER CONTROL SCHEMATIC TYPICAL

- TD1 TIME DELAY RELAY TYPICAL
 - HI 30 HP COIL TYPICAL OF TWO
 - FL 7.5 HP COIL FORWARD LOW SPEED TYPICAL OF TWO
 - RL 7.5 HP COIL REVERSING LOW SPEED TYPICAL OF TWO
 - R PILOT LIGHT; RUN
 - RTM RUN TIME METER TYPICAL OF TWO
 - TR TIMER RELAY PROVIDED BY OTHERS
 - MV THREE WAY VALVE COIL PROVIDED BY OTHERS
 - X DENOTES AUXILIARY; WIRE OVERLOAD AUXILIARIES TO ANNUNCIATOR PANEL IN LOE CONTROL ROOM
 - PE-1 PE SWITCH BY OTHERS TYPICAL OF TWO
 - PE-2 PE SWITCH BY OTHERS TYPICAL OF TWO
 - PS-1 PRESSURE SWITCH NO PROVIDED BY OTHERS
 - ATC FROM ATC PANEL TYPICAL OF TWO
 - RELAY CONTACTS; NUMBERS REFER TO TERMINAL BLOCK IDENTIFICATION NUMBERS ON 2 TYPE B STARTERS, NO OR NC
- SEE SHEET M-6 ATC CONTROL SCHEMATIC FOR TERMINATION POINTS FOR ALL ATC DEVICES.

CONTROL CIRCUIT LEGEND



PUMP CONTROL SCHEMATIC TYPICAL



STARTER SUPPLIED BY MANUFACTURER AND SHALL BE OUTFITTED AS SHOWN ON WIRING SCHEMATIC.

WIRE ALL NUMBERED POINTS TO A MANUFACTURER SUPPLIED TERMINAL BOARD IN STARTER.

CONTACTS P-1A AND P-1B ARE AUXILIARY CONTACTS FROM PUMPS P-1A AND P-1B STARTERS IN MOTOR CONTROL CENTER.

BACKWASH LIGHT IS ON AFTER VALVE HAS ROTATED INTO POSITION (5-10 SEC DELAY AFTER BACKWASH INITIATION).

AUTOMATIC FILTRATION UNIT
CONTROL SCHEMATIC

- The scope of this project is to provide power and lighting for the new Cooling Towers and Mechanical Room.
- New York State Board of Fire Underwriters (NYBFU) inspection shall be required. All work shall comply with the latest editions of the NEC, NYS Uniform Building Code, and Cornell University Standards
- Contractor shall price job based on all work being done during regular hours.
- All surface raceways in Mechanical Room shall be rigid conduit with sealite connections to the pump and fan motors. PVC conduit will be allowed in the deck.
- All circuits enclosed in PVC or sealite conduit shall be provided with a #12 equipment grounding conductor from the branch circuit source.
- The location of all conduit runs inside the Wilson Lab facility shall be coordinated with Wilson Lab personnel.
- When running conduit to the cooling tower fan motors all conduit must be water tight and pitched downward to allow condensation to drain away from the motor conduit box. Do not run the conduit through the fan deck.
- Provide wire lables for all conductors in the MCC-7 and conductors wired to terminal strips.
- All control, telephone, and spare conduits shall be provided with a nylon type pull tape.
- Provide NO contacts in Fire Alarm Panel for annuciator panel in Room 201.

GENERAL NOTES

- QUAD RECEPTACLE
- DUPLEX RECEPTACLE
- SURFACE CONDUIT
- CONDUIT IN THE DECK
- HOME RUN; ARROWS INDICATE NUMBER OF CKTS. LG. SLASH HOT, SH. SLASH NEUTRAL, EXCLUDING GRD.
- S SINGLE-POLE SWITCH
- S₃ THREE-WAY SWITCH
- A.F.F ABOVE FINISHED FLOOR
- F/A FIRE ALARM
- CTP CHEMICAL TREATMENT PANEL
- ATC AUTOMATIC TEMPERATURE CONTROL
- R COMBINATION SMOKE & HEAT DETECTOR
- F PULL STATION
- F FIRE ALARM HORN
- 30 MOTOR, # DENOTES HP
- EM DUAL LITE ML-2ST
- PANELBOARD
- SAFETY SWITCH
- A LIGHTING FIXTURE
- COMBINATION STARTER

LEGEND

NOTE: ALL FIXTURES FURNISHED WITHOUT LAMPS				
TYPE	MANUFACTURER	CAT. NO.	LAMPS NUMBER & TYPE	REMARKS & ACCESSORIES
A	HUBBELL	WZW44-WAD-E1	4-34W/WW/RS	CEILING
B	HUBBELL	NRG-306-4-PC	1-26W QUAD/PL	W/ NRG-83 BOX AND PHOTOCONTROL
C	OROUSE-HINDS LUMARK	DTD17VB25SBV	1-175W/MV	SEE PLAN

LIGHTING FIXTURE SCHEDULE