

TELEMETRY / CONTROL SCHEMATIC

SEQUENCE OF OPERATION AND TELEMETRY NOTES

KING RICHARD AND COLLEGE TANK REMOTE TELEMETRY UNITS (RTU) SHALL TRANSMIT TANK LEVEL AS MEASURED BY TANK PRESSURE TRANSDUCERS AT SITES.

WATER TREATMENT PLANT (WTP) PUMP CONTROL PANEL AND WASTE WATER TREATMENT PLANT (WWTP) RTU SHALL BOTH RECEIVE AND DISPLAY TRANSMITTED TANK LEVELS AND DISPLAY RUN STATUS OF EACH WELL PUMP. THE WTP PUMP CONTROL PANEL PLC SHALL PROVIDE THE FOLLOWING SETPOINTS, WHICH SHALL BE ACCESSIBLE LOCALLY AND FROM THE WWTP RTU:

SETPOINT	RANGE	INITIAL
COLLEGE TANK LOW LEVEL WTP ON	0.0 - 23.0 FEET	18.0 FEET
COLLEGE TANK HIGH LEVEL WTP OFF	0.0 - 23.0 FEET	22.9 FEET
COLLEGE TANK LOW LEVEL ALARM	0.0 - 23.0 FEET	16.5 FEET
COLLEGE TANK HIGH LEVEL ALARM	0.0 - 23.0 FEET	23.0 FEET
KING RICHARD TANK LOW LEVEL WTP ON	0.0 - 23.0 FEET	18.0 FEET
KING RICHARD TANK HIGH LEVEL WTP OFF	0.0 - 23.0 FEET	22.5 FEET
KING RICHARD TANK LOW LEVEL ALARM	0.0 - 23.0 FEET	16.5 FEET
KING RICHARD TANK HIGH LEVEL ALARM	0.0 - 23.0 FEET	23.0 FEET
ACTIVE TANK SETTINGS	COLLEGE/KING RICHARD/BOTH	BOTH

THE "ACTIVE TANK SETTINGS" SELECTION WILL BE USED TO DISABLE SETTINGS FROM A TANK, IF ONE IS OFFLINE. WHEN SETTINGS ARE NOT ACTIVE FOR A TANK, THOSE SETTINGS WILL NOT INITIATE ANY WTP OPERATIONS.

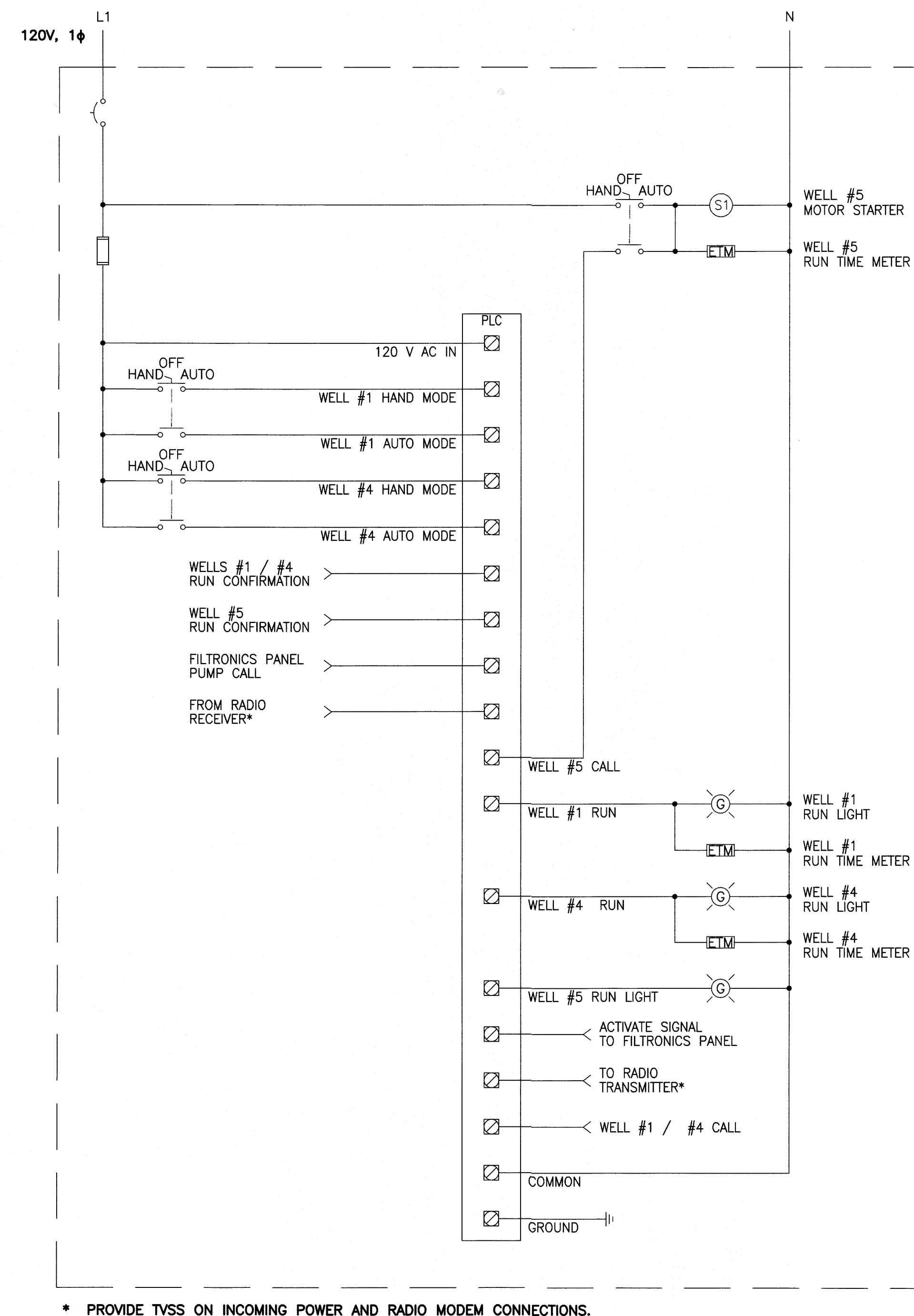
IF ANY ACTIVE TANK LEVEL FALLS TO THE "LOW LEVEL WTP ON" SETPOINT, THE WTP CONTROL PANEL WILL SIGNAL THE FILTRONICS PANEL TO OPERATE. THE FILTRONICS PANEL WILL RETURN AN EXISTING PUMP CALL SIGNAL. WHEN THIS IS RECEIVED, THE WTP CONTROL PANEL WILL ALTERNATE ACTIVATING EITHER WELL PUMP #5 (225 GPM) OR COMBINED WELL PUMPS #1 (80 GPM) AND #4 (74 GPM). THE CONTROLLER WILL RECEIVE A RUN CONFIRMATION FROM EACH PUMP WHEN CALLED. IF A RUN CONFIRMATION SIGNAL IS NOT RECEIVED FROM THE CALLED PUMPS, IT WILL TERMINATE THE CALLS AND TRY THE OTHER PUMP(S). A FAILED RUN CONFIRMATION FROM EITHER WELL PUMP #1 OR #4 WILL STOP BOTH PUMPS. RUN CONFIRMATION SIGNALS WILL BE GENERATED BY INSTALLING AMP DETECTORS AT THE MOTOR STARTERS. WTP CONTROL PANEL SHALL COMMUNICATE INDEPENDENTLY WITH WELL #1 RTU AND #4 RTU THROUGH ADDRESSED SIGNALS.

IF ANY ACTIVE TANK LEVEL SETTING REACHES THE "HIGH LEVEL WTP OFF" SETPOINT, THE WTP CONTROL PANEL WILL TERMINATE THE OPERATE SIGNAL TO THE FILTRONICS PANEL. WHEN THE PUMP CALL SIGNAL IS NO LONGER RECEIVED FROM THE FILTRONICS PANEL, ALL WELL PUMP CALL SIGNALS WILL BE STOPPED. THE ALTITUDE VALVE AT COLLEGE TANK WILL BE SET TO CLOSE AT 22.5 FEET; THEREFORE, THE 23.0 FEET SETTING WILL ALLOW THE WTP TO CONTINUE FILLING THE KING RICHARD TANK AFTER THE COLLEGE TANK IS FULL.

IF EITHER HIGH OR LOW LEVEL ALARM SETPOINTS ARE REACHED, THE WTP PANEL AND WWTP RTU WILL GENERATE AUDIBLE ALARMS. THE ALARMS SHALL BE SIMULTANEOUSLY SILENCED FROM EITHER LOCATION.

WTP ELECTRICAL NOTES:

- REFER TO SHEET C19 FOR WTP LAYOUT AND LOCATION OF ELECTRICAL PANELS.
- PROVIDE A NEW CONTROL PANEL FOR THE PROPOSED EXHAUST FAN, WHICH WILL INCLUDE HAND-OFF-AUTO CONTROL OF THE FAN. THE PANEL SHALL INCLUDE A 96 PIN 24 HOUR TIMER FOR AUTO OPERATION OF THE FAN. PROVIDE A MOTOR STARTER IN THE PANEL AND SAFETY DISCONNECT AT THE FAN.
- INSTALL THE FOLLOWING ADDITIONAL BREAKERS IN EXISTING PANEL "L":
20 AMP SINGLE POLE - WTP PUMP CONTROL PANEL
20 AMP DOUBLE POLE - EXHAUST FAN



WATER TREATMENT PLANT PUMP CONTROL PANEL



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FERRUM, VIRGINIA

WATER TREATMENT PLANT ELECTRICAL SCHEMATICS