KEYNOTES

A. REMOVE EXISTING LIGHTING FIXTURE AND REPLACE WITH NEW FIXTURE. CONNECT TO EXISTING CIRCUIT "LV"–11a.

B. REMOVE EXISTING LIGHTING FIXTURE AND REPLACE WITH NEW FIXTURE. CONNECT TO EXISTING CIRCUIT "LV"–7 (CIRCUIT IS SWITCHED BY SWITCH "h" SHOWN ON SHEET E102).

C. REMOVE EXISTING LIGHTING FIXTURE AND REPLACE WITH NEW FIXTURE. CONNECT TO EXISTING CIRCUIT "LV"–7 (CIRCUIT IS SWITCHED BY SWITCH "g" SHOWN ON SHEET E102).

D. REMOVE EXISTING LIGHTING FIXTURE AND REPLACE WITH NEW FIXTURE. PROVIDE NEW 2#12, #12G, 3/4"C CONDUIT AND WIRING WITHIN WET WELL TO EXISTING PANEL "LV", CIRCUIT "LV–13" PER DETAIL 3/E2. PROVIDE NEW EXPLOSIONPROOF SWITCH "b" WHERE SHOWN. COORDINATE INSTALLATION OF LIGHTING WITH INSTALLATION OF DUCTWORK TO AVOID CONFLICTS.

E. FLOAT SWITCH SHALL BE A NON–MERCURY MECHANICAL TILT FLOAT LEVEL SWITCH WITH SPDT CONTACTS RATED 13 AMPERES AT 120/240 VAC WITH AN ABS HOUSING SUSPENDED ON A 40 FOOT LONG NEOPRENE JACKETED CABLE AND SHALL BE WARRICK SERIES M–GRE–40–W WITH 7762381 CABLE MOUNTED WEIGHT, OR EQUAL.

F. PROVIDE JUNCTION BOX WITH TERMINAL BLOCKS AT CEILING FOR TERMINATION OF SUBMERSIBLE CABLES. SEE KEYNOTE B OF DETAIL 3/E2.

G. EXISTING FLOW METER IS A KROHNE 16" MAGNETIC ALTOMETER. PROVIDE FIELD TESTING/CALIBRATION OF THE METER BY A KROHNE TRAINED TECHNICIAN USING THE KROHNE GS8 B ON–SITE VERIFICATION RECORD. SUBMIT ONE COMPLETE REPORT WITH TEST RESULTS AND FINDINGS INCLUDING RECOMMENDATIONS. CONTACT LOCAL KROHNE SERVICE REPRESENTATIVE: RDH ENVIRONMENTAL SERVICE (602) 381–1960, RANDY@RDH–ENV.COM

H. REMOVE EXISTING JUNCTION BOX, CONDUIT AND WIRING UP WALL TO CEILING (NOTE: CIRCUIT IS FED FROM A JUNCTION BOX ON SOUTH WALL OF MIDDLE LEVEL). CHIP OUT CEILING CONCRETE AND REMOVE CONDUIT TO A MINIMUM DEPTH OF 2" AND FILL VOID SOLID WITH GROUT FLUSH WITH EXISTING CEILING. PAINT TO MATCH.

I. REPLACE EXISTING ULTRASONIC LEVEL SENSOR WITH NEW SENSOR, MILLTRONICS XPS–10 SENSOR, WITH 3" FLANGE MOUNTING, CLASS I, DIV. 2, AND 30M CABLE, MODEL 7ML1115–0EC30. MOUNT ON TOP OF WET WELL GRATING. CONNECT TO EXISTING MILLTRONICS LEVEL TRANSMITTER IN EXISTING BUBBLE PANEL IN MAIN ACCESS ROOM. SEE DETAIL 3/E2.

J. PROVIDE JUNCTION BOX WITH POWER TERMINAL BLOCKS FOR TERMINATING SUBMERSIBLE PUMP POWER CABLES. PROVIDE STRAIN RELIEF CORD GRIP WITH STAINLESS STEEL GRIPPING MESH SIZED FOR CABLE ON BOTTOM OF BOX TO SUPPORT THE CABLE. MOUNT BOX NEAR CEILING OF MIDDLE LEVEL SO AS TO SUSPEND CABLES FREELY DOWN TO PUMP ROOM. MODIFY EXISTING 3" CONDUITS FEEDING THE JUNCTION BOX AS NEEDED (SEE CONDUITS P5A, P8A AND (P5C) ON SHEET E101). PROVIDE HOLES IN THE MIDDLE LEVEL FLOOR FOR CABLES TO HANG FREELY THROUGH INTO PUMP ROOM AND A 4" SCHEDULE 80 PVC SLEEVE FOR EACH CABLE MOUNTED TO WALL FROM THE HOLES TO 24" BELOW THE JUNCTION BOX FOR CABLE PROTECTION. 1

K. PROVIDE JUNCTION BOX WITH TERMINAL BLOCKS FOR TERMINATING SUBMERSIBLE PUMP CONTROL CABLES. PROVIDE STRAIN RELIEF CORD GRIP WITH STAINLESS STEEL GRIPPING MESH SIZED FOR CABLE ON BOTTOM OF BOX TO SUPPORT THE CABLE. MOUNT BOX NEAR CEILING OF MIDDLE LEVEL SO AS TO SUSPEND CABLES FREELY DOWN TO PUMP ROOM. PROVIDE HOLES IN THE MIDDLE LEVEL FLOOR FOR CABLE TO HANG FREELY THROUGH INTO PUMP ROOM, AND A 3" SCHEDULE 80 PVC SLEEVE FOR EACH CABLE MOUNTED TO WALL FROM THE HOLES TO 24" BELOW THE JUNCTION BOX FOR CABLE PROTECTION.

L. PUMP MOTOR CONTROL CONDUCTOR CABLE SHALL BE A 25 #22AWG COPPER CONDUCTOR CABLE WITH OVERALL FOIL AND BRAIDED COPPER SHIELDS, BELDEN 9948, OR EQUAL.

M. REPLACE EACH EXISTING COMMUNITOR MOTOR WITH A 460 VOLT, 3 PHASE, 5HP, EXPLOSIONPROOF, IMMISCIBLE MOTOR, MUFFIN MONSTER PART No. A30010–0364–040 WITH ASSEMBLY, SPOOL AND COUPLING PART No. A31104–182T–612–IMM, WITH CABLE LENGTH ADEQUATE TO REACH THE CEILING MOUNTED CABLE TERMINATION BOX.

N. INSTALL HIGH LEVEL FLOAT SWITCHES TO OPEN NORMALLY CLOSED CONTACTS ON RISING LEVEL, INSTALL LOW LEVEL SWITCHES TO OPEN NORMALLY OPEN CONTACTS ON FALLING LEVEL.

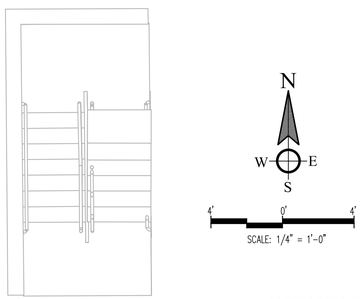
O. INSTALL FLOAT SWITCH TO CLOSE NORMALLY CLOSED CONTACTS ON FALLING LEVEL AT MINIMUM OPERATING WATER ELEVATION RECOMMENDED BY MIXER MANUFACTURER.

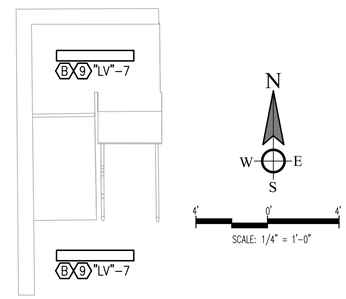
P. RECEPTACLE SHALL BE 20 AMPERE, 125–250VAC, 2 WIRE, 3 POLE EXPLOSIONPROOF, CROUSE–HINDS CPS152–201SA WITH COPPER FREE ALUMINUM BACK BOX, OR EQUAL, MOUNTED 48" ABOVE FLOOR.

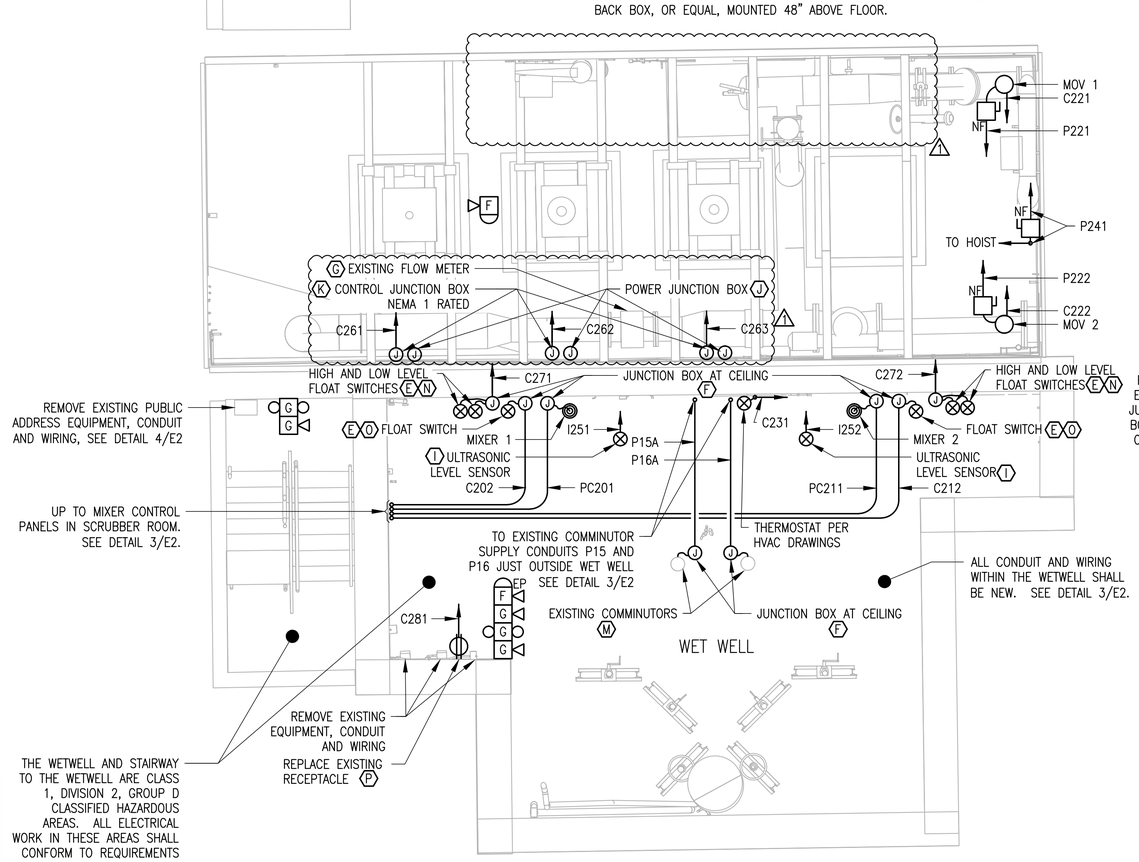
CONDUIT SCHEDULE – 200 SERIES

NO.	FROM	TO	CONDUIT	WIRE	COMMENT
P15A	MCC–1 VIA EXIST. CONDUIT P15 JUST OUTSIDE WET WELL	COMMINUTOR 1 CABLE TERMINATION J–BOX	1	8#12, #12G	3#12=480 VOLT POWER, 2#12=CONTROL, 3#12=SPARE
P16A	MCC–1 VIA EXIST. CONDUIT P16 JUST OUTSIDE WET WELL	COMMINUTOR 2 CABLE TERMINATION J–BOX	1	8#12, #12G	3#12=480 VOLT POWER, 2#12=CONTROL, 3#12=SPARE
P201	PANEL "HV"–2,4,6	MIXER 1 CONTROL PANEL	1	3#8, #10G	480 VOLT POWER
C201	SCADA PANEL	MIXER 1 CONTROL PANEL	1	10#14, #14G #10G	RUN, IN–AUTO, RUN COMMAND (4#14 ARE SPARE)
PC201	MIXER 1 CONTROL PANEL	MIXER 1 CABLE TERMINATION J–BOX	1	3#10, 4#14, #10G	480 VOLT POWER; SEAL LEAK, OVERTEMP. CONTROL
C202	MIXER 1 CONTROL PANEL	WEST FLOAT SWITCH TERMINATION J–BOX	1	2#14, #14G	LOW LEVEL CUTOFF
P211	PANEL "HV"–8,10,12	MIXER 2 CONTROL PANEL	1	3#8, #10G	480 VOLT POWER
C211	SCADA PANEL	MIXER 2 CONTROL PANEL	1	10#14, #14G #10G	RUN, IN–AUTO, RUN COMMAND (4#14 ARE SPARE)
PC211	MIXER 2 CONTROL PANEL	MIXER 2 CABLE TERMINATION J–BOX	1	3#10, 4#14, #10G	480 VOLT POWER; SEAL LEAK, OVERTEMP. CONTROL
C212	MIXER 2 CONTROL PANEL	EAST FLOAT SWITCH TERMINATION J–BOX	1	2#14, #14G	LOW LEVEL CUTOFF
C221	SCADA PANEL	MOV 1	1	12#14, #14G	O/C CONTROL & POSITION IND. (4#14 ARE SPARE)
P221	PANEL "HV"–14,16,18	MOV 1	1	3#12, #12G	480 VOLT POWER
C222	SCADA PANEL	MOV 2	1	12#14, #14G	O/C CONTROL & POSITION IND. (4#14 ARE SPARE)
P222	PANEL "HV"–20,22,24	MOV 2	1	3#12, #12G	480 VOLT POWER
C231	THERMOSTAT	EVAPORATIVE COOLER EC–5 (SHEET E101)	3/4	2#14, #14G	120 VOLT COOLER PUMP CONTROL
P241	MCC–1, 5EFR, 20A/3P CIRCUIT BREAKER	MIDDLE LEVEL HOIST	1	3#12, #12G	480 VOLT POWER
I251	EXISTING BUBBLER PANEL IN MAIN ACCESS ROOM	WEST WET WELL ULTRASONIC LEVEL SENSOR	3/4	CABLE PER SENSOR MFGR.	LEVEL SIGNAL
I252	EXISTING BUBBLER PANEL IN MAIN ACCESS ROOM	EAST WET WELL ULTRASONIC LEVEL SENSOR	3/4	CABLE PER SENSOR MFGR.	LEVEL SIGNAL
C261	PUMP 1 VFD	PUMP 1 MOTOR	1–1/2	24 CONDUCTOR CABLE (L)	PUMP MONITORING SIGNALS SEE KEYNOTE C, DETAIL 1/E20 1
C262	PUMP 2 VFD	PUMP 2 MOTOR	1–1/2	24 CONDUCTOR CABLE (L)	PUMP MONITORING SIGNALS SEE KEYNOTE C, DETAIL 1/E20
C263	PUMP 3 VFD	PUMP 3 MOTOR	1–1/2	24 CONDUCTOR CABLE (L)	PUMP MONITORING SIGNALS SEE KEYNOTE C, DETAIL 1/E20
C271	SCADA PANEL	WEST FLOAT SWITCH TERMINATION J–BOX	3/4	6#14, #14G	HIGH AND LOW LEVEL ALARMS (2#14 ARE SPARE)
C272	SCADA PANEL	EAST FLOAT SWITCH TERMINATION J–BOX	3/4	6#14, #14G	HIGH AND LOW LEVEL ALARMS (2#14 ARE SPARE)
C281	PANEL "LV"–39 EXIST. 20A/1P BREAKER	RECEPTACLE IN WET WELL	3/4	2#12, #12G	120 VOLT POWER

* TSP = TWISTED SHIELDED PAIR INSTRUMENTATION CABLE, SEE SPECIFICATIONS

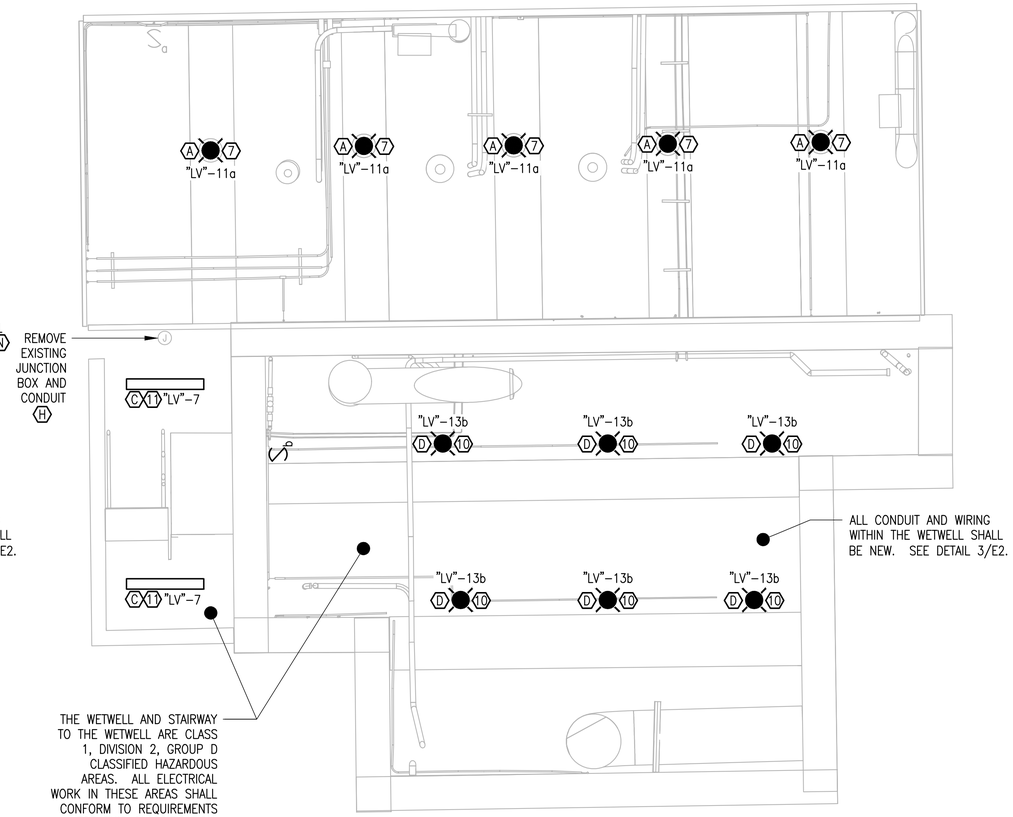






MIDDLE LEVEL ELECTRICAL POWER PLAN

SCALE: 1/4"=1'–0"



MIDDLE LEVEL ELECTRICAL LIGHTING PLAN

SCALE: 1/4"=1'–0"

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NO.	REVISION	APPV'D.	DATE
1	REVISIONS DURING BIDDING	RPC	7/16/16

Registered Professional Engineer (Electrical) CERTIFICATE NO. 14502 RICHARD P. CANNEY 9/8/15 ARIZONA U.S.A. EXPIRES 6/30/17

DESIGNED BY : R.P.C.
DRAWN BY : R.P.C.
CHK'D BY (DESIGN) : M.F.T.
CHK'D BY (FIELD ENGR) :
FIELD BOOK NO. :

PIMA COUNTY
REGIONAL WASTEWATER
RECLAMATION DEPARTMENT

PIMA COUNTY WASTEWATER RECLAMATION
201 North Stone Avenue * Tucson, Arizona 85701-1207 * Phone: (520) 740-6500

CONTINENTAL RANCH
REGIONAL PUMP STATION
UPGRADE DESIGN
MIDDLE LEVEL ELECTRICAL
POWER AND LIGHTING PLANS

R–2014–079
G–2014–078

Date: SEPT. 8, 2015

SCALE: HORIZ. : 1/4" = 1'
VERT. : N/A

SHEET NO. : E103

RCE JOB No. 13107
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