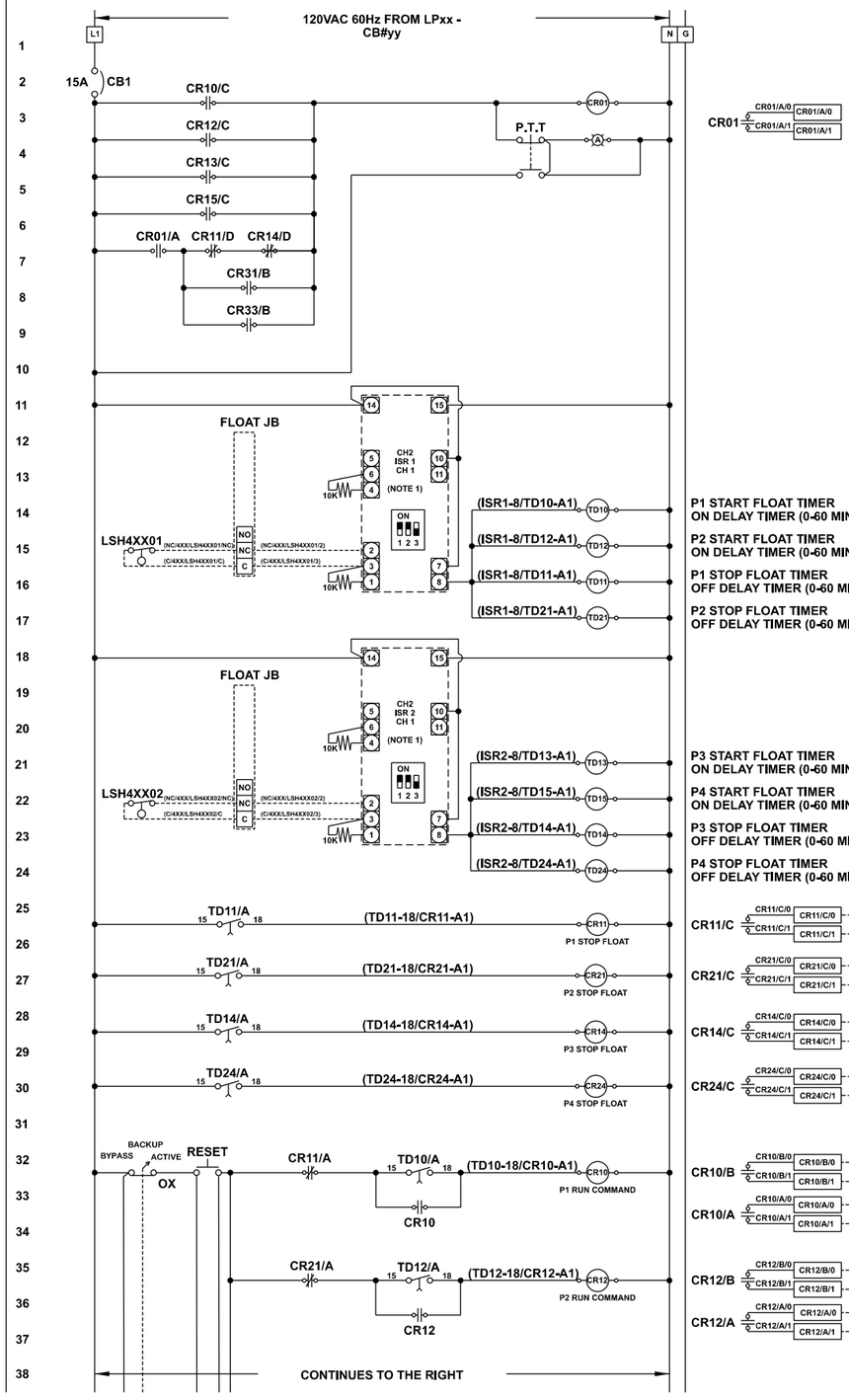

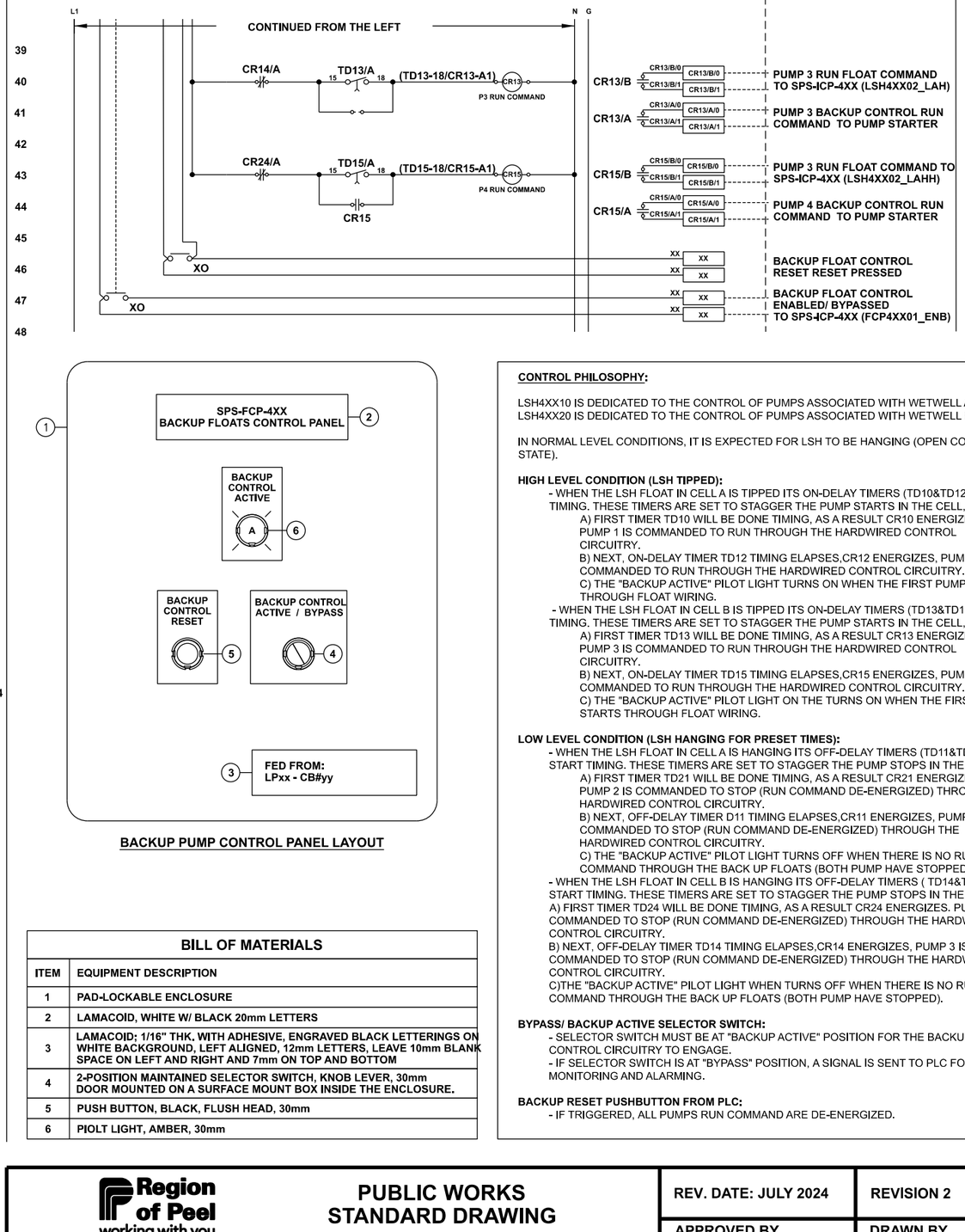

BACKUP PUMP CONTROL PANEL LAYOUT

CONTROL PHILOSOPHY:

LSH4XX10 IS DEDICATED TO THE CONTROL OF PUMPS ASSOCIATED WITH WETWELL A.
LSH4XX20 IS DEDICATED TO THE CONTROL OF PUMPS ASSOCIATED WITH WETWELL B.

IN NORMAL LEVEL CONDITIONS, IT IS EXPECTED FOR LSH TO BE HANGING (OPEN CONTACT STATE).

HIGH LEVEL CONDITION (LSH TIPPED):

- WHEN THE LSH FLOAT IN CELL A IS TIPPED ITS ON-DELAY TIMERS (TD10&TD12) START TIMING. THESE TIMERS ARE SET TO STAGGER THE PUMP STARTS IN THE CELL,
  - A) FIRST TIMER TD10 WILL BE DONE TIMING, AS A RESULT CR10 ENERGIZES. PUMP 1 IS COMMANDED TO RUN THROUGH THE HARDWIRED CONTROL CIRCUITRY.
  - B) NEXT, ON-DELAY TIMER TD12 TIMING ELAPSES,CR12 ENERGIZES, PUMP 2 IS COMMANDED TO RUN THROUGH THE HARDWIRED CONTROL CIRCUITRY.
  - C) THE "BACKUP ACTIVE" PILOT LIGHT TURNS ON WHEN THE FIRST PUMP STARTS THROUGH FLOAT WIRING.
- WHEN THE LSH FLOAT IN CELL B IS TIPPED ITS ON-DELAY TIMERS (TD13&TD15) START TIMING. THESE TIMERS ARE SET TO STAGGER THE PUMP STARTS IN THE CELL,
  - A) FIRST TIMER TD13 WILL BE DONE TIMING, AS A RESULT CR13 ENERGIZES. PUMP 3 IS COMMANDED TO RUN THROUGH THE HARDWIRED CONTROL CIRCUITRY.
  - B) NEXT, ON-DELAY TIMER TD15 TIMING ELAPSES,CR15 ENERGIZES, PUMP 4 IS COMMANDED TO RUN THROUGH THE HARDWIRED CONTROL CIRCUITRY.
  - C) THE "BACKUP ACTIVE" PILOT LIGHT ON THE TURNS ON WHEN THE FIRST PUMP STARTS THROUGH FLOAT WIRING.

LOW LEVEL CONDITION (LSH HANGING FOR PRESET TIMES):

- WHEN THE LSH FLOAT IN CELL A IS HANGING ITS OFF-DELAY TIMERS (TD11&TD21) START TIMING. THESE TIMERS ARE SET TO STAGGER THE PUMP STOPS IN THE CELL,
  - A) FIRST TIMER TD21 WILL BE DONE TIMING, AS A RESULT CR21 ENERGIZES. PUMP 2 IS COMMANDED TO STOP (RUN COMMAND DE-ENERGIZED) THROUGH THE HARDWIRED CONTROL CIRCUITRY.
  - B) NEXT, OFF-DELAY TIMER D11 TIMING ELAPSES,CR11 ENERGIZES, PUMP 1 IS COMMANDED TO STOP (RUN COMMAND DE-ENERGIZED) THROUGH THE HARDWIRED CONTROL CIRCUITRY.
  - C) THE "BACKUP ACTIVE" PILOT LIGHT TURNS OFF WHEN THERE IS NO RUN COMMAND THROUGH THE BACK UP FLOATS (BOTH PUMP HAVE STOPPED).
- WHEN THE LSH FLOAT IN CELL B IS HANGING ITS OFF-DELAY TIMERS (TD14&TD24) START TIMING. THESE TIMERS ARE SET TO STAGGER THE PUMP STOPS IN THE CELL,
  - A) FIRST TIMER TD24 WILL BE DONE TIMING, AS A RESULT CR24 ENERGIZES. PUMP 4 IS COMMANDED TO STOP (RUN COMMAND DE-ENERGIZED) THROUGH THE HARDWIRED CONTROL CIRCUITRY.
  - B) NEXT, OFF-DELAY TIMER TD14 TIMING ELAPSES,CR14 ENERGIZES, PUMP 3 IS COMMANDED TO STOP (RUN COMMAND DE-ENERGIZED) THROUGH THE HARDWIRED CONTROL CIRCUITRY.
  - C)THE "BACKUP ACTIVE" PILOT LIGHT WHEN TURNS OFF WHEN THERE IS NO RUN COMMAND THROUGH THE BACK UP FLOATS (BOTH PUMP HAVE STOPPED).

BYPASS/ BACKUP ACTIVE SELECTOR SWITCH:

- SELECTOR SWITCH MUST BE AT "BACKUP ACTIVE" POSITION FOR THE BACKUP FLOAT CONTROL CIRCUITRY TO ENGAGE.
- IF SELECTOR SWITCH IS AT "BYPASS" POSITION, A SIGNAL IS SENT TO PLC FOR MONITORING AND ALARMING.

BACKUP RESET PUSHBUTTON FROM PLC:

- IF TRIGGERED, ALL PUMPS RUN COMMAND ARE DE-ENERGIZED.

BILL OF MATERIALS

ITEM	EQUIPMENT DESCRIPTION
1	PAD-LOCKABLE ENCLOSURE
2	LAMACOID, WHITE W/ BLACK 20mm LETTERS
3	LAMACOID; 1/16" THK. WITH ADHESIVE, ENGRAVED BLACK LETTERINGS ON WHITE BACKGROUND, LEFT ALIGNED, 12mm LETTERS, LEAVE 10mm BLANK SPACE ON LEFT AND RIGHT AND 7mm ON TOP AND BOTTOM
4	2-POSITION MAINTAINED SELECTOR SWITCH, KNOB LEVER, 30mm DOOR MOUNTED ON A SURFACE MOUNT BOX INSIDE THE ENCLOSURE.
5	PUSH BUTTON, BLACK, FLUSH HEAD, 30mm
6	PIOLT LIGHT, AMBER, 30mm

NOTES:

1. SIGNAL ISOLATORS CHANNELS 1 & 2 DIP SWITCHES TO BE SET FOR THE RELAY TO BE ENERGIZED ON A OPEN CIRCUIT INPUT.
2. THIS DRAWING ONLY SHOWS TWO PUMPS PER WET WELL. DESIGNER TO UPDATE DRAWING AS REQUIRED TO SUIT TYPE II STATIONS.
3. DESIGNER TO ENSURE THAT CONTROL RELAYS AND TIMERS TERMINAL NUMBERS ARE REFLECTED IN THE PLC PANEL/ DESIGN.
4. FLOAT FAILURE REFERS TO WHEN LOW LEVEL FLOAT WIRES ARE BROKEN AND HIGH FLOAT IS TRIGGERED. THE CIRCUIT IS DESIGNED TO PROTECT THE SYSTEM AND WILL RELY ON HIGH FLOAT ONLY TO START/ STOP OF THE PUMPS.

Region of Peel working with you

PUBLIC WORKS STANDARD DRAWING

BACKUP FLOATS CONTROL PANEL

REV. DATE: JULY 2024	REVISION 2
APPROVED BY: MM	DRAWN BY: ERAMOSA
STD. DWG. NUMBER: SPS-215	SCALE: Not to Scale