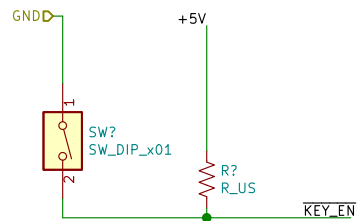
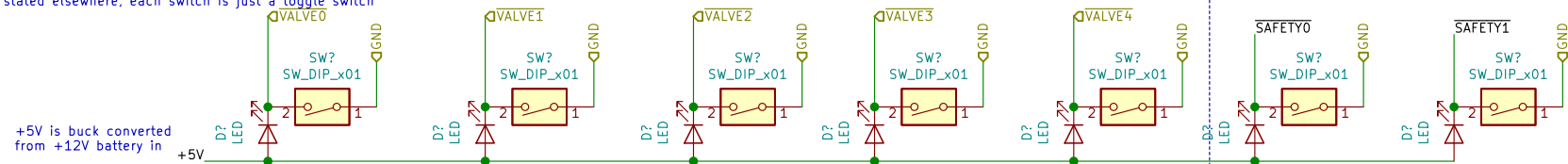
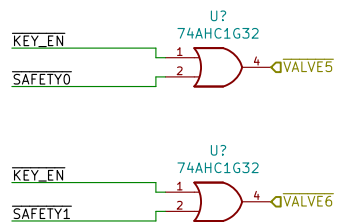


Details Omitted:
 There's a 555 timer to make the last 2 LEDs vibrate instead of remain steady when toggled on
 LEDs are dangerously shorted to power :)
 OR gates are shown, in reality they're Diode gates

Unless stated elsewhere, each switch is just a toggle switch



Here is where the key safety is implemented
 The switch in this box is not a toggle switch, but a physical key switch



Only make protected VALVE low if both the key is turned and the corresponding toggle switch is flipped

Switches in this box are fancier with red protective covering

These switches are considered "protected", and require the key to be turned

Switch box for Ares Ground
 (the box that is in the bunker with us)

Sheet: /switch_box/
 File: Switch Box.sch

Title:

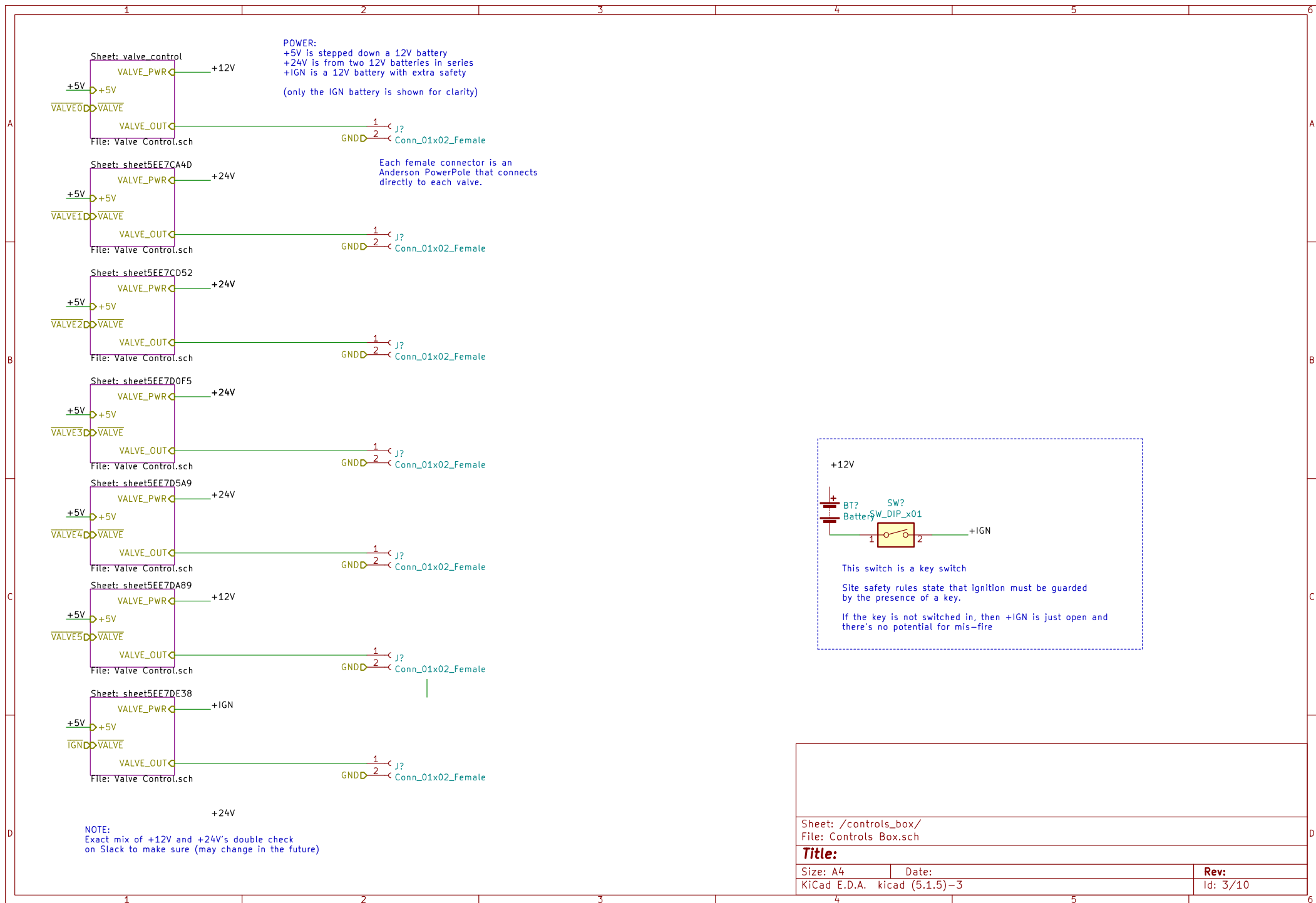
Size: A4

Date:

KiCad E.D.A. kicad (5.1.5)-3

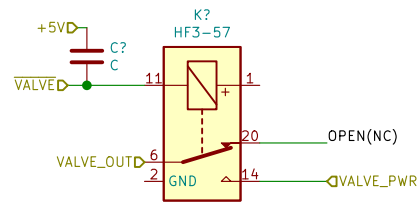
Rev:

Id: 2/10



Each VALVE signal is connected via a pullup capacitor to +5V

That way if the signal isn't pulled to GND, the valve will not receive power

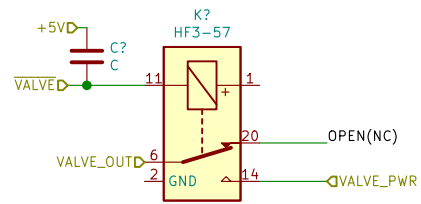


Valves are active low.
If VALVE is LOW, then VALVE_OUT is connected to VALVE_PWR
Else, VALVE_OUT is connected to nothing (OPEN)

Sheet: /controls_box/sheet5EE7CA4D/ File: Valve Control.sch		
Title:		
Size: A4	Date:	Rev:
KiCad E.D.A. kicad (5.1.5)-3		Id: 4/10

Each VALVE signal is connected via a pullup capacitor to +5V

That way if the signal isn't pulled to GND, the valve will not receive power

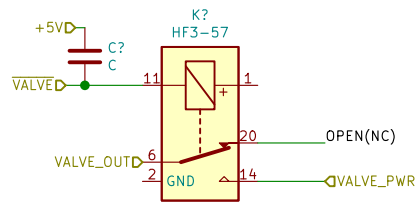


Valves are active low.
If VALVE is LOW, then VALVE_OUT is connected to VALVE_PWR
Else, VALVE_OUT is connected to nothing (OPEN)

Title:

Each VALVE signal is connected via a pullup capacitor to +5V

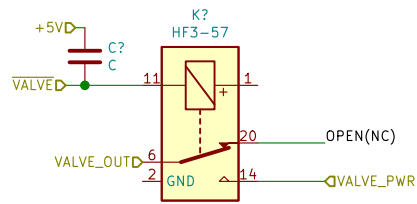
That way if the signal isn't pulled to GND, the valve will not receive power



Valves are active low.
If VALVE is LOW, then VALVE_OUT is connected to VALVE_PWR
Else, VALVE_OUT is connected to nothing (OPEN)

Each VALVE signal is connected via a pullup capacitor to +5V

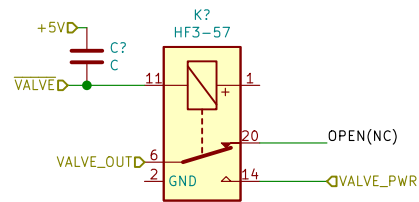
That way if the signal isn't pulled to GND, the valve will not receive power



Valves are active low.
If VALVE is LOW, then VALVE_OUT is connected to VALVE_PWR
Else, VALVE_OUT is connected to nothing (OPEN)

Each VALVE signal is connected via a pullup capacitor to +5V

That way if the signal isn't pulled to GND, the valve will not receive power



Valves are active low.
If VALVE is LOW, then VALVE_OUT is connected to VALVE_PWR
Else, VALVE_OUT is connected to nothing (OPEN)

Sheet: /controls_box/sheet5EE7DA89/
File: Valve Control.sch

Title:

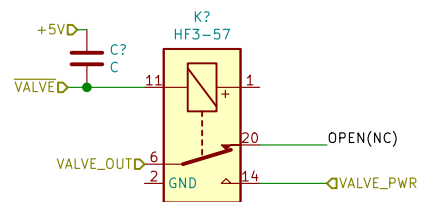
Size: A4
KiCad E.D.A. kicad (5.1.5)-3

Date:

Rev:
Id: 8/10

Each $\overline{\text{VALVE}}$ signal is connected via a pullup capacitor to +5V

That way if the signal isn't pulled to GND, the valve will not receive power



Valves are active low.
If VALVE is LOW, then VALVE_OUT is connected to VALVE_PWR
Else, VALVE_OUT is connected to nothing (OPEN)

Sheet: /controls_box/sheet5EE7DE38/
File: Valve Control.sch

Title:

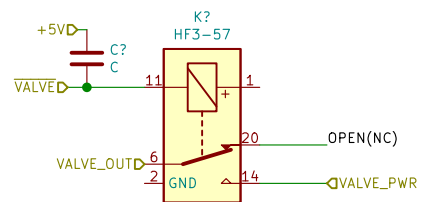
Size: A4
KiCad E.D.A. kicad (5.1.5)-3

Date:

Rev:
Id: 9/10

Each $\overline{\text{VALVE}}$ signal is connected via a pullup capacitor to +5V

That way if the signal isn't pulled to GND, the valve will not receive power



Valves are active low.
If VALVE is LOW, then VALVE_OUT is connected to VALVE_PWR
Else, VALVE_OUT is connected to nothing (OPEN)

Sheet: /controls_box/valve_control/
File: Valve Control.sch

Title:

Size: A4
KiCad E.D.A. kicad (5.1.5)-3

Date:

Rev:
Id: 10/10