MAYFLY WATER LEVEL SENSOR PARTS LIST AND WIRING

Parts List

| Key	Part	Cost
A	Mayfly Datalogger V. 1.1	$120.00
B	MaxBotix HRXL-MaxSonar-WR Series, Model MB7386 (10 m range; use other models if you need 1.5 or 5 m range)	$137.00
C	MaxBotix HR-MaxTemp attachment (for automated temperature corrections for sonar)	$3.40
D	Digi XBee XB2B-WFUT-001 or XB2B-WFST-001 wifi modem	$53.00
E	Pulse Electronics Antenna: RF ANT 2.4GHZ WHP TILT RP-SMA 5" DigiKey Part no. 553-1310-ND	$4.68
F	Grove 128x64 I2C OLED Board for Arduino and Raspberry Pi	$14.45
G	Junction Box, Zulkit Project Box IP65 Waterproof Dustproof ABS Plastic Electrical Boxes Electronic Enclosure Black 6.3 x 4.3 x 3.5 inch(160 x 110 x 90 mm)(Pack of 1)	$9.99
H	GROVE 4PIN CABLES 5PACK 20CM	$3.20
I	LiPo rechargeable battery with connector	$5.50
	Mokex, C-Grid crimp-on connectors	

WIRING AND CONSTRUCTION
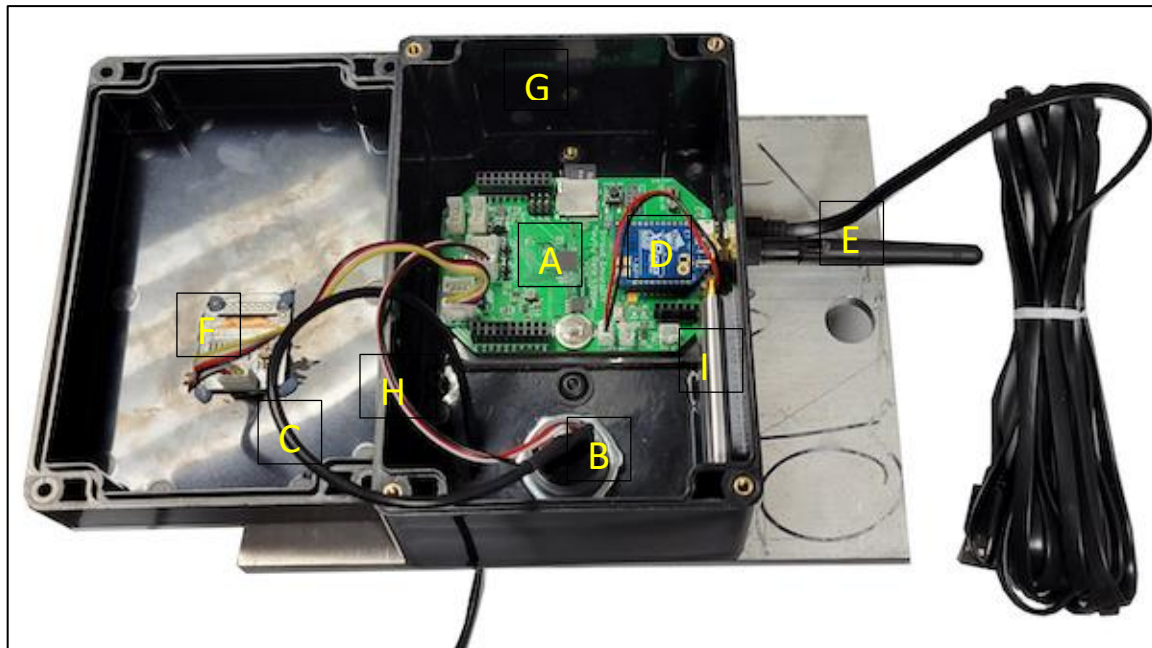
Sonar wiring in enclosure. The letters on the diagram here correspond to the "Key" column on the parts list. We have not included the extension cord on the right or the base plate (aluminum, on bottom). The OLED monitor (F) is not required. As shown here, it is hot-glued to a window in the enclosure, so you are seeing the back of it. It connects to the I2C hub on the Mayfly.
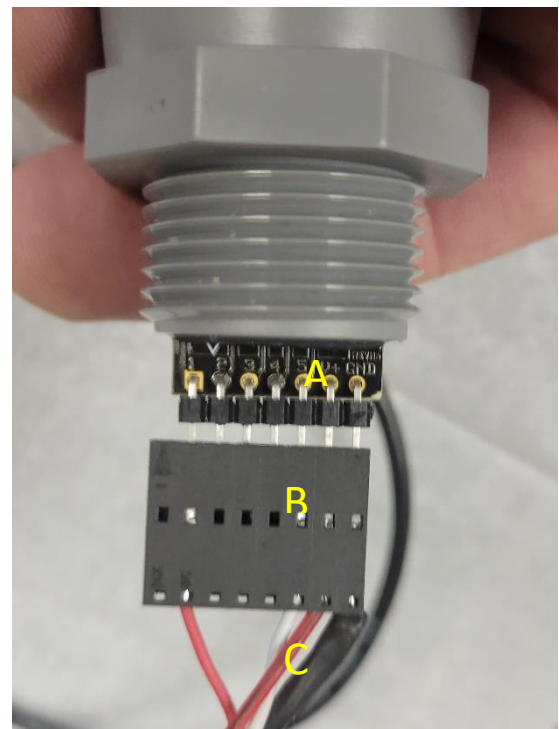
Side view shows the sonar cone projecting downward through the aluminum plate that attaches to the sump lid. The temperature sensor is also shown hanging down and to the left of the sonar cone.
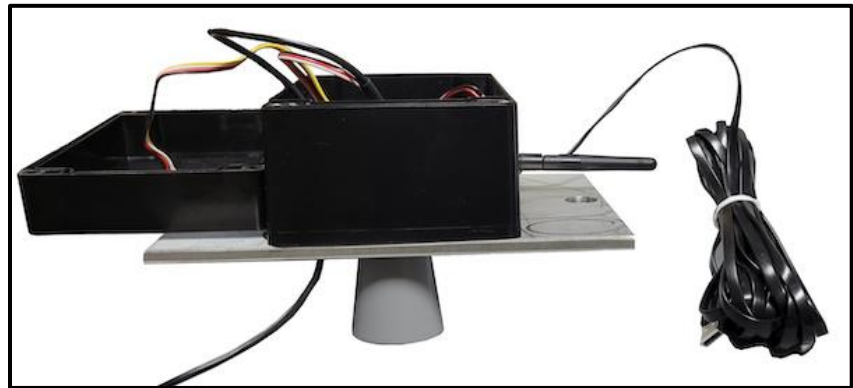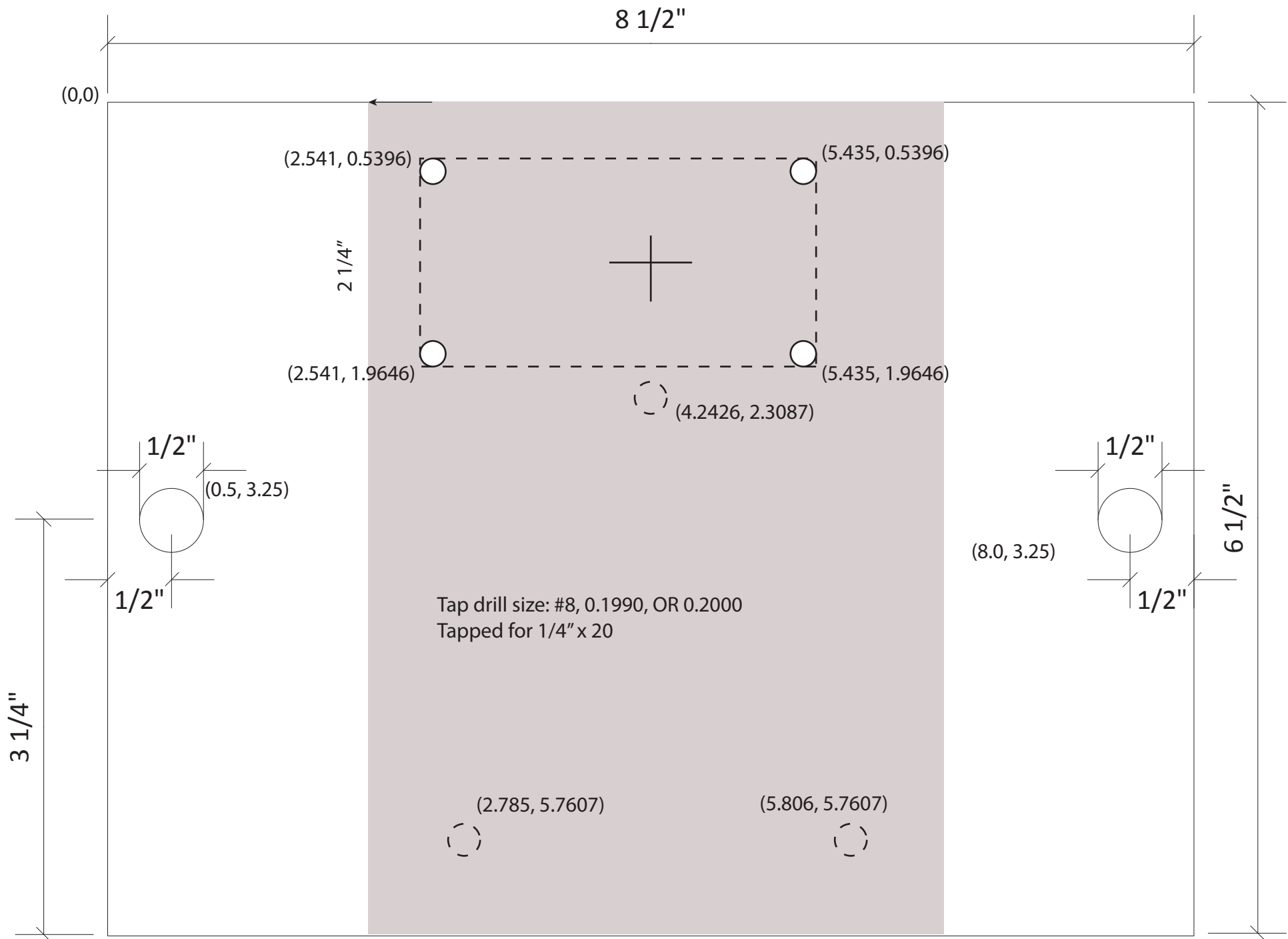
This diagram shows the wiring for the MaxBotix sonar and the MaxTemp sensor. Wiring shown here is on a Mayfly V. 0.5b. It will look identical on a V. 1.1 board.
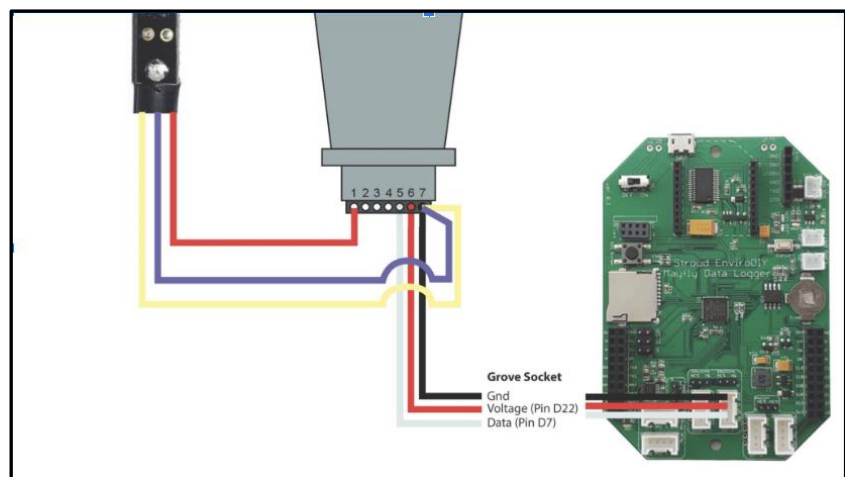
Connecting crimp-on wiring to the Maxbotix Sonar. We soldered a 90º angle header (A; male connectors) to the Sonar pins, then used a female plug-in header (B). Using the C-Grid crimp-on connectors, that lock into place on the header when inserted, we connected the wires as shown (C). Three wires need to connect to the ground pin, so we ran these into a wire-nut with a fourth lead wire that connected to the crimp connector and the header.

8 1/2"

(0,0)

(2.541, 0.5396) ○ ──────────── ○ (5.435, 0.5396)

2 1/4"

╋

(2.541, 1.9646) ○ ──────────── ○ (5.435, 1.9646)

(4.2426, 2.3087)

1/2"

(0.5, 3.25)

1/2"

1/2"

(8.0, 3.25)

6 1/2"

1/2"

Tap drill size: #8, 0.1990, OR 0.2000
Tapped for 1/4" x 20

3 1/4"

(2.785, 5.7607)   (5.806, 5.7607)

1/4" aluminum plate design for attaching sensors to our sump covers. Your design may be different.