Figure 4 – Flow Chart For Controller Functions
START

Button #1 Selected

Y
Engage Solenoid #1.

N
Disengage Solenoid #1.

Button #2 Selected

Y
Engage Solenoid #2.

N
Disengage Solenoid #2.

Button #3 Selected

Y
LCD out “Thank you for choosing selection 2.”
Sound buzzer.

N
LCD out “Sold out, make another selection.”
Sound buzzer.
Blink LED.

Start rake motor forward.

LOOP

Rake forward switch?

Y
Stop rake motor forward.
Start conveyor motor.

N

LOOP

Belt switch?

Y
Stop conveyor motor.
Start rake motor backwards.

N

LOOP

Rack backward switch?

Y
Stop rake motor backward.

N

RETURN
Software Flowchart

START

DEFINE I/O AND CONSTANTS

INITIALIZE I/O AND LCD

DISPLAY INITIAL LCD MESSAGE

HAS START SWITCH BEEN PUSHED?

NO

YES

GENERATE AND DISPLAY RANDOM NUMBER

IS RANDOM NUMBER < 255?

NO

YES

DIVIDE RANDOM NUMBER BY 255

DISPLAY BINARY NUMBER ON LED'S

A

DISPLAY NUMBERS ON LCD AS THEY ARE ENTERED

TURN ON SOUND EFFECT TO INDICATE WRONG ANSWER

NO

DO THE ENTERED NUMBERS MATCH THE RANDOM NUMBER?

YES

TURN ON MOTOR

IS MOTOR SENSOR SIGNAL HIGH?

NO

YES

TURN OFF MOTOR

END

Figure 20 Software Flowchart