

```
int L1i = LOW;
int L2i = LOW;
int L3i = LOW;
int L4i = LOW;
int L5i = LOW;
int L6i = LOW;
int L7i = LOW;
int L8i = LOW;
int L9i = LOW;
int L10i = LOW;
```

```
int P4 = 0;
int P7 = 0;
int P8 = 0;
int P9 = 0;
int So = 0;
String Rx;
```

```
void setup() {
  Serial.begin(19200);
  pinMode(2, INPUT);
  pinMode(3, INPUT);
  pinMode(4, INPUT);
  pinMode(5, INPUT);
  pinMode(6, INPUT);
  pinMode(7, INPUT);
  pinMode(8, INPUT);
  pinMode(9, INPUT);
  pinMode(10, INPUT);
  pinMode(11, INPUT);

  pinMode(A0, OUTPUT);
  pinMode(A1, OUTPUT);
  pinMode(A2, OUTPUT);
  pinMode(A3, OUTPUT);
  pinMode(A4, OUTPUT);
  pinMode(A5, OUTPUT);
}
```

```
void loop() {
  int L1 = digitalRead(2);
  int L2 = digitalRead(3);
  int L3 = digitalRead(4);
  int L4 = digitalRead(5);
  int L5 = digitalRead(6);
  int L6 = digitalRead(7);
  int L7 = digitalRead(8);
  int L8 = digitalRead(9);
  int L9 = digitalRead(10);
  int L10 = digitalRead(11);
```

```
// CJ is a signal prefix //
```

```

// P is a point prefix //
// So is a signal box switched out prefix //

// L6 = So (CJ switched IN or OUT. All other levers must be back.) //

if (L6 != L6i){
  if (L6 == HIGH){
    Serial.print(" CJ00 ONS");
    Serial.print('\n');
    Serial.print('\r');
    So = 1;
  } else{
    Serial.print(" CJ00 OFFS");
    Serial.print('\n');
    Serial.print('\r');
    So = 0;
  }
}

if(So==0){

  // L1 = CJ01 //

  if (L1 != L1i){
    if (L1 == HIGH){
      digitalWrite(A5, HIGH);
      Serial.print(" CJ01 GRNM");
      Serial.print('\n');
      Serial.print('\r');
    } else{
      digitalWrite(A5, LOW);
      Serial.print(" CJ01 REDM");
      Serial.print('\n');
      Serial.print('\r');
    }
  }

  // L2 = CJ02A //

  if (L2 != L2i && P4 == 0){
    if (L2 == HIGH){
      Serial.print(" CJ02A GRNM");
      Serial.print('\n');
      Serial.print('\r');
    } else{
      Serial.print(" CJ02A REDM");
      Serial.print('\n');
      Serial.print('\r');
    }
  }
}

```

```
// L2 = CJ02B //
```

```
if (L2 != L2i && P4 == 1){
  if (L2 == HIGH){
    Serial.print(" CJ02B YELM");
    Serial.print('\n');
    Serial.print('\r');
  } else{
    Serial.print(" CJ02B REDM");
    Serial.print('\n');
    Serial.print('\r');
  }
}
```

```
// L3 = CJ03 //
```

```
if (L3 != L3i){
  if (L3 == HIGH){
    Serial.print(" CJ03 YELM");
    Serial.print('\n');
    Serial.print('\r');
  } else{
    Serial.print(" CJ03 REDM");
    Serial.print('\n');
    Serial.print('\r');
  }
}
```

```
// L4 = P4 (point 4) //
```

```
if (L4 != L4i){
  if (L4 == HIGH){
    P4 = 1;
    if (L2==LOW){
      digitalWrite(A0, HIGH);
    }
  } else{
    P4 = 0;
    digitalWrite(A0, LOW);
  }
}
```

```
// L7 = P7 (point 7) //
```

```
if (L7 != L7i && P8 == 0){
  if (L7 == HIGH){
    Serial.print(" CJ09 WHTM");
    Serial.print('\n');
    Serial.print('\r');
    P7 = 1;
    if(L9==LOW){
```

```

    digitalWrite(A1, HIGH);
  }
} else{
  Serial.print(" CJ09 BLKM");
  Serial.print('\n');
  Serial.print('\r');
  P7 = 0;
  //if(L9==LOW){
    digitalWrite(A1, LOW);
  //}
}
}
}

```

```

// L9 = CJ09 //

```

```

if (L9 != L9i && P7 == 0){
  if (L9 == HIGH){
    Serial.print(" CJ09 GRNM");
    Serial.print('\n');
    Serial.print('\r');
    delay(100);
    Serial.print(" CJ11 GRNM");
    Serial.print('\n');
    Serial.print('\r');
  } else{
    Serial.print(" CJ09 REDM");
    Serial.print('\n');
    Serial.print('\r');
    delay(100);
    Serial.print(" CJ11 YELM");
    Serial.print('\n');
    Serial.print('\r');
  }
}
}

```

```

// L9 = CJ09 with Feather //

```

```

if (L9 != L9i && P7 == 1){
  if (L9 == HIGH){
    Serial.print(" CJ09 YELM");
    Serial.print('\n');
    Serial.print('\r');
    delay(100);
    Serial.print(" CJ11 GRNM");
    Serial.print('\n');
    Serial.print('\r');
  } else{
    Serial.print(" CJ09 REDM");
    Serial.print('\n');
    Serial.print('\r');
    delay(100);
    Serial.print(" CJ11 YELM");
  }
}
}

```

```

    Serial.print('\n');
    Serial.print('\r');
}
}

// L8 = P8 (point 8) //

if (L8 != L8i && P7 == 0){
  if (L8 == HIGH){
    Serial.print(" CJ10 BLK2M");
    Serial.print('\n');
    Serial.print('\r');
    delay(100);
    Serial.print(" CJ10 WHT1M");
    Serial.print('\n');
    Serial.print('\r');
    P8 = 1;
    if(L9==LOW && L10==LOW){
      digitalWrite(A2, HIGH);
    }
    //P9 = 1;
  } else{
    Serial.print(" CJ10 BLK1M");
    Serial.print('\n');
    Serial.print('\r');
    delay(100);
    Serial.print(" CJ10 BLK2M");
    Serial.print('\n');
    Serial.print('\r');
    P8 = 0;
    //if(L9==LOW && L10==LOW){
      digitalWrite(A2, LOW);
    //}
  }
}

if (L8 == 0 && P8 == 1){
  Serial.print(" CJ10 BLK1M");
  Serial.print('\n');
  Serial.print('\r');
  delay(100);
  Serial.print(" CJ10 BLK2M");
  Serial.print('\n');
  Serial.print('\r');
  P8 = 0;
  //if(L9==LOW && L10==LOW){
    digitalWrite(A1, LOW);
    digitalWrite(A2, LOW);
  //}
}

// L7 = P7 & L8 = P8 (point 7 & 8 ON) //

```

```

if (L8 != L8i && P7 == 1 && P8 == 0){    // && P8 == 0
  if (L8 == HIGH){
    Serial.print(" CJ09 BLKM");
    Serial.print('\n');
    Serial.print('\r');
    delay(100);
    Serial.print(" CJ10 BLK1M");
    Serial.print('\n');
    Serial.print('\r');
    //if(L9==LOW){
      digitalWrite(A1, LOW);
    //}
    delay(100);
    Serial.print(" CJ10 WHT2M");
    Serial.print('\n');
    Serial.print('\r');
    P8 = 1;
    if(L9==LOW && L10==LOW){
      digitalWrite(A1, HIGH);
      digitalWrite(A2, HIGH);
    }
  } else{
    Serial.print(" CJ10 BLK2M");
    Serial.print('\n');
    Serial.print('\r');
    P8 = 0;
    //if(L9==LOW && L10==LOW){
      digitalWrite(A2, LOW);
    //}
  }
}

```

```

// L10 = CJ10 //

```

```

if (L10 != L10i && P8 == 0){
  if (L10 == HIGH){
    Serial.print("CJ10 GRNM");
    Serial.print('\n');
    Serial.print('\r');
    delay(100);
    Serial.print("CJ12 GRNM");
    Serial.print('\n');
    Serial.print('\r');
  } else{
    Serial.print("CJ10 REDM");
    Serial.print('\n');
    Serial.print('\r');
    delay(100);
    Serial.print("CJ12 YELM");
    Serial.print('\n');
    Serial.print('\r');
  }
}

```

```

    }
}

// L10 = CJ10 with lower feather //

if (L10 != L10i && P8 == 1){
    if (L10 == HIGH){
        Serial.print(" CJ10 YELM");
        Serial.print('\n');
        Serial.print('\r');
        delay(100);
        Serial.print(" CJ12 GRNM");
        Serial.print('\n');
        Serial.print('\r');
    } else{
        Serial.print(" CJ10 REDM");
        Serial.print('\n');
        Serial.print('\r');
        delay(100);
        Serial.print(" CJ12 YELM");
        Serial.print('\n');
        Serial.print('\r');
    }
}

// L7 & L8 ON for platform road //

// L10 = CJ10 with upper feather //

if (L10 != L10i && P7 == 1 && P8 == 1){
    if (L10 == HIGH){
        Serial.print(" CJ10 YELM");
        Serial.print('\n');
        Serial.print('\r');
        delay(100);
        Serial.print(" CJ12 GRNM");
        Serial.print('\n');
        Serial.print('\r');
    } else{
        Serial.print(" CJ10 REDM");
        Serial.print('\n');
        Serial.print('\r');
        delay(100);
        Serial.print(" CJ12 YELM");
        Serial.print('\n');
        Serial.print('\r');
    }
}

L1i = L1;
L2i = L2;
L3i = L3;

```

```

L4i = L4;
L5i = L5;
L6i = L6;
L7i = L7;
L8i = L8;
L9i = L9;
L10i = L10;

// SERIAL PORT STUFF//

if (Serial.available() > 0) {
{
Rx = Serial.readStringUntil('\r');
if (Rx == "L1") {
//delay(100);
Serial.print(" L1 = ");
Serial.print(L1);
Serial.print('\n');
Serial.print('\r');
}

//if (So==1) {

if (Rx == "L4ONM") {
digitalWrite(A0, HIGH);
Serial.print(" L4ONS");
Serial.print('\n');
Serial.print('\r');
}

if (Rx == "L4OFFM") {
digitalWrite(A0, LOW);
Serial.print(" L4OFFS");
Serial.print('\n');
Serial.print('\r');
}

if (Rx == "L7ONM") {
digitalWrite(A1, HIGH);
Serial.print(" L7ONS");
Serial.print('\n');
Serial.print('\r');
}

if (Rx == "L7OFFM") {
digitalWrite(A1, LOW);
Serial.print(" L7OFFS");
Serial.print('\n');
Serial.print('\r');
}

if (Rx == "L8ONM") {

```

```
digitalWrite(A2, HIGH);  
Serial.print(" L8ONS");  
Serial.print('\n');  
Serial.print('\r');  
}
```

```
if (Rx == "L8OFFM") {  
    digitalWrite(A2, LOW);  
    Serial.print(" L8OFFS");  
    Serial.print('\n');  
    Serial.print('\r');  
}
```

```
// }
```

```
}
```

```
}
```

```
}
```