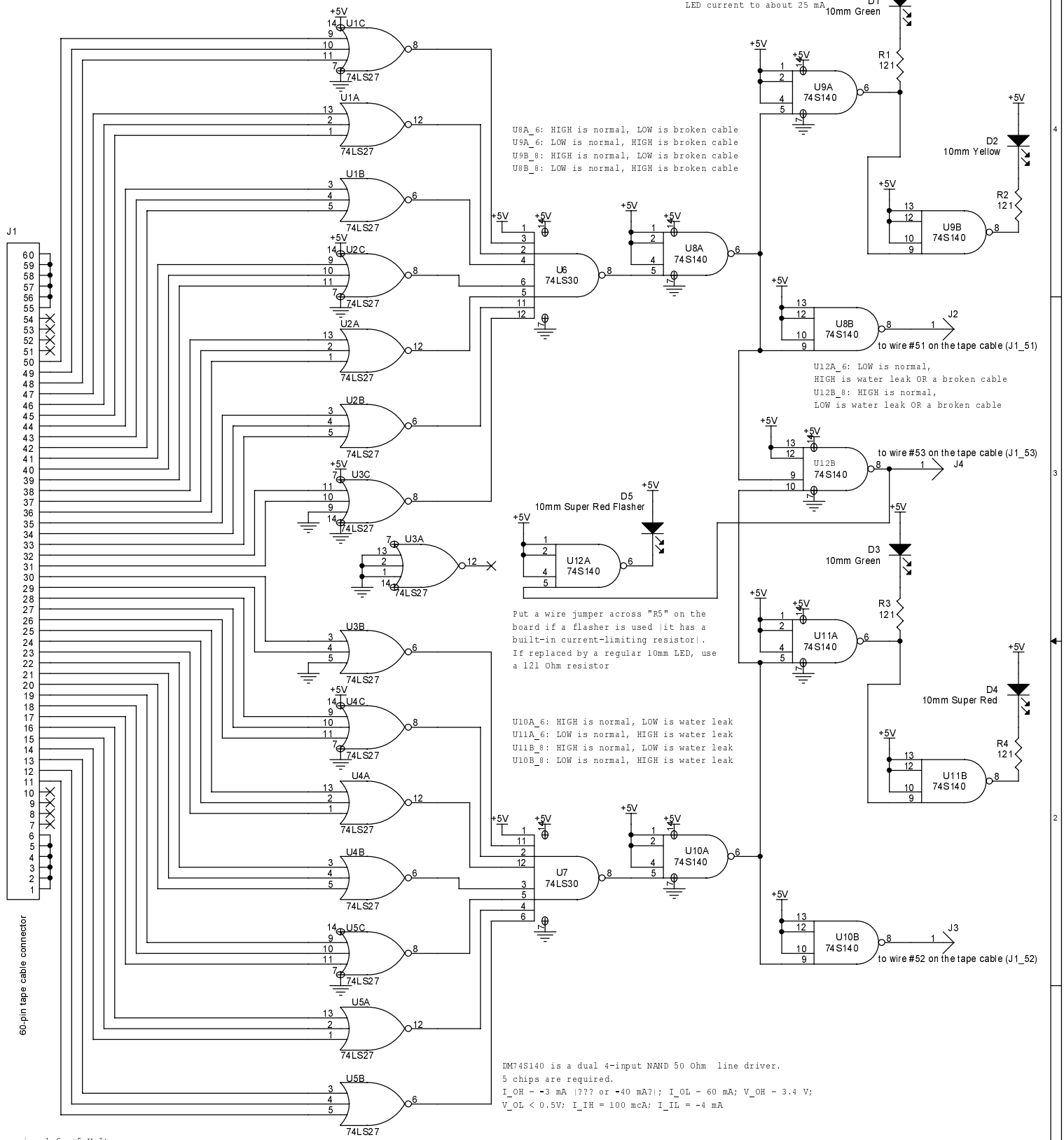


Put a 100 nF bypass capacitor between power pins of all ICs

LEDs have a 10 mm diffused lens  
The 121 Ohm resistors limit  
LED current to about 25 mA, 10mm Green



U8A\_6: HIGH is normal, LOW is broken cable  
U9A\_6: LOW is normal, HIGH is broken cable  
U9B\_8: HIGH is normal, LOW is broken cable  
U8B\_8: LOW is normal, HIGH is broken cable

U12A\_6: LOW is normal,  
HIGH is water leak OR a broken cable  
U12B\_8: HIGH is normal,  
LOW is water leak OR a broken cable

Put a wire jumper across "R5" on the board if a flasher is used [it has a built-in current-limiting resistor]. If replaced by a regular 10mm LED, use a 121 Ohm resistor

U10A\_6: HIGH is normal, LOW is water leak  
U11A\_6: LOW is normal, HIGH is water leak  
U11B\_8: HIGH is normal, LOW is water leak  
U10B\_8: LOW is normal, HIGH is water leak

DM74S140 is a dual 4-input NAND 50 Ohm line driver.  
5 chips are required.  
I<sub>OH</sub> - -3 mA [??? or -40 mA?]; I<sub>OL</sub> - 60 mA; V<sub>OH</sub> - 3.4 V;  
V<sub>OL</sub> < 0.5V; I<sub>IH</sub> = 100 mcA; I<sub>IL</sub> = -4 mA

pins 1-6: +5 Volts  
pins 55-60: 0 Volts  
pins 7-10 and 51-54: reserved  
pins 11-30: water leak condition [high, ~3.4V]  
pins 31-50: broken cable condition [high, ~5.0V]

74LS27 is a triple 3-input NOR gate. 5 chips are required  
Input: all LOW is the normal condition, even one HIGH is trouble  
Output: all HIGH is the normal condition, even one LOW is trouble  
I<sub>OH</sub> - -0.4 mA; I<sub>OL</sub> - 8 mA; V<sub>OH</sub> - 3.4 V; V<sub>OL</sub> - 0.35V;  
I<sub>IH</sub> - 20 mcA; I<sub>IL</sub> - -0.36 mA

74LS30 is a single 8-input NAND gate. 2 chips are required  
Input: see 74LS27 output above  
Output: LOW is the normal condition; HIGH is trouble  
I<sub>OH</sub> - -0.4 mA; I<sub>OL</sub> - 8 mA; V<sub>OH</sub> - 3.4 V; V<sub>OL</sub> - 0.35V;  
I<sub>IH</sub> - 20 mcA; I<sub>IL</sub> - -0.4 mA

File		
Schematic diagram for DIRC water leak logic card ("Card #2")		
Size	Document Number	Rev
Custom	Created by Sasha Telnov (avteinov@lbi.gov)	1.2
Date:	Thursday, September 10, 1998	Sheet 1 of 1