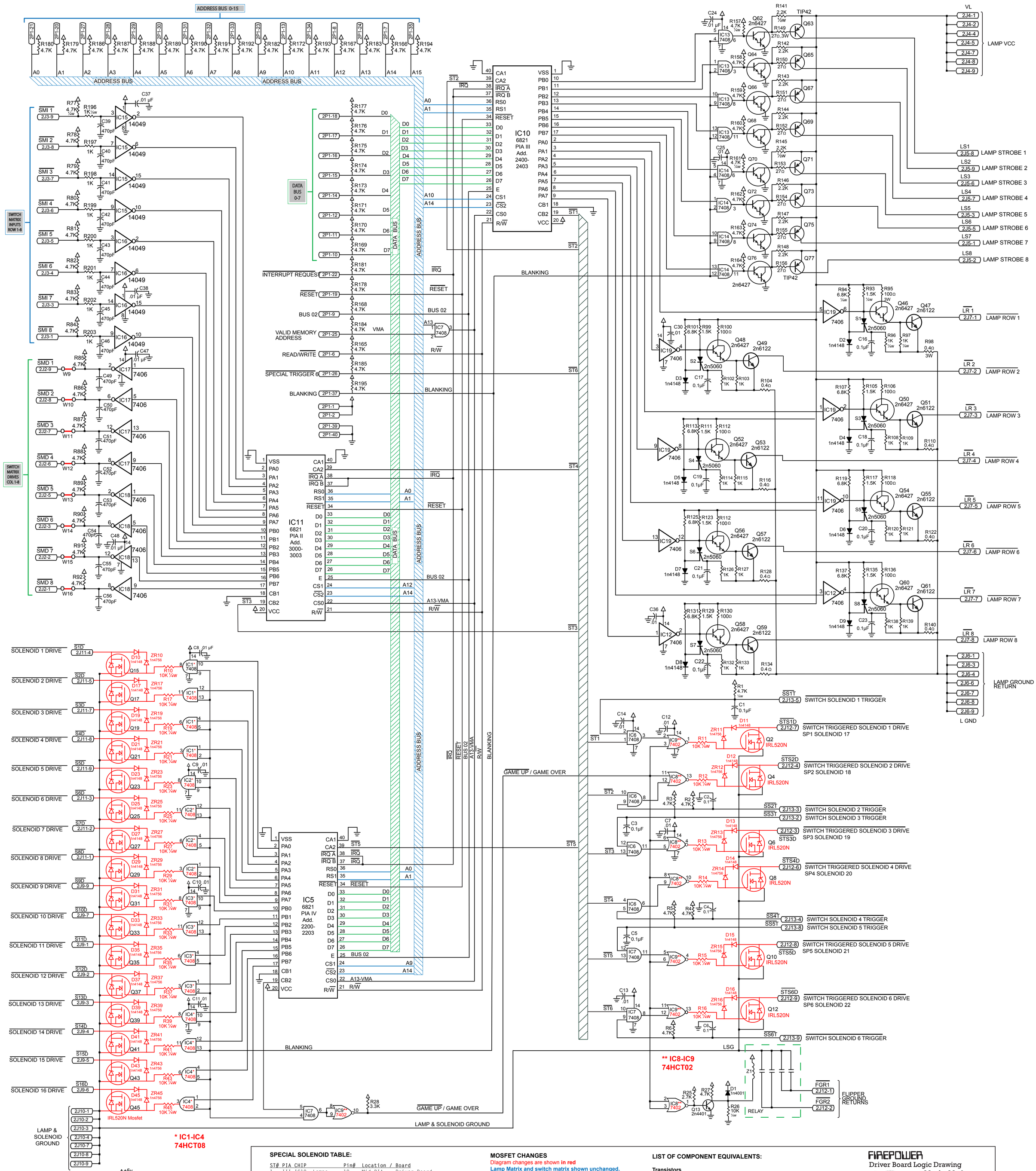

SPECIAL SOLENOID TABLE:

ST#	PIA	CHIP		Pin#	Location / Board	
1	III	IC10	Lamps	19	Mid PIA	Driver Board
2	III	IC10	Lamps	39	Mid PIA	Driver Board
3	II	IC11	SW Matrix	19	Left PIA	Driver Board
4	II	IC11	SW Matrix	39	Left PIA	Driver Board
5	IV	IC 5	Solenoids	39	Right PIA	Driver Board
6	I	IC18	Displays	19	Via 1J1-26	CPU Board

IMPORTANT Note:
System 7 (Black Knight and later games) used 0 ohm resitors or wire jumpers on the Switch Matrix Drive. The positions are W9 to W16 on the above diagram System 6 (Alien Poker, Firepower and earlier games) used 330 ohm resistors in the same 8 locations, and they were called R204-R211.
In all other respects the driver boards are identical.

MOSFET CHANGES
Diagram changes are shown **in red**
Lamp Matrix and switch matrix shown unchanged.
TIP42 transistors in lamp matrix can be replaced with 8 x IRF9z34N mosfets, which are pin compatible.

New Parts Needed
IRL520N ***N-Channel Mosfet*** or MTP10N10EL (On Semi)
10K Resistor, ¼w
1n4656A ***47v 1W Zener*** *Diodes (example: Vishay)*
1n4148 ***Fast Switching Diode***
NEED TO USE 74HCT08 IC chips (and sockets) for ICs 1-4* which trigger Solenoids 1-16, and **74HCT02** IC chips (and sockets) for ICs 8 & 9** which trigger the Special Solenoids 1-6.

LIST OF COMPONENT EQUIVALENTS:

Transistors
2n4401 ***NPN Transistor*** = 2n3904
2n6427 ***NPN Darlington*** = MPSA14 (NTE46)
2n6122 ***NPN Power*** = TIP41C or 2n5296
2n5060 ***SCR*** = 2n5061 (NTE5400)

Integrated Circuits
MC14049 ***Inverting Hex Buffer*** = 4049
6820 / 6821 ***PIA*** = xx6821, xx68A21, xx68B21, xx can be MC (Motorola) or HD (Hitachi Data), also G65SC21P (CMD).

FIREPOWER
Driver Board Logic Drawing
+ Mosfet Mod
(System 4-7)

www.firepowerpinball.com

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