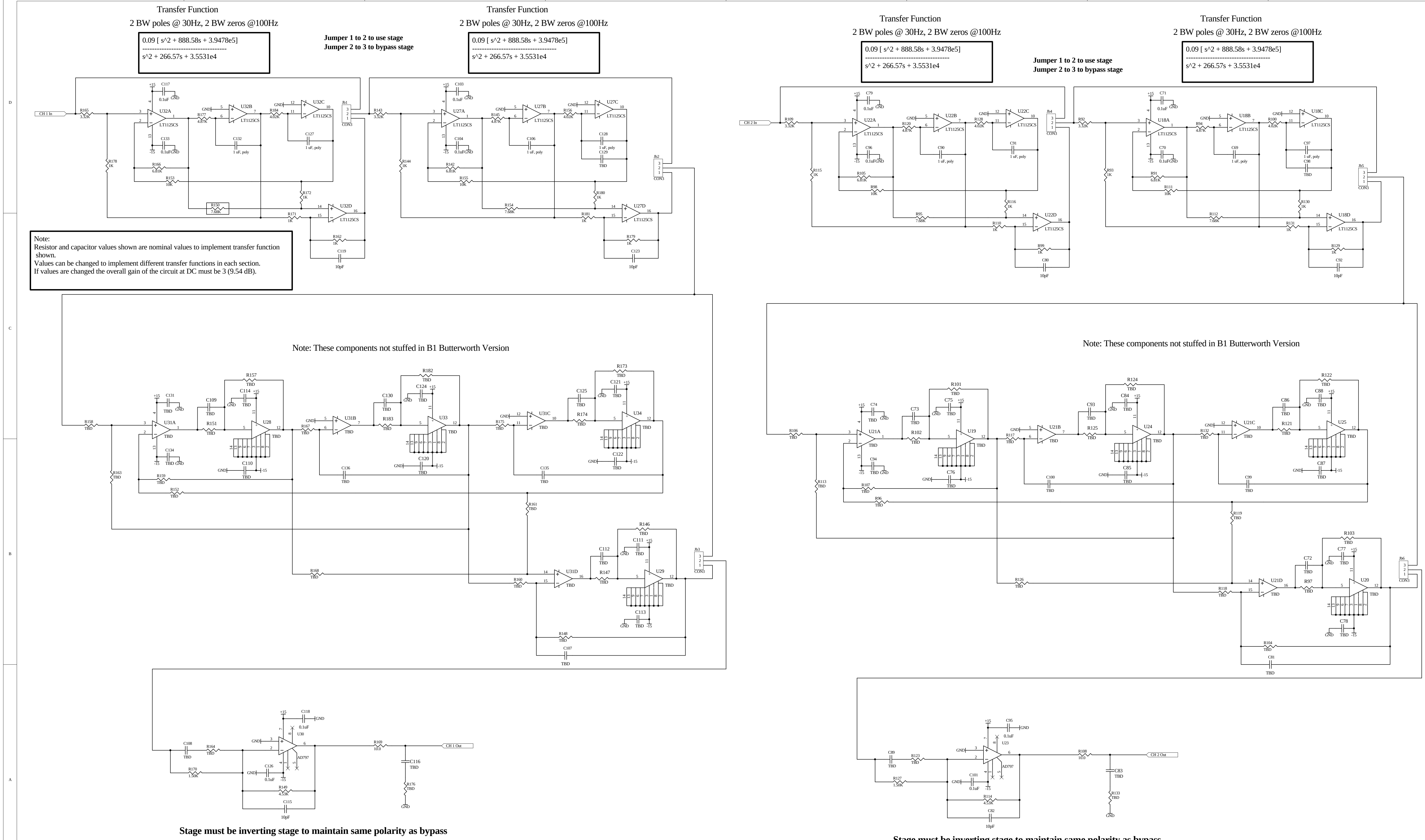
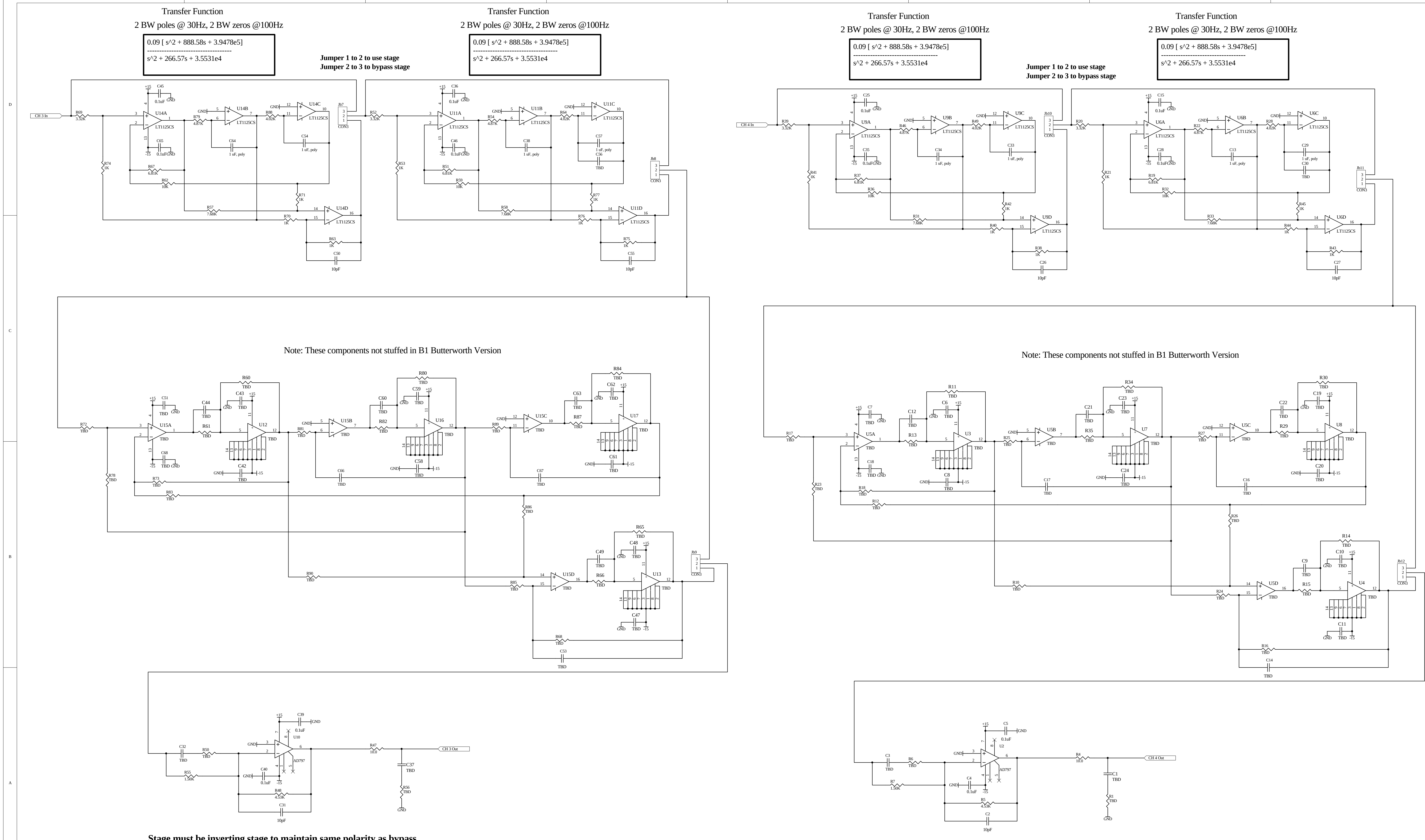
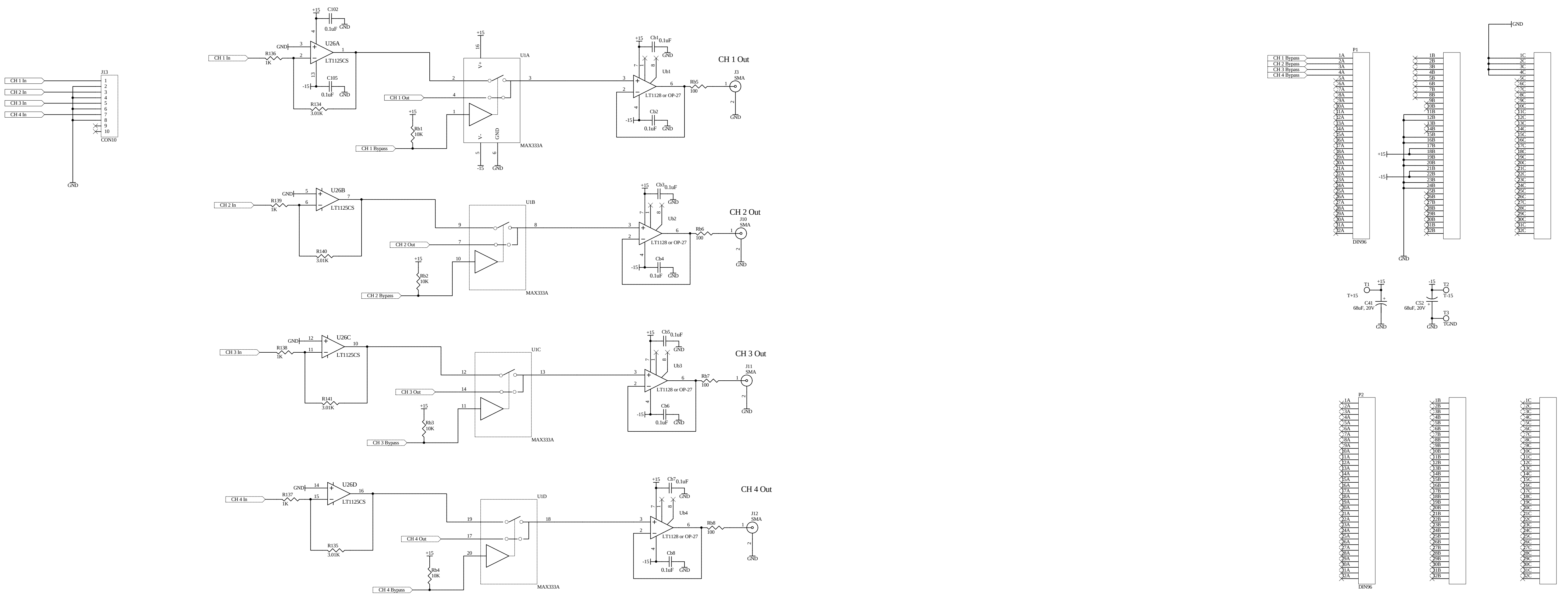

Transfer Function
2 BW poles @ 30Hz, 2 BW zeros @100Hz
0.09 [s^2 + 888.58s + 3.9478e5]
s^2 + 266.57s + 3.5531e4
Jumper 1 to 2 to use stage
Jumper 2 to 3 to bypass stage
CH 1 In
CH 2 In
CH 1 Out
CH 2 Out
Note:
Resistor and capacitor values shown are nominal values to implement transfer function shown.
Values can be changed to implement different transfer functions in each section.
If values are changed the overall gain of the circuit at DC must be 3 (9.54 dB).
Note: These components not stuffed in B1 Butterworth Version
Stage must be inverting stage to maintain same polarity as bypass

Title: *Universal Dewhitening Filter (Butterworth)*		*LIGO Laboratory, California Institute of Technology, Massachusetts Institute of Technology*	LIGO
Size: D	DCC Number: D000183	SCH / PCB Revision: B2/B	Engineer: *J. Heefner*
File: E:\h\cad\ligo\users\jay\UnivDewhite\RevB1_butter\UnivDewhiteRevB1butter1.Sch		Date: 27-Feb-2002 Time: 10:10:27	Sheet 1 of 3



Title: *Universal Dewhitening Filter (Butterworth)*		*LIGO Laboratory* *California Institute of Technology* *Massachusetts Institute of Technology*	LIGO
Size: D	DCC Number: D000183	SCH / PCB Revision: B2/B	Engineer: *J. Heefner*
File: E:\h\cad\ligo\users\jay\UnivDewhite\RevB1_butter\UnivDewhiteRevB1butter2.Sch			Date: 27-Feb-2002 Time: 10:10:37 Sheet 2 of 3



Revision	Description of Change	Date
A	Initial release	5/00
A1	1. Added note about RevA1 upgrade board. 2. Changed R134, R135, R140, R141 to 3.01K	1/01
B	1. Added jumpers JbX to selectively jumper individual filter sections. 2. Added output buffer amps UbX to each channel. 3. All components added for Rev B have a "b" in the designator. 4. Removed output jumpers J1, J2, J4, J5, J6, J7, J8, J9. 5. Added test points for power connection.	3/01
B1	1. Changed componet values to have two sections w/ 2 ea butterworth poles at 30 Hz and 2 ea. butterworth zeros at 100 Hz to allow for easier lock acquisition of IFO.	4/01
B2	Changed AD829 to LT1128 or OP27 (Ub1, Ub2, Ub3, Ub4)	2/02

Title: ***Universal Dewhitening Filter (Butterworth)***

LIGO Laboratory
California Institute of Technology
Massachusetts Institute of Technology

LIGO

Size: D | DCC Number: D000183 | SCH / PCB Revision: B2/B | Engineer: *J. Heefner*

Date: 27-Feb-2002
Time: 10:10:45

File: E:\h\cad\ligo\users\jay\UnivDewhite\RevB1_butter\UnivDewhiteRevB1butter3.Sch

Sheet 3 of 3

UnivDewhiteRevB1butter1
UnivDewhiteRevB1butter1.Sch

- CH 1 In
- CH 1 Out
- CH 2 In
- CH 2 Out

UnivDewhiteRevB1butter2
UnivDewhiteRevB1butter2.Sch

- CH 3 In
- CH 3 Out
- CH 4 In
- CH 4 Out

UnivDewhiteRevB1butter3
UnivDewhiteRevB1butter3.Sch

- CH 1 Out
- CH 1 In
- CH 2 In
- CH 3 In
- CH 4 In
- CH 1 Bypass
- CH 1 In
- CH 2 Out
- CH 2 Bypass
- CH 2 In
- CH 3 Out
- CH 3 Bypass
- CH 3 In
- CH 4 Out
- CH 4 Bypass
- CH 4 In
- CH 1 Bypass
- CH 2 Bypass
- CH 3 Bypass
- CH 4 Bypass

Title: ***Universal Dewhitening Filter (Butterworth)***			*LIGO Laboratory* *California Institute of Technology* *Massachusetts Institute of Technology* LIGO
Size: B	DCC Number: D000183	SCH / PCB Revision: B2/B	Engineer: *J. Heefner*
File: E:\h\cad\ligo\users\jay\UnivDewhite\RevB1_butter\UnivDewhiteRevB1_butter.prj			Date: 27-Feb-2002 Time: 10:10:20 Sheet 0 of 1