```
SUBDESIGN wirbuf
(
    write_en, write_clk, reset  : INPUT;
    lvl1ad[1..0]        : INPUT;
    lvl2ad[3..0]        : INPUT;
    wire_in[26..0]      : INPUT;
    wire_out[26..0]     : OUTPUT;
)
VARIABLE
    load1_4: MACHINE WITH STATES (S0,S1,S2,S3);
    page0[107..0]   :dffe;
    page1[107..0]   :dffe;
    page2[107..0]   :dffe;
    page3[107..0]   :dffe;

BEGIN
    page0[107..0].clk = !write_clk;
    page1[107..0].clk = !write_clk;
    page2[107..0].clk = !write_clk;
    page3[107..0].clk = !write_clk;
    load1_4.clk = !write_clk;
    load1_4.reset = reset;
    page0[107..0].clrn = !reset;
    page1[107..0].clrn = !reset;
    page2[107..0].clrn = !reset;
    page3[107..0].clrn = !reset;

    CASE lvl2ad[3..0] IS
        WHEN b"0000" =>
            wire_out[]=page0[26..0];
        WHEN b"0001" =>
            wire_out[]=page0[53..27];
        WHEN b"0010" =>
            wire_out[]=page0[80..54];
        WHEN b"0011" =>
            wire_out[]=page0[107..81];

        WHEN b"0100" =>
            wire_out[]=page1[26..0];
        WHEN b"0101" =>
            wire_out[]=page1[53..27];
        WHEN b"0110" =>
            wire_out[]=page1[80..54];
        WHEN b"0111" =>
            wire_out[]=page1[107..81];

        WHEN b"1000" =>
            wire_out[]=page2[26..0];
        WHEN b"1001" =>
            wire_out[]=page2[53..27];
        WHEN b"1010" =>
            wire_out[]=page2[80..54];
        WHEN b"1011" =>
            wire_out[]=page2[107..81];

        WHEN b"1100" =>
            wire_out[]=page3[26..0];
        WHEN b"1101" =>
            wire_out[]=page3[53..27];
        WHEN b"1110" =>
            wire_out[]=page3[80..54];
        WHEN b"1111" =>
            wire_out[]=page3[107..81];
```

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END CASE;

CASE load1_4 IS
    WHEN S0 =>
    if write_en then
        CASE lvl1ad[] IS
            WHEN b"00" =>
                page0[26..0].d=wire_in[];
                page0[26..0].ena=vcc;
                page0[107..27].ena=gnd;
                page1[107..0].ena=gnd;
                page2[107..0].ena=gnd;
                page3[107..0].ena=gnd;
            WHEN b"01" =>
                page1[26..0].d=wire_in[];
                page1[26..0].ena=vcc;
                page1[107..27].ena=gnd;
                page0[107..0].ena=gnd;
                page2[107..0].ena=gnd;
                page3[107..0].ena=gnd;
            WHEN b"10" =>
                page2[26..0].d=wire_in[];
                page2[26..0].ena=vcc;
                page2[107..27].ena=gnd;
                page1[107..0].ena=gnd;
                page0[107..0].ena=gnd;
                page3[107..0].ena=gnd;
            WHEN b"11" =>
                page3[26..0].d=wire_in[];
                page3[26..0].ena=vcc;
                page3[107..27].ena=gnd;
                page1[107..0].ena=gnd;
                page2[107..0].ena=gnd;
                page0[107..0].ena=gnd;
        END CASE;

        load1_4 = s1;
    else
        load1_4 = s0;
    end if;

    WHEN S1 =>
        CASE lvl1ad[] IS
            WHEN b"00" =>
                page0[53..27].d=wire_in[];
                page0[53..27].ena=vcc;
                page0[26..0].ena=gnd;
                page0[107..54].ena=gnd;
                page1[107..0].ena=gnd;
                page2[107..0].ena=gnd;
                page3[107..0].ena=gnd;
            WHEN b"01" =>
                page1[53..27].d=wire_in[];
                page1[53..27].ena=vcc;
                page1[26..0].ena=gnd;
                page1[107..54].ena=gnd;
                page0[107..0].ena=gnd;
                page2[107..0].ena=gnd;
                page3[107..0].ena=gnd;
            WHEN b"10" =>
                page2[53..27].d=wire_in[];
                page2[53..27].ena=vcc;
                page2[26..0].ena=gnd;
                page2[107..54].ena=gnd;
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            page1[107..0].ena=gnd;
            page0[107..0].ena=gnd;
            page3[107..0].ena=gnd;
        WHEN b"11" =>
            page3[53..27].d=wire_in[];
            page3[53..27].ena=vcc;
            page3[26..0].ena=gnd;
            page3[107..54].ena=gnd;
            page1[107..0].ena=gnd;
            page2[107..0].ena=gnd;
            page0[107..0].ena=gnd;
    END CASE;
    load1_4 = s2;
WHEN S2 =>
    CASE lvl1ad[] IS
        WHEN b"00" =>
            page0[80..54].d=wire_in[];
            page0[80..54].ena=vcc;
            page0[53..0].ena=gnd;
            page0[107..81].ena=gnd;
            page1[107..0].ena=gnd;
            page2[107..0].ena=gnd;
            page3[107..0].ena=gnd;
        WHEN b"01" =>
            page1[80..54].d=wire_in[];
            page1[80..54].ena=vcc;
            page1[53..0].ena=gnd;
            page1[107..81].ena=gnd;
            page0[107..0].ena=gnd;
            page2[107..0].ena=gnd;
            page3[107..0].ena=gnd;
        WHEN b"10" =>
            page2[80..54].d=wire_in[];
            page2[80..54].ena=vcc;
            page2[53..0].ena=gnd;
            page2[107..81].ena=gnd;
            page1[107..0].ena=gnd;
            page0[107..0].ena=gnd;
            page3[107..0].ena=gnd;
        WHEN b"11" =>
            page3[80..54].d=wire_in[];
            page3[80..54].ena=vcc;
            page3[53..0].ena=gnd;
            page3[107..81].ena=gnd;
            page1[107..0].ena=gnd;
            page2[107..0].ena=gnd;
            page0[107..0].ena=gnd;
    END CASE;
    load1_4 = s3;
WHEN S3 =>
    CASE lvl1ad[] IS
        WHEN b"00" =>
            page0[107..81].d=wire_in[];
            page0[107..81].ena=vcc;
            page0[80..0].ena=gnd;
            page1[107..0].ena=gnd;
            page2[107..0].ena=gnd;
            page3[107..0].ena=gnd;
        WHEN b"01" =>
            page1[107..81].d=wire_in[];
            page1[107..81].ena=vcc;
            page1[80..0].ena=gnd;
            page0[107..0].ena=gnd;
            page2[107..0].ena=gnd;
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```
                    page3[107..0].ena=gnd;
                WHEN b"10" =>
                    page2[107..81].d=wire_in[];
                    page2[107..81].ena=vcc;
                    page2[80..0].ena=gnd;
                    page1[107..0].ena=gnd;
                    page0[107..0].ena=gnd;
                    page3[107..0].ena=gnd;
                WHEN b"11" =>
                    page3[107..81].d=wire_in[];
                    page3[107..81].ena=vcc;
                    page3[80..0].ena=gnd;
                    page1[107..0].ena=gnd;
                    page2[107..0].ena=gnd;
                    page0[107..0].ena=gnd;
            END CASE;
            load1_4 = s0;
    END CASE;
END;
```