



FIGURE 4.46 The pipelined datapath of Figure 4.41 with the control signals identified. This datapath borrows the control logic for PC source, register destination number, and ALU control from Section 4.4. Note that we now need the 6-bit funct field (function code) of the instruction in the EX stage as input to ALU control, so these bits must also be included in the ID/EX pipeline register. Recall that these 6 bits are also the 6 least significant bits of the immediate field in the instruction, so the ID/EX pipeline register can supply them from the immediate field since sign extension leaves these bits unchanged.