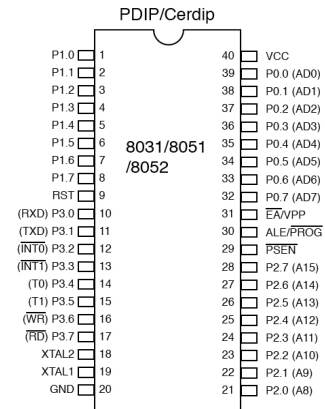


# 8051 Microcontroller: External Memory Interfacing



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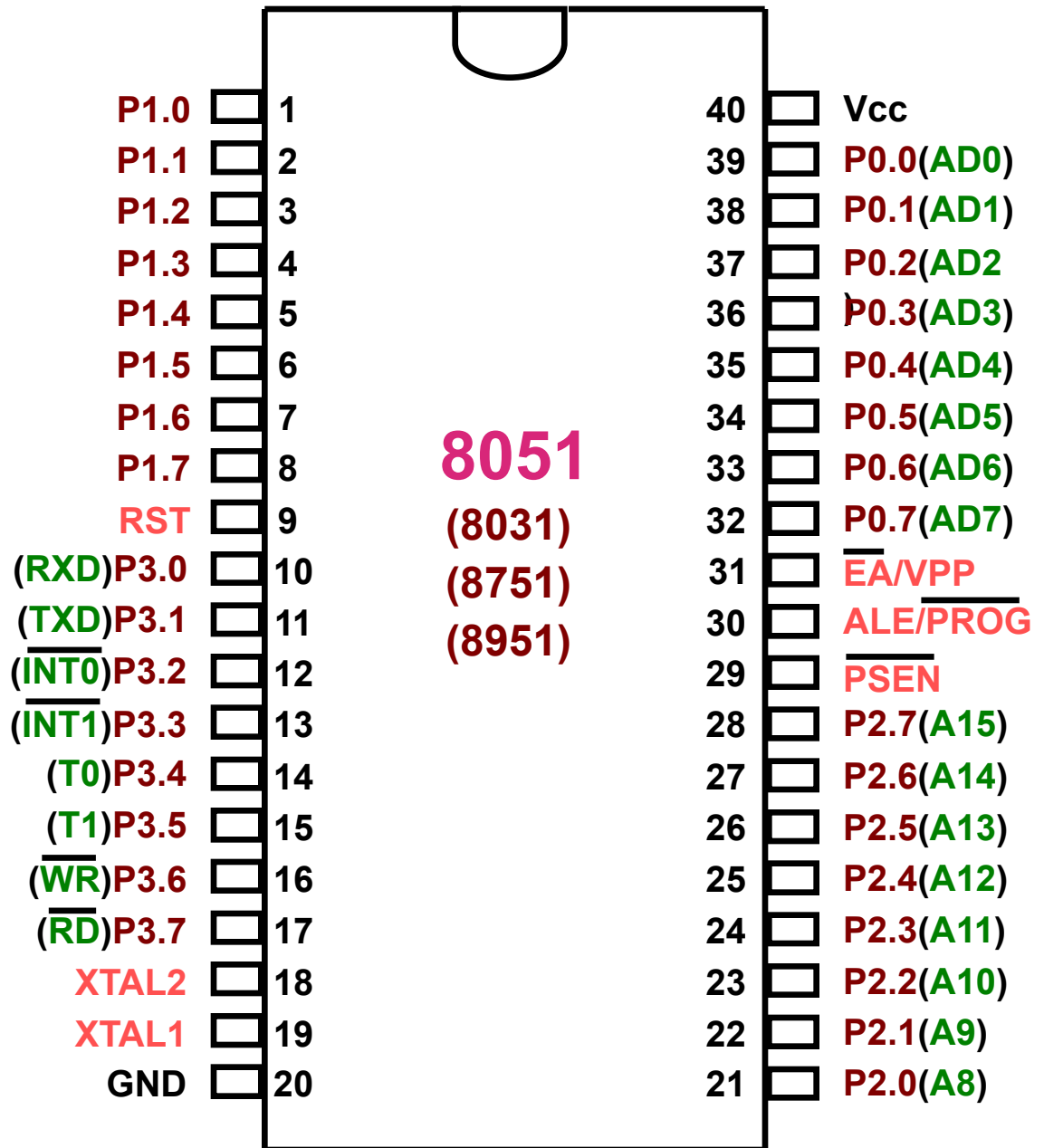
*EE-309: Microprocessors*



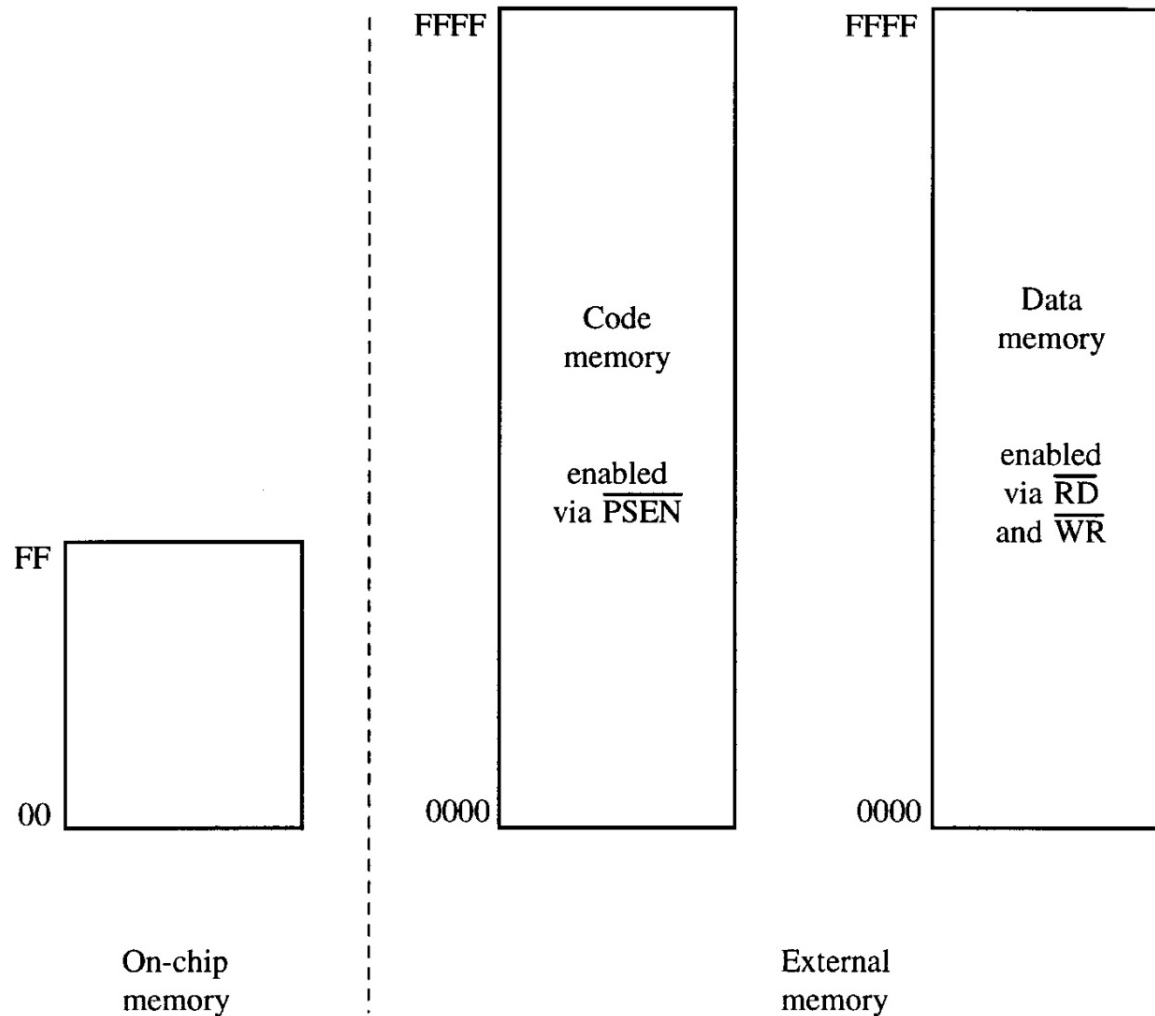
Lecture 7 (03 Aug 2015)

**CADSL**

# 8051 Pin Diagram



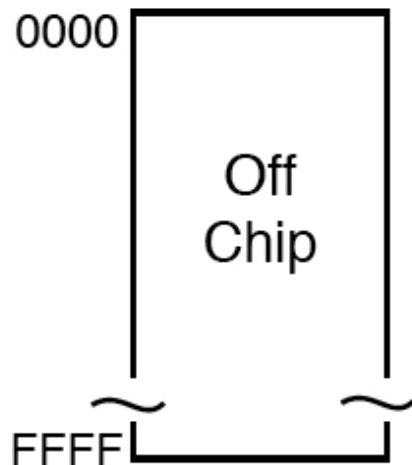
# 8051 Interfacing With External Memory



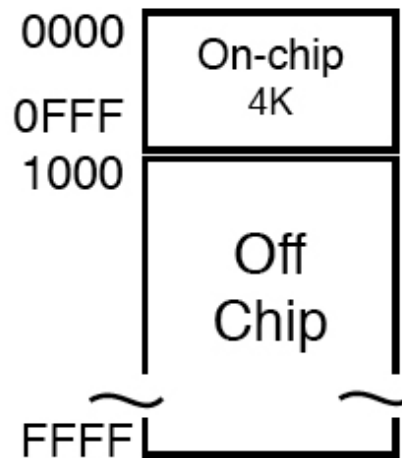
# 8051 Interfacing With External ROM

- PSEN

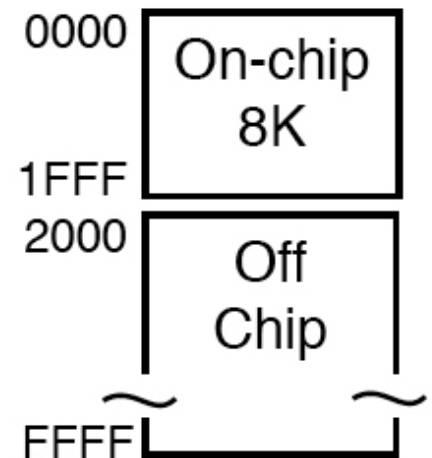
8031/51  
EA = GND



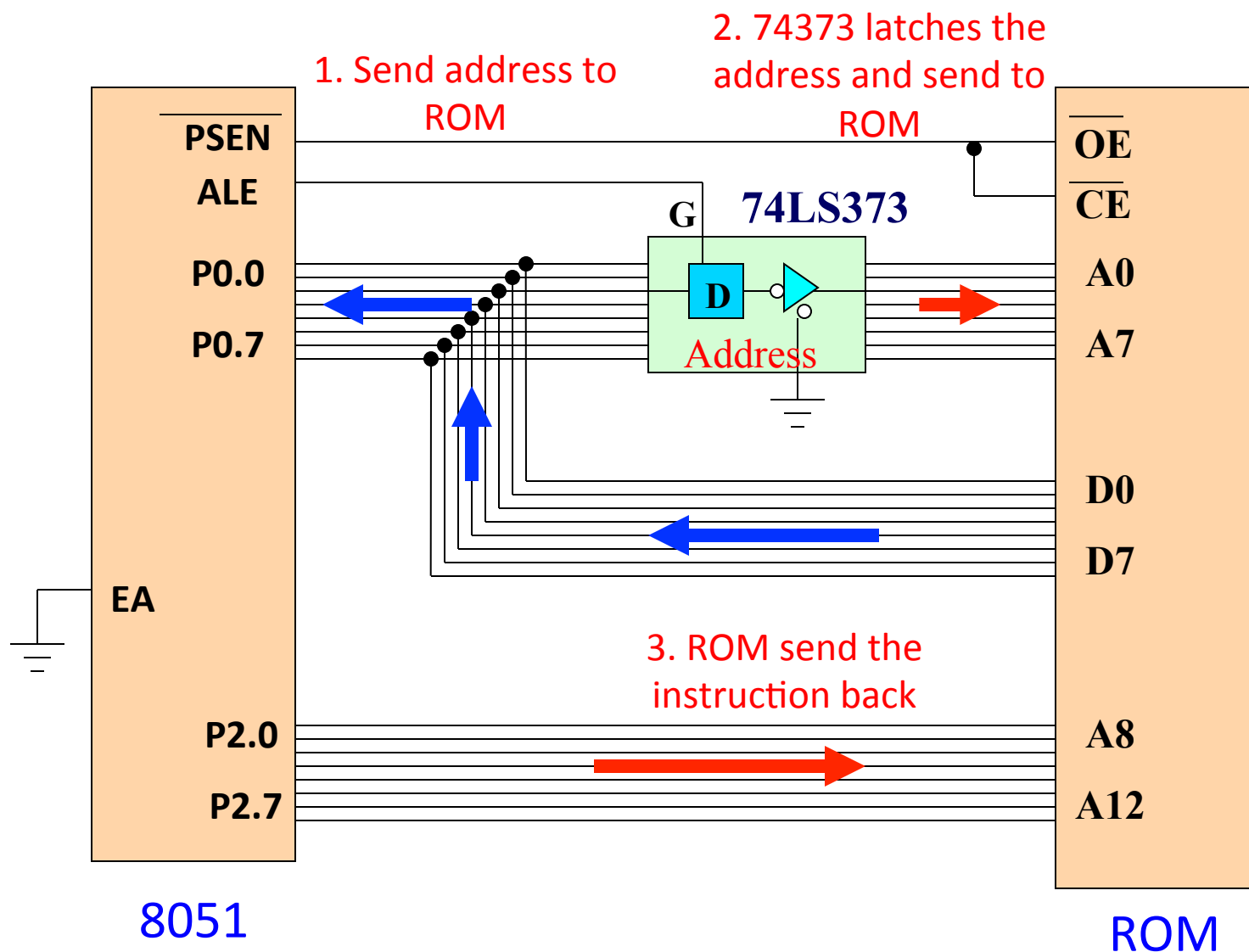
8051  
EA =  $V_{CC}$



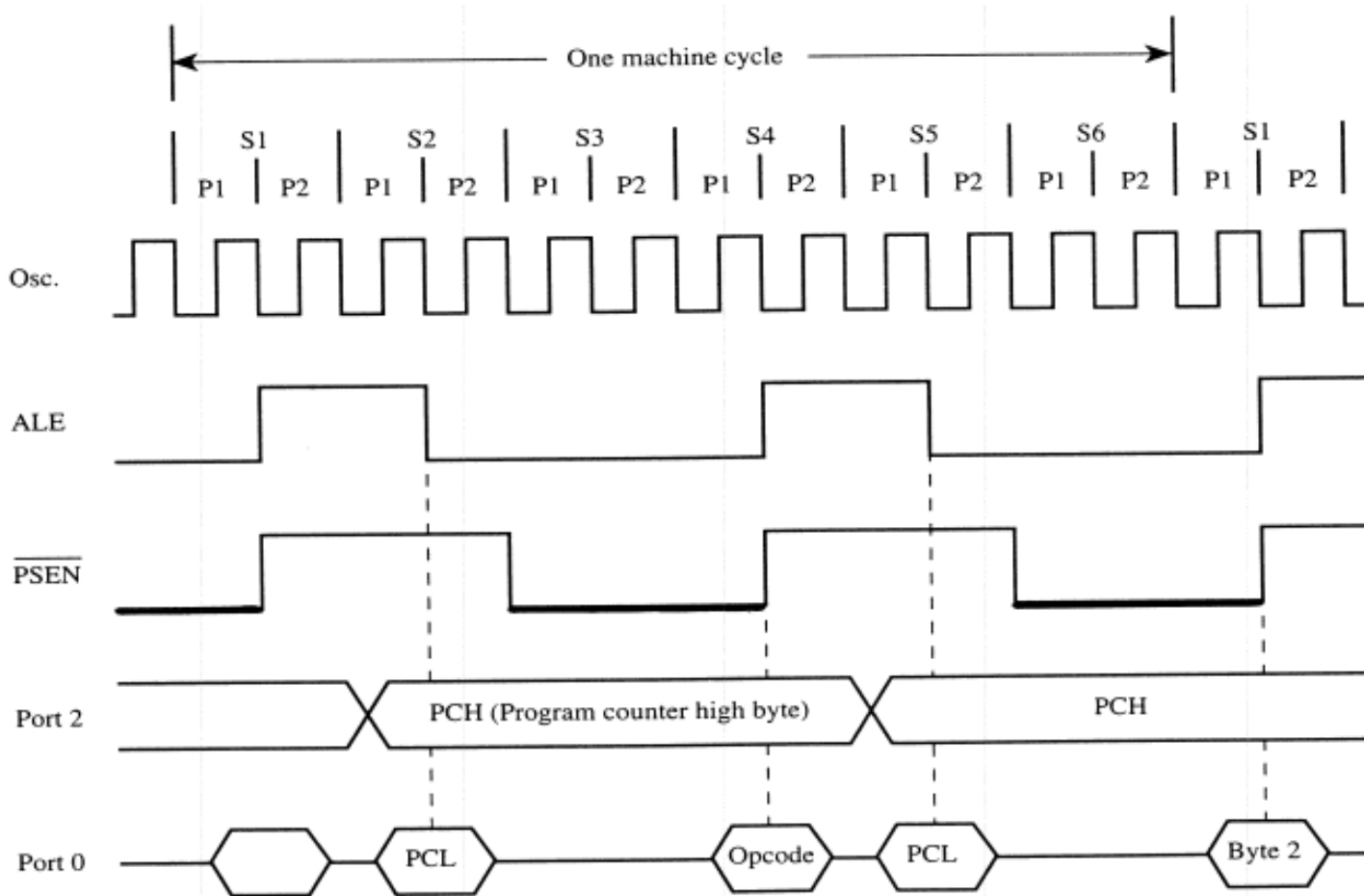
8052  
EA =  $V_{CC}$



# Reading ROM

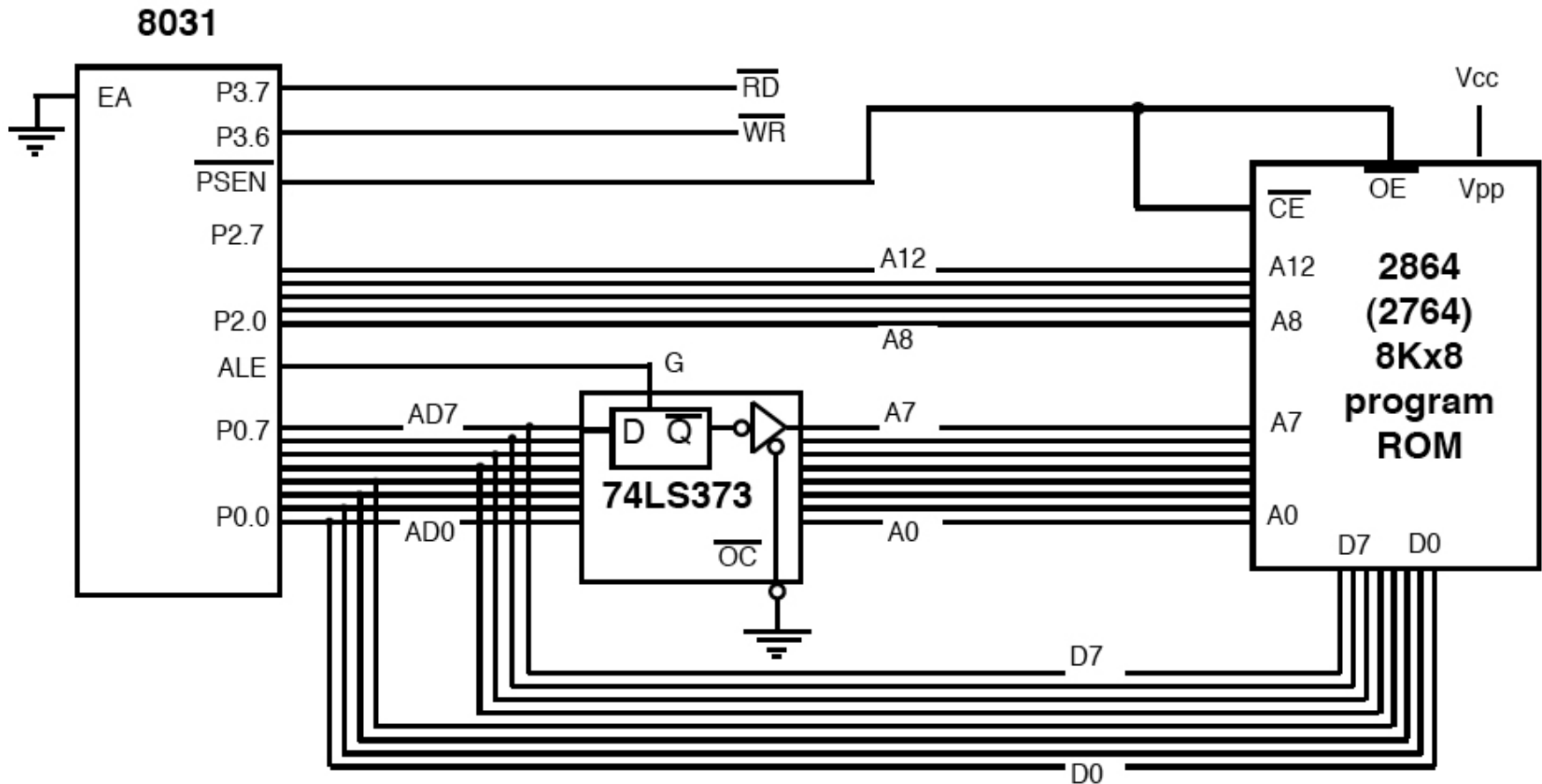


# Timing Diagram



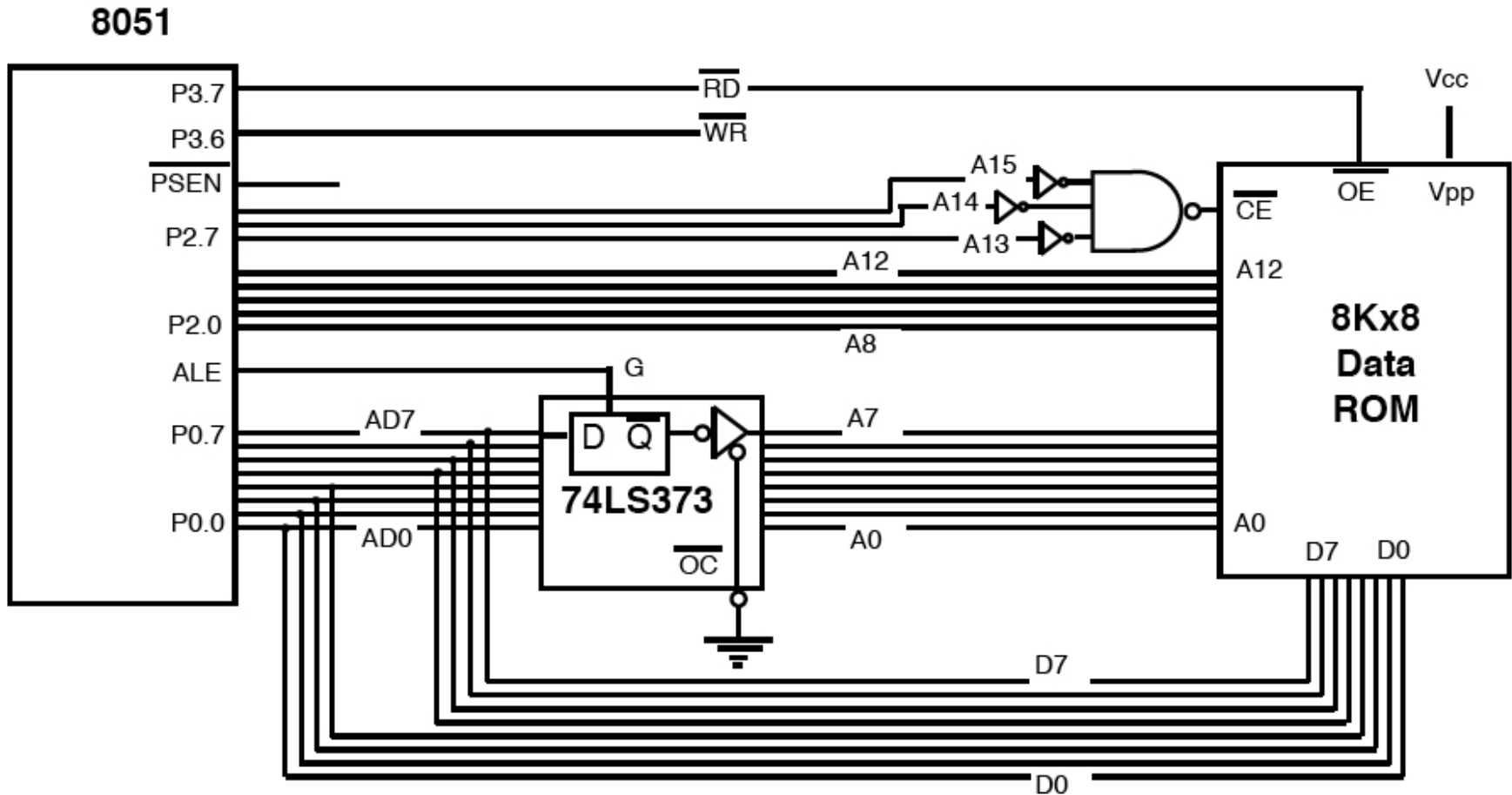
**FIGURE 2-9**  
Read timing for external code memory

# 8051 Interfacing With External ROM



# 8051 Data Memory Space

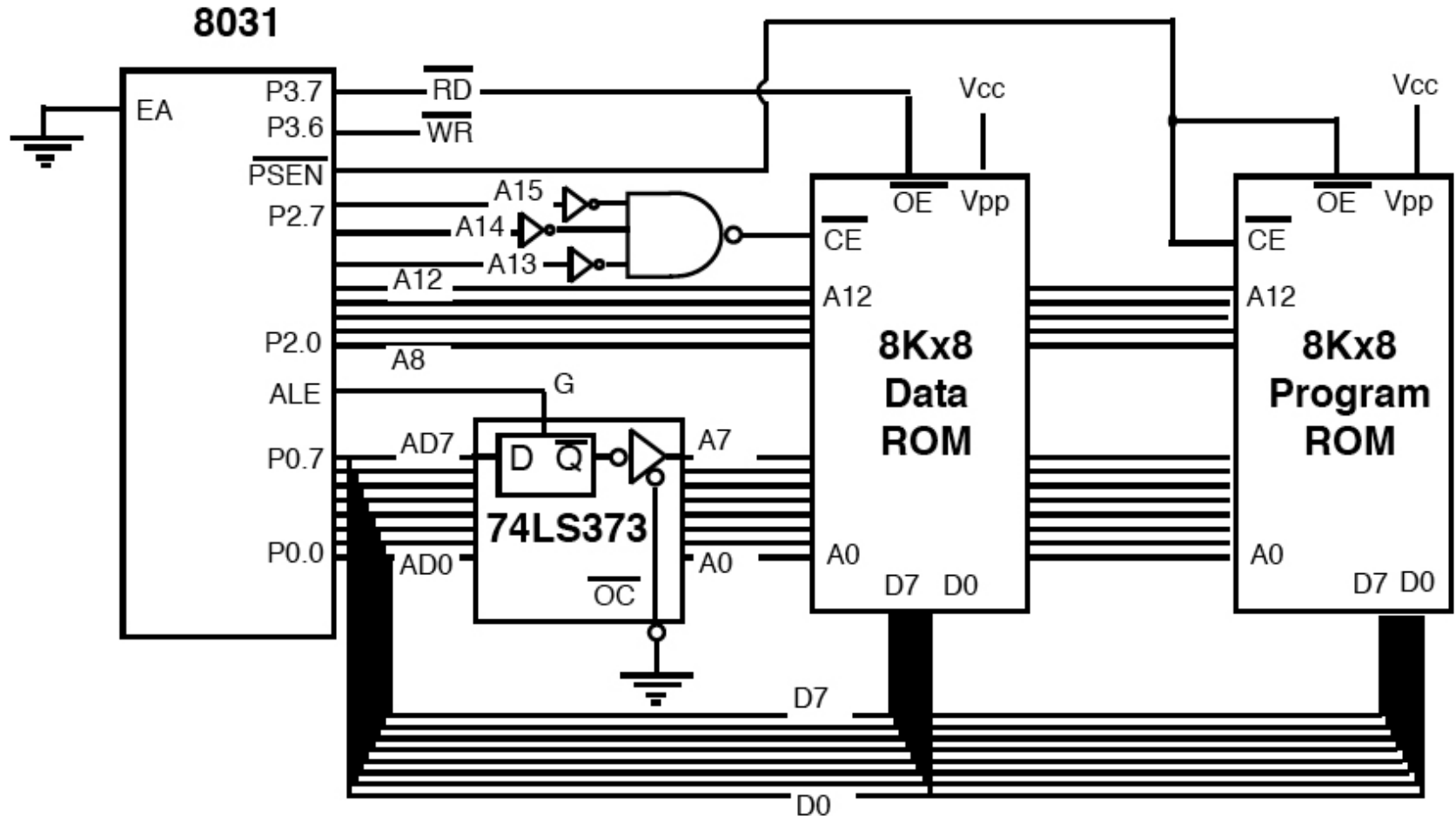
- Data memory space





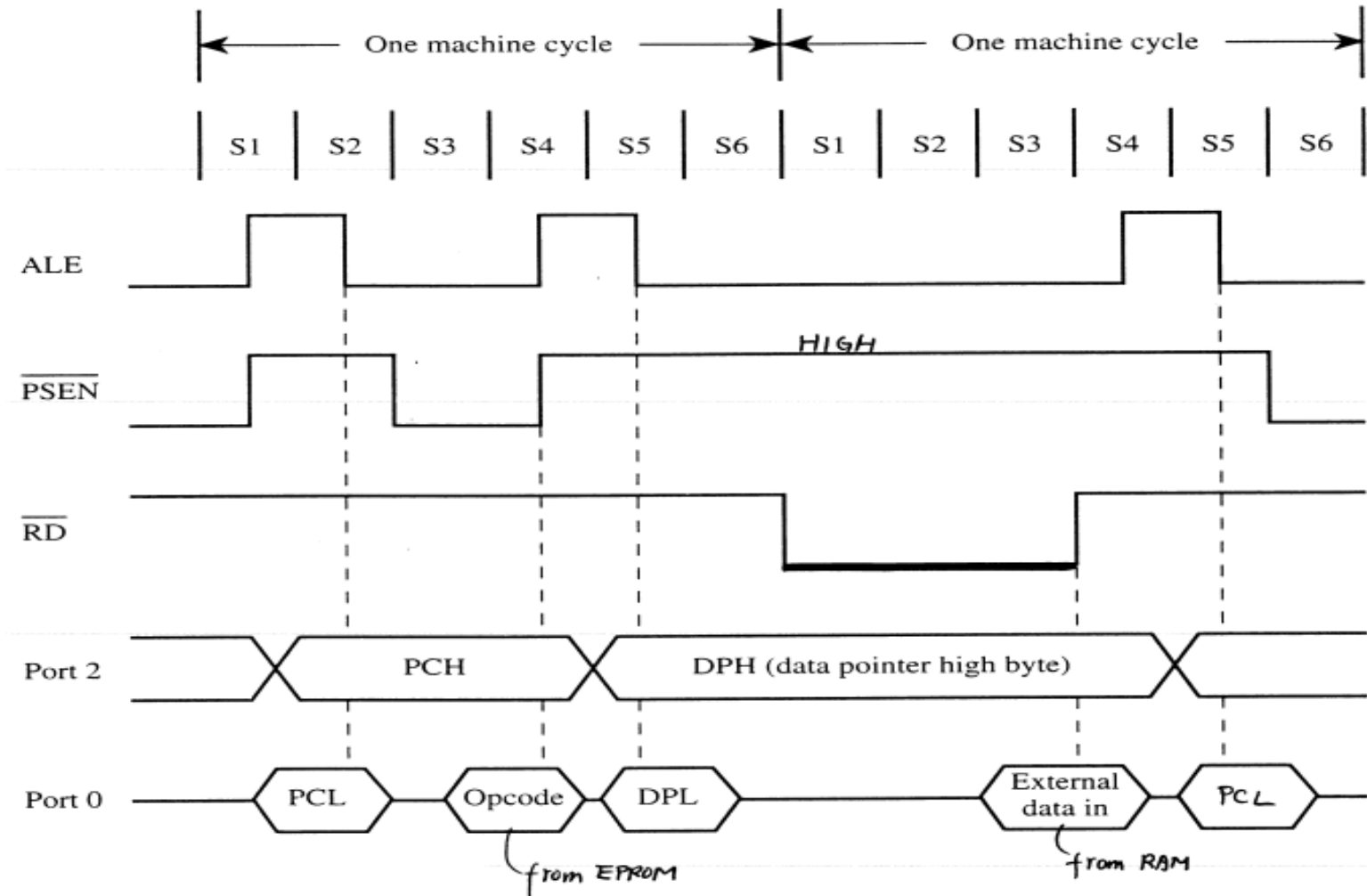
# 8051 Data Memory Space

- **MOVX** instruction



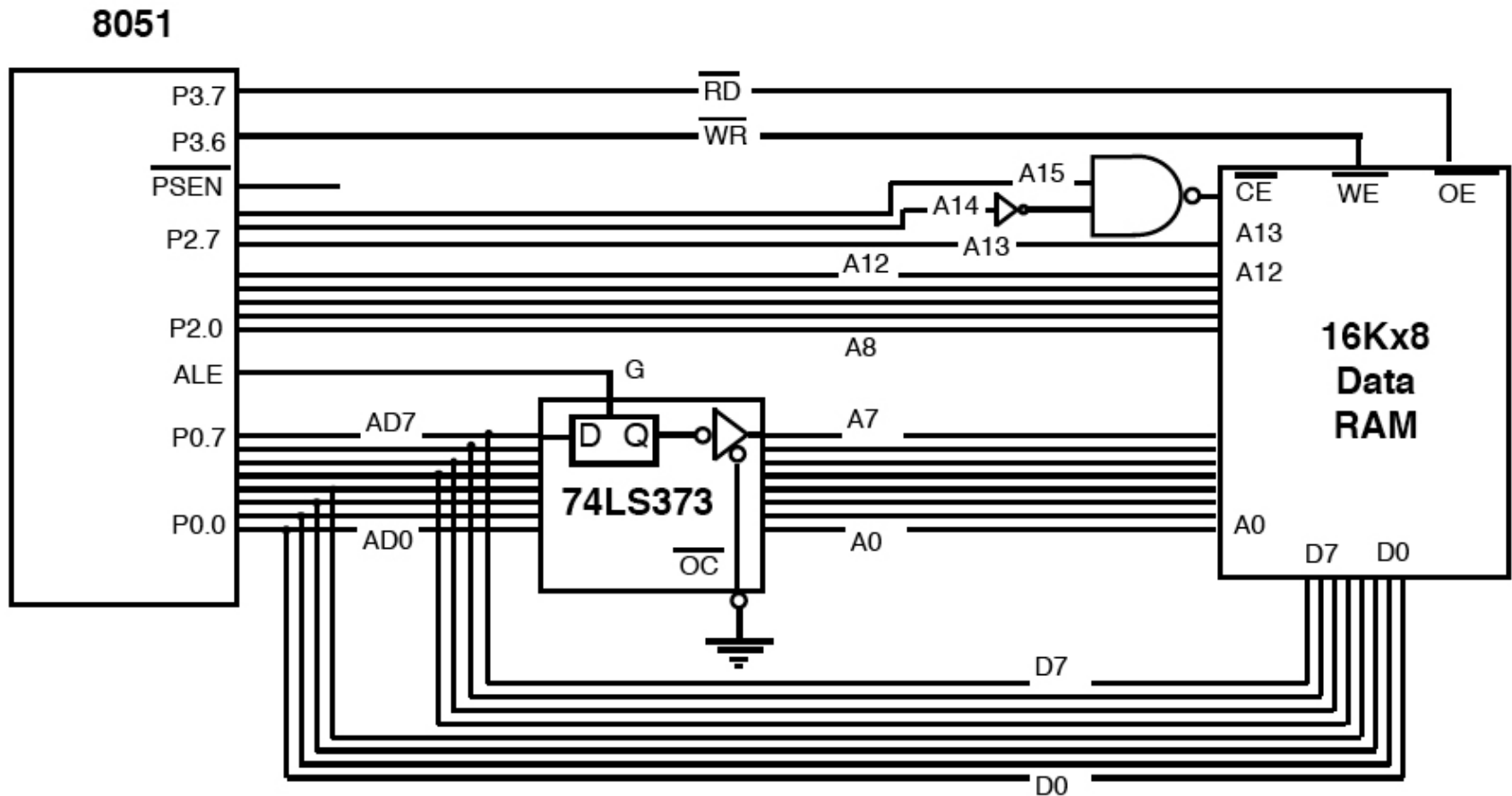
# Timing for MOVX instruction

## HARDWARE SUMMARY



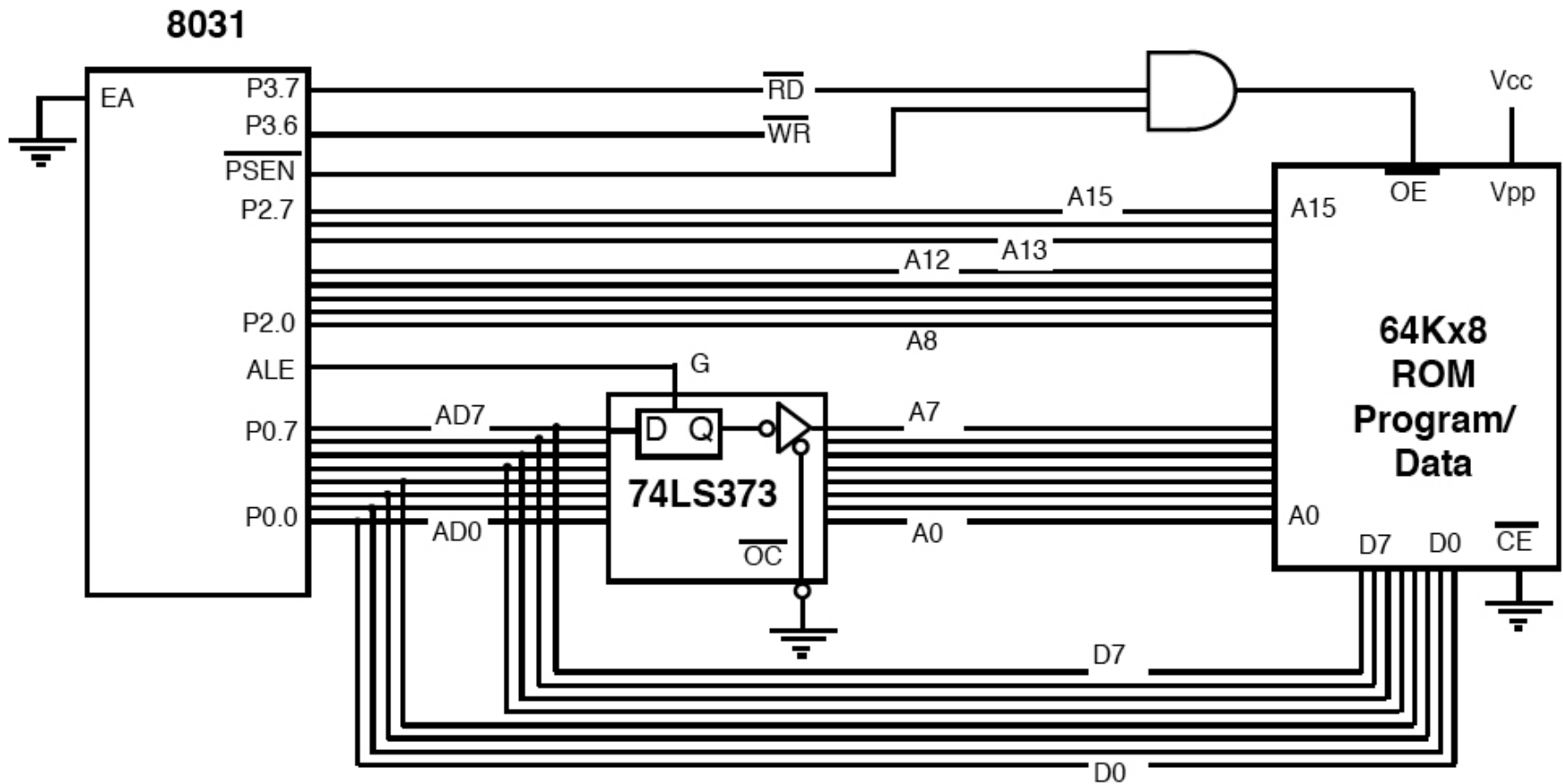
# 8051 Data Memory Space

- **MOVX** instruction for external RAM data

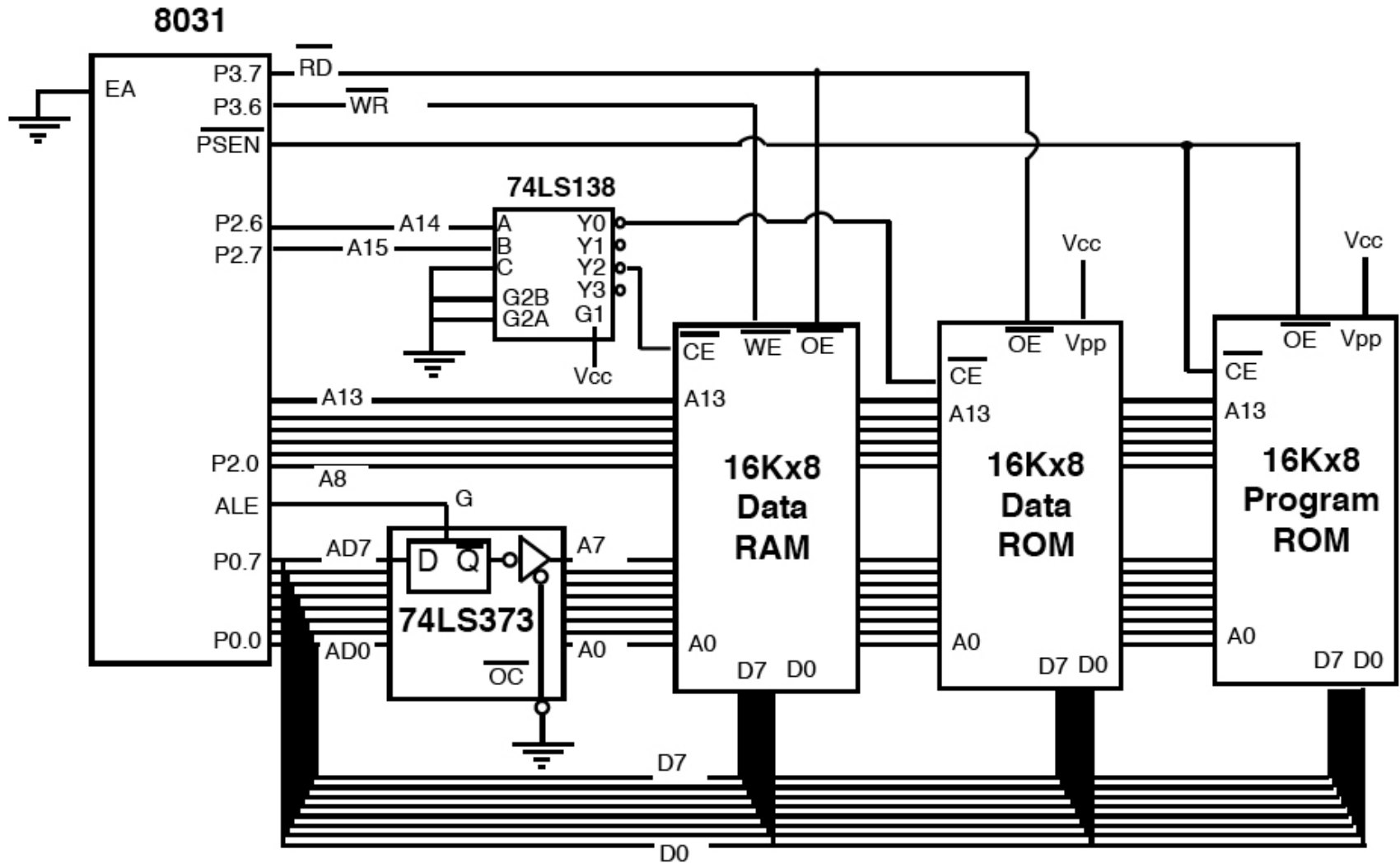


# 8051 Data Memory Space

- A single external ROM for code and data

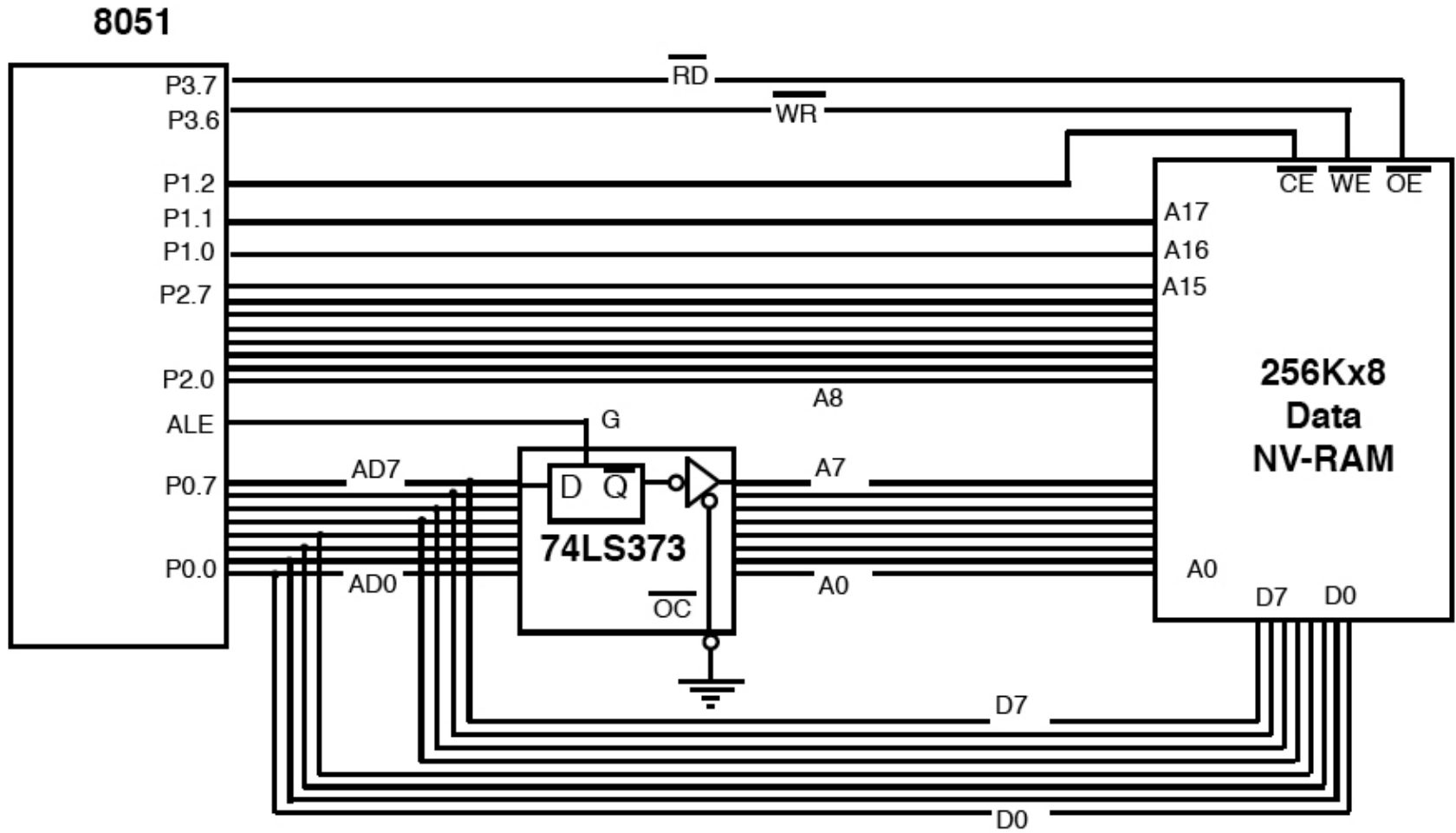


# 8051 Data/Program Memory Space



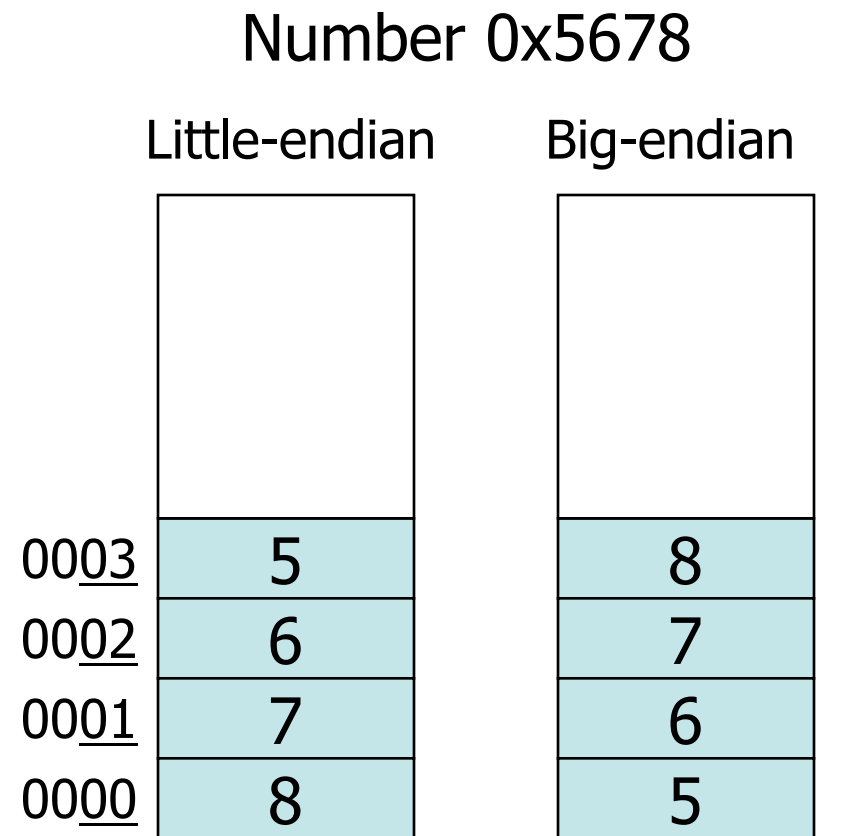
# 8051 Data Memory Space

- Interfacing to large external memory



# Little or Big: Where to Start?

- Byte ordering: Where is the first byte?
- Big-endian : IBM, SPARC, Mororola
- Little-endian: **Intel**, DEC
- Supporting both: MIPS, PowerPC



# Thank You

