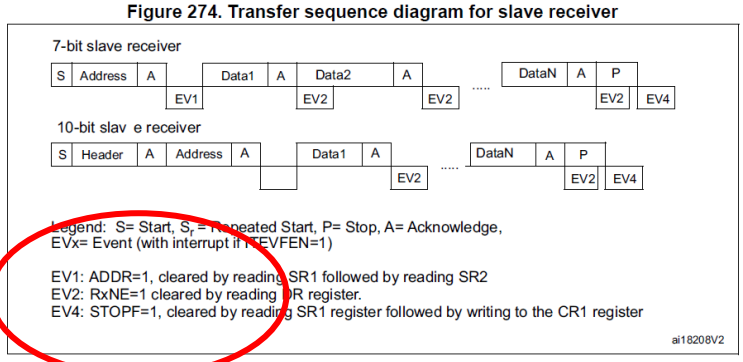
Setting the STM32F446 for SLAVE MODE:

INITIALIZATION: (polling method only- “Regular I2C”)

1. PICK your ports (SDA an SCL)
2. Configure your GPIO ports
    a. Clock enable (RCC)
    b. (MODER) set to alternate function
    c. (OTYPER) set to open drain output
    d. (OSPEEDR) set to high speed
    e. (PUPDR) set to pullup
    f. [AFR] to set Alternate function
3. Configure I2C port
    a. RESET I2C (CR1)
    b. Normal operation (CR1)
    c. Enable Peripheral (CR1)
    d. Set slave address (OAR1) be careful of bit shift!
    e. Establish 7 bit mode (OAR)
4. Check for data (in ISR or in MAIN)

Per the Reference Manual, the proper sequence for receiving a Byte:

Figure 274. Transfer sequence diagram for slave receiver



    a. Check if ADDR=1 in SR1
    If true- read SR2 register (to clear bit)
    b. Check if RxNE bit =1 in SR1
    If true, read DR register (to get data and clear bit)
    c. Check if STOPF=1 in SR1
    If true write anything in CR1 register to clear.