

$$1. \quad \frac{1.25 \text{ miles}}{1} \times \frac{5280 \text{ ft}}{1 \text{ mile}} = 6,600 \text{ ft}$$

$$2. \quad \frac{2.8 \text{ Acres}}{1} \times \frac{43,560 \text{ ft}^2}{1 \text{ acre}} = 121,968 \text{ ft}^2$$

$$3. \quad \frac{1.75 \text{ acre-ft}}{1} \times \frac{43,560 \text{ ft}^3}{1 \text{ acre-ft}} = 76,230 \text{ ft}^3$$

$$4. \quad \frac{1200 \text{ GAL}}{1 \text{ day}} \times \frac{1440 \text{ min}}{1 \text{ DAY}} \times \frac{1 \text{ MG}}{1,000,000 \text{ GAL}} = 1.728 \text{ MG/D}$$

$$5. \quad \frac{1.4 \text{ ft}^3}{1 \text{ sec}} \times \frac{60 \text{ sec}}{1 \text{ min}} \times \frac{7.48 \text{ GAL}}{1 \text{ ft}^3} = 628.32 \text{ GPM}$$

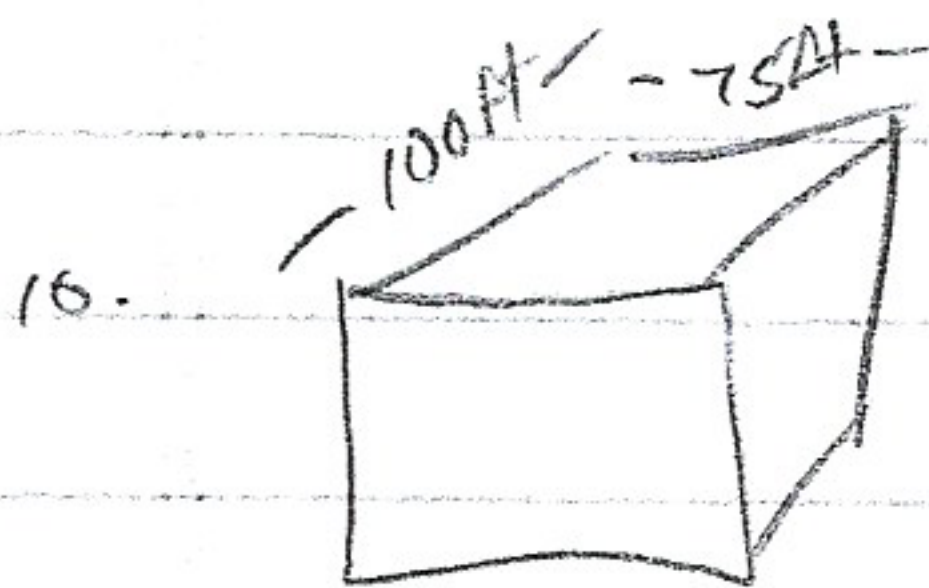
$$6. \quad \frac{0.89 \text{ MG}}{1 \text{ DAY}} \times \frac{1 \text{ DAY}}{1440 \text{ min}} \times \frac{1 \text{ min}}{60 \text{ sec}} \times \frac{1,000,000 \text{ GAL}}{1 \text{ MG}} \times \frac{1 \text{ ft}^3}{7.48 \text{ GAL}} = 1.38 \text{ ft}^3/\text{sec}$$

$$7. \quad \frac{2.1 \text{ MG}}{1 \text{ DAY}} \times \frac{1,000,000 \text{ GAL}}{1 \text{ MG}} \times \frac{1 \text{ ft}^3}{7.48 \text{ GAL}} \times \frac{1 \text{ acre-ft}}{43,560 \text{ ft}^3} = 6.45 \text{ acre-ft/DAY}$$

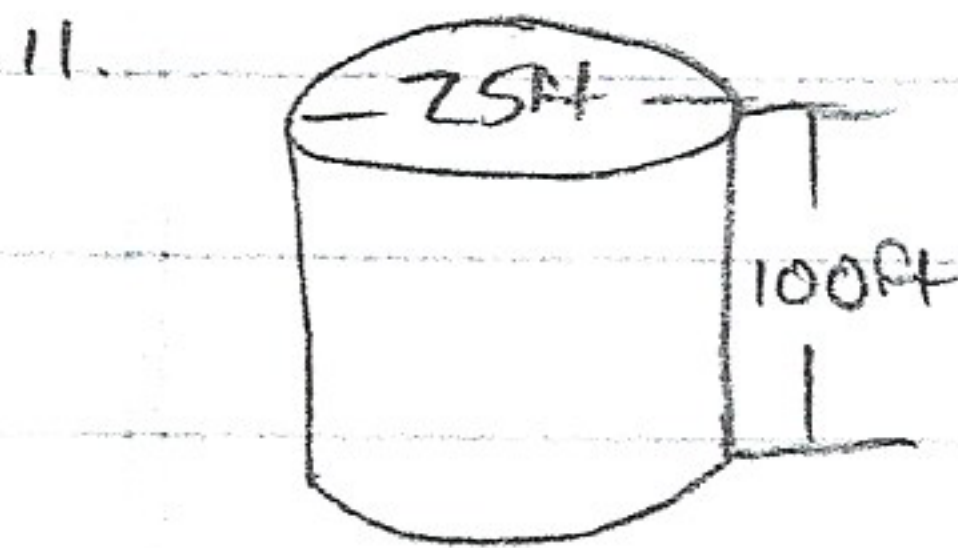


$$6. (32^{\circ}\text{C} \times 1.8) + 32 = 89.6^{\circ}\text{F}$$

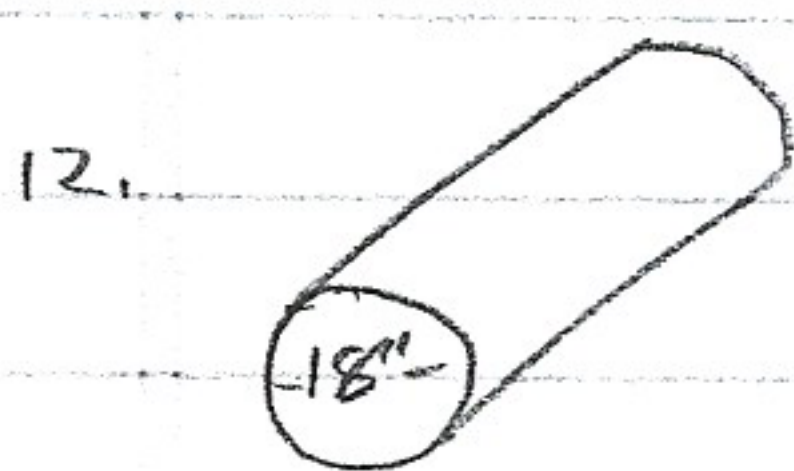
$$9. (90^{\circ}\text{F} - 32) \div 1.8 = 32.2^{\circ}\text{C}$$



$$\frac{100 \text{ ft}}{1} \times \frac{75 \text{ ft}}{1} = 7,500 \text{ ft}^2$$

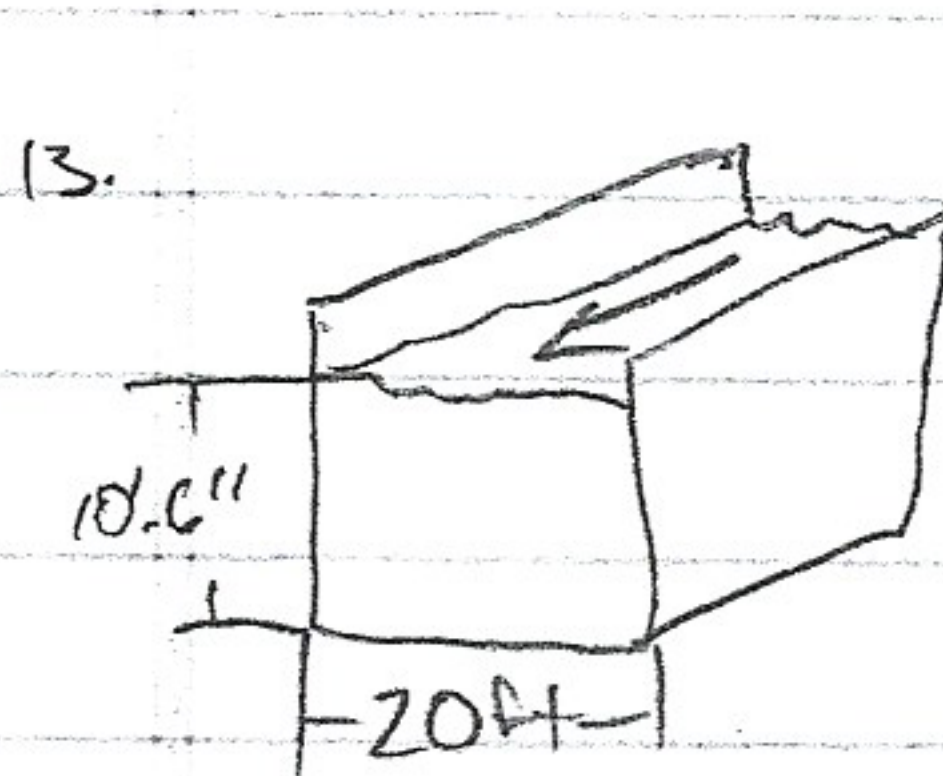


$$\frac{0.7854}{1} \times \frac{25 \text{ ft}}{1} \times \frac{25 \text{ ft}}{1} = 490.875 \text{ ft}^2$$



$$12 \sqrt{\frac{1.5}{18}}$$

$$\frac{0.7854}{1} \times \frac{1.5 \text{ ft}}{1} \times \frac{1.5 \text{ ft}}{1} = 1.77 \text{ ft}^2$$

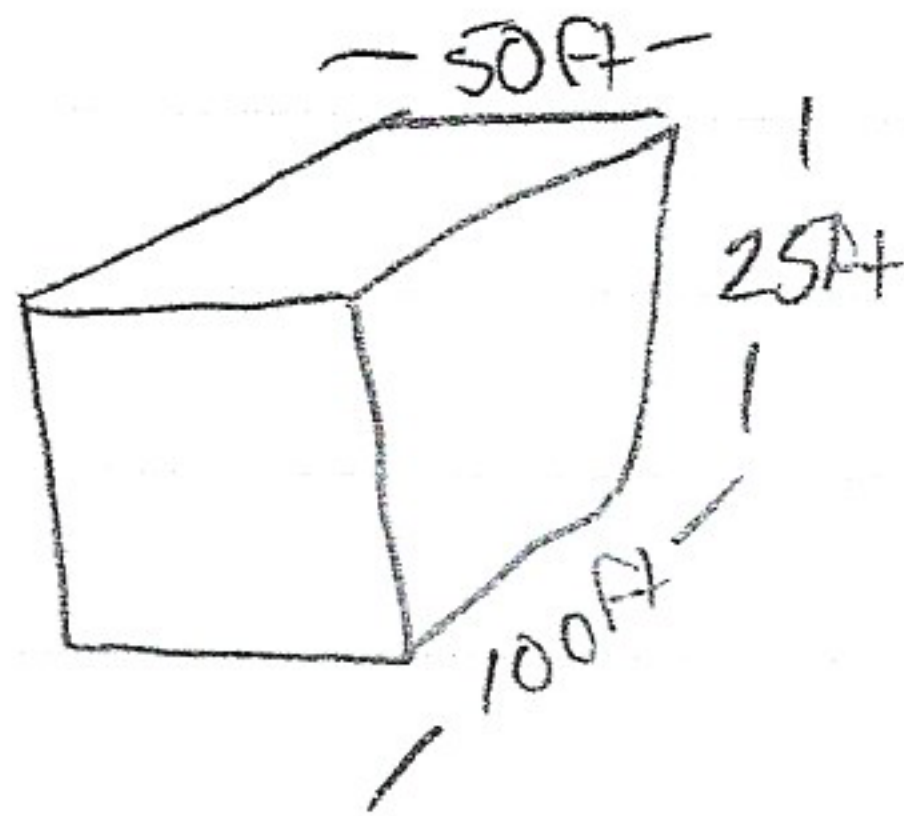


$$12 \sqrt{\frac{0.5}{6}}$$

$$\frac{20 \text{ ft}}{1} \times \frac{10.5 \text{ ft}}{1} = 210 \text{ ft}^2$$

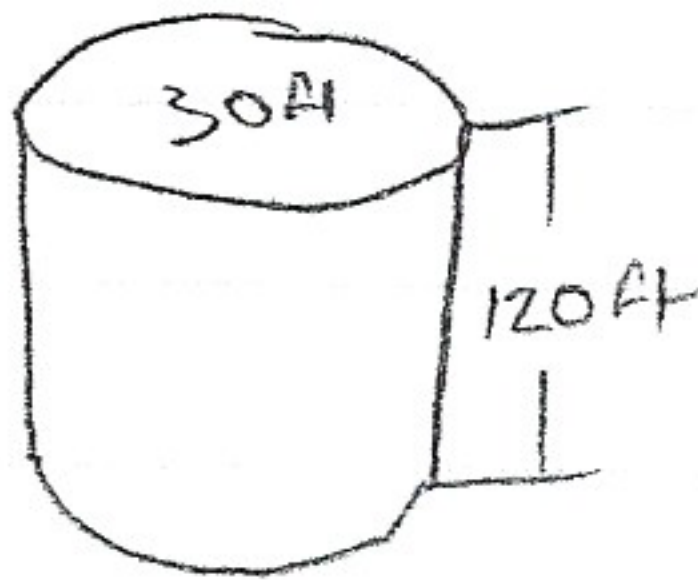


14.



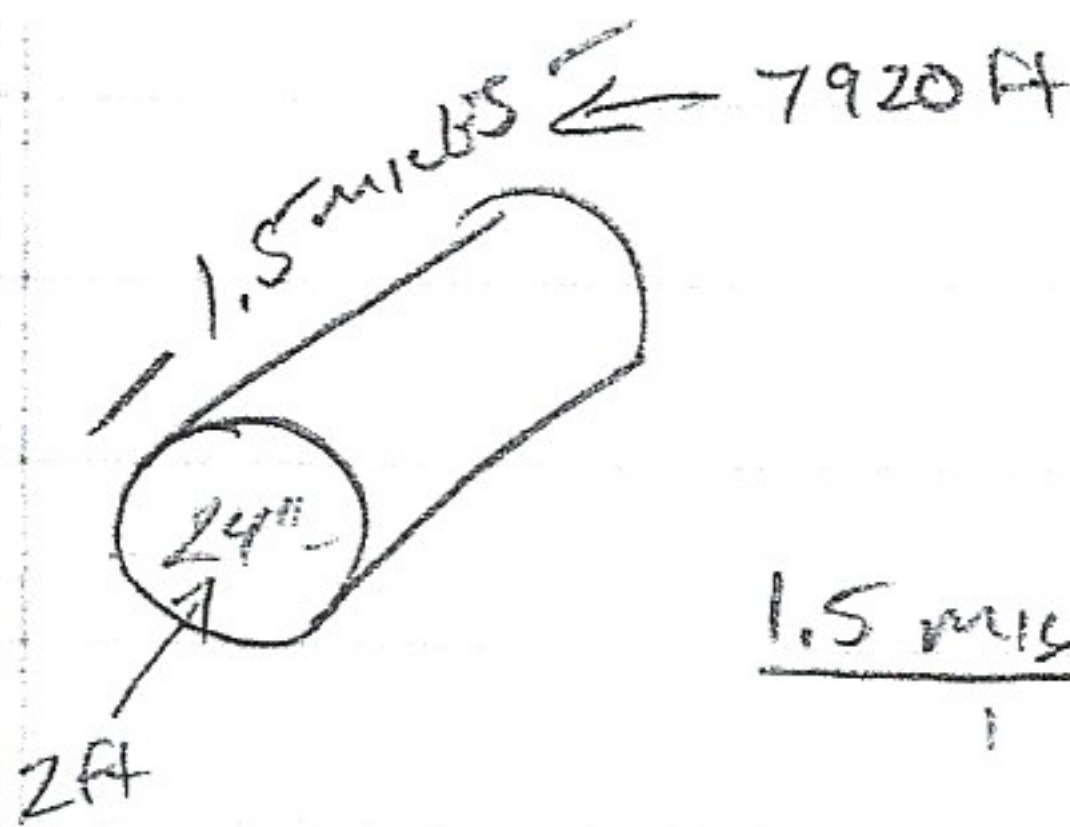
$$\frac{100\text{ft}}{1} \times \frac{50\text{ft}}{1} \times \frac{25\text{ft}}{1} \times \frac{7.48\text{GAL}}{1\text{ft}^3} = \boxed{935,000\text{ GAL}}$$

15.



$$\frac{0.7854}{1} \times \frac{30\text{ft}}{1} \times \frac{30\text{ft}}{1} \times \frac{120\text{ft}}{1} = \boxed{84,823.2\text{ ft}^3}$$

16.



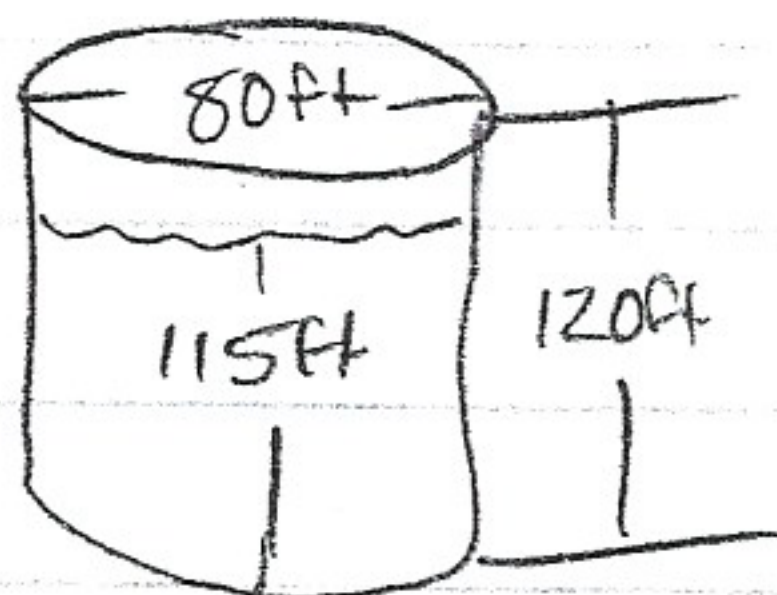
$$12 \overline{) 24} = 2$$

$$\frac{1.5\text{ miles}}{1} \times \frac{5280\text{ft}}{1\text{ mile}} = 7920\text{ft}$$

$$\frac{0.7854}{1} \times \frac{2\text{ft}}{1} \times \frac{2\text{ft}}{1} \times \frac{7920\text{ft}}{1} \times \frac{7.48\text{GAL}}{1\text{ft}^3} \times \frac{1\text{ MG}}{1,000,000\text{GAL}} = \frac{186,113}{1,000,000}$$

$$\boxed{0.186\text{ MG}}$$

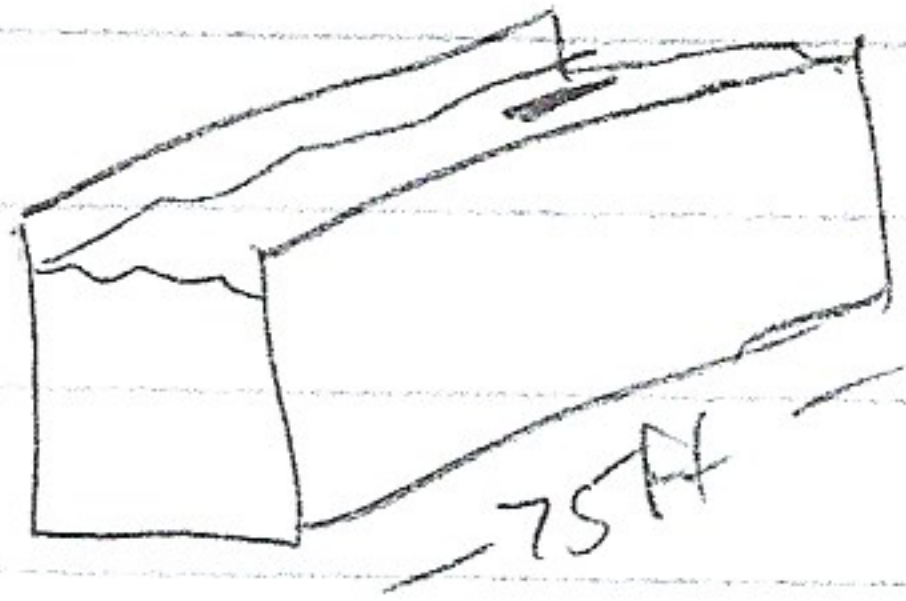
17.



$$\frac{0.7854}{1} \times \frac{80\text{ft}}{1} \times \frac{80\text{ft}}{1} \times \frac{115\text{ft}}{1} = \boxed{578,054\text{ ft}^3}$$



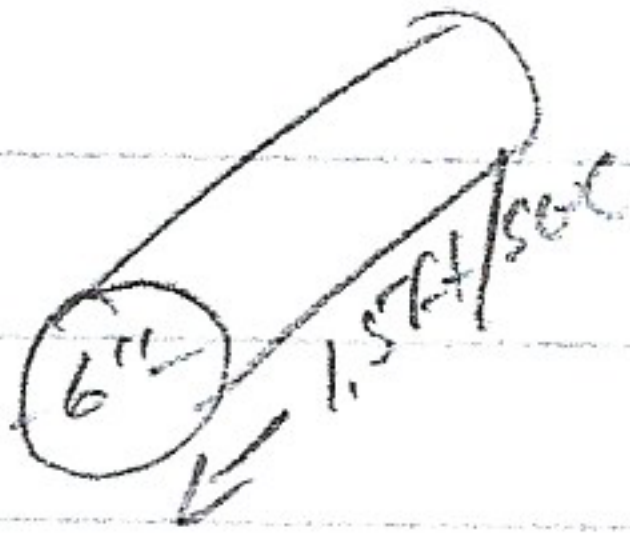
18.



$$\frac{75 \text{ ft}}{1} \times \frac{1}{13 \text{ sec}}$$

$$\boxed{5.77 \text{ ft/sec}}$$

19.

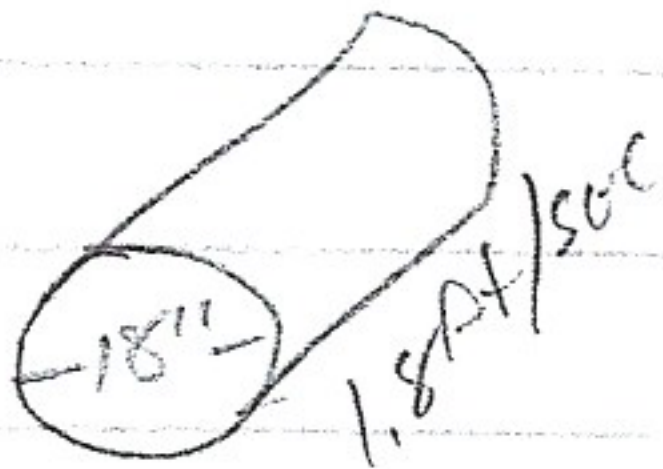


$$12 \sqrt{6} = 0.5$$

$$\frac{0.7854}{1} \times \frac{0.5 \text{ ft}}{1} \times \frac{0.5 \text{ ft}}{1} \times \frac{1.5 \text{ ft}}{1 \text{ sec}} \times \frac{7.48 \text{ GAL}}{1 \text{ ft}^3} \times \frac{60 \text{ sec}}{1 \text{ min}} =$$

$$\boxed{132.2 \text{ GPM}}$$

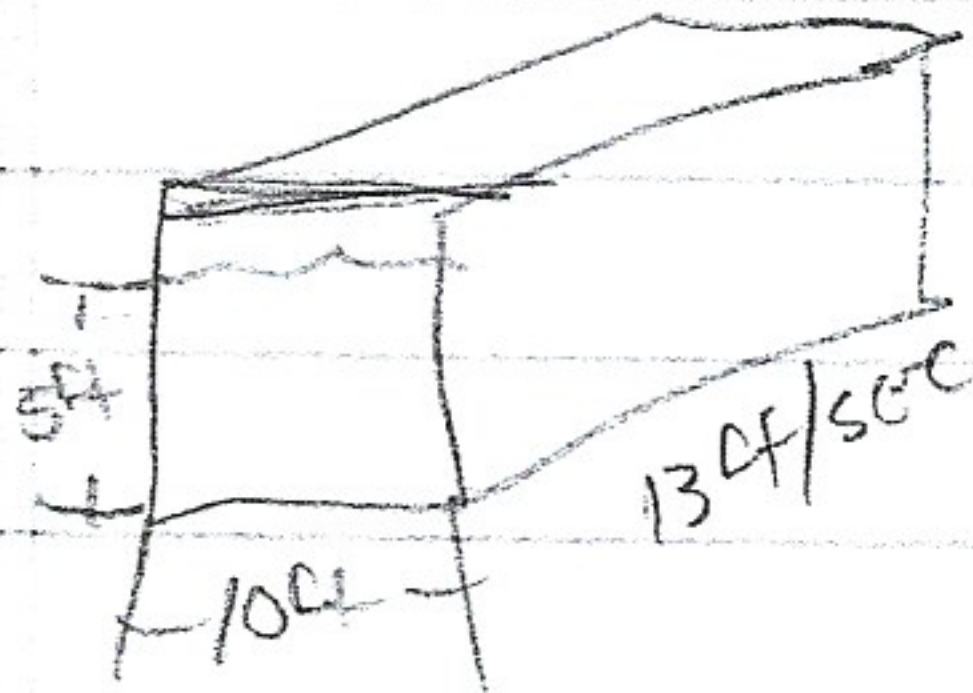
20.



$$12 \sqrt{18} = 1.5$$

$$\frac{0.7854}{1} \times \frac{1.5 \text{ ft}}{1} \times \frac{1.5 \text{ ft}}{1} \times \frac{1.8 \text{ ft}}{1 \text{ sec}} \times \frac{7.48 \text{ GAL}}{1 \text{ ft}^3} = \boxed{23.8 \text{ GAL/sec}}$$

21.

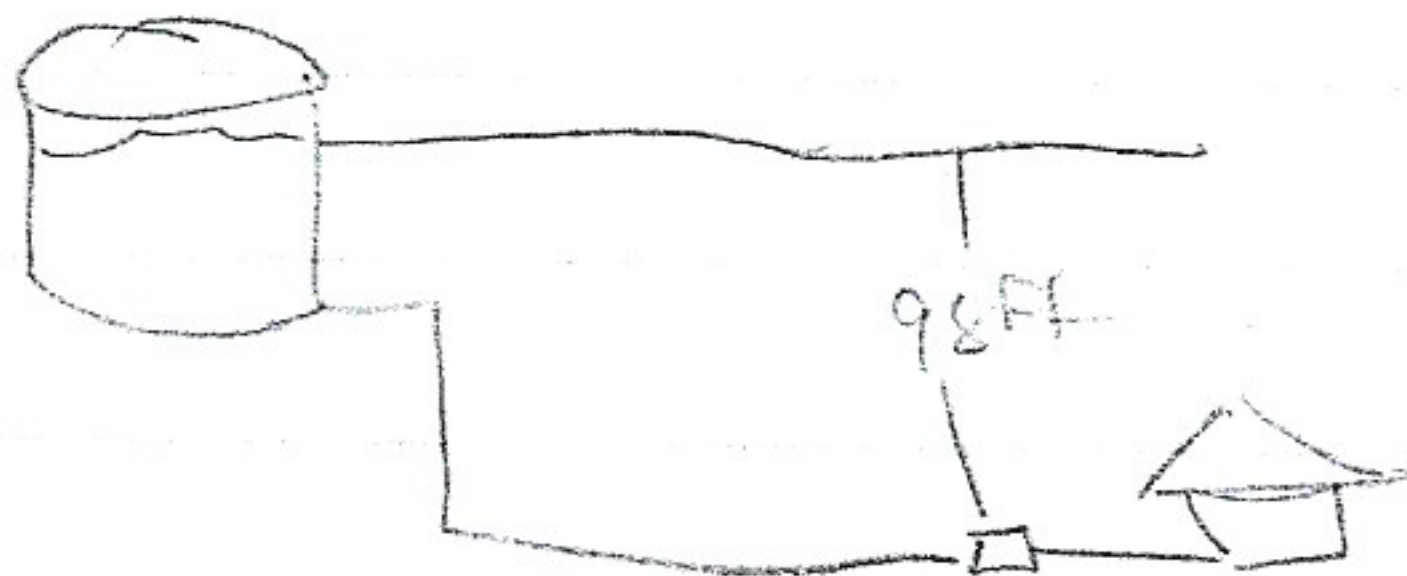


$$\frac{13 \text{ ft}}{1 \text{ sec}} \times \frac{10 \text{ ft}}{1} \times \frac{5 \text{ ft}}{1} \times \frac{7.48 \text{ GAL}}{1 \text{ ft}^3} \times \frac{60 \text{ sec}}{1 \text{ min}} =$$

$$\boxed{291,720 \text{ GPM}}$$



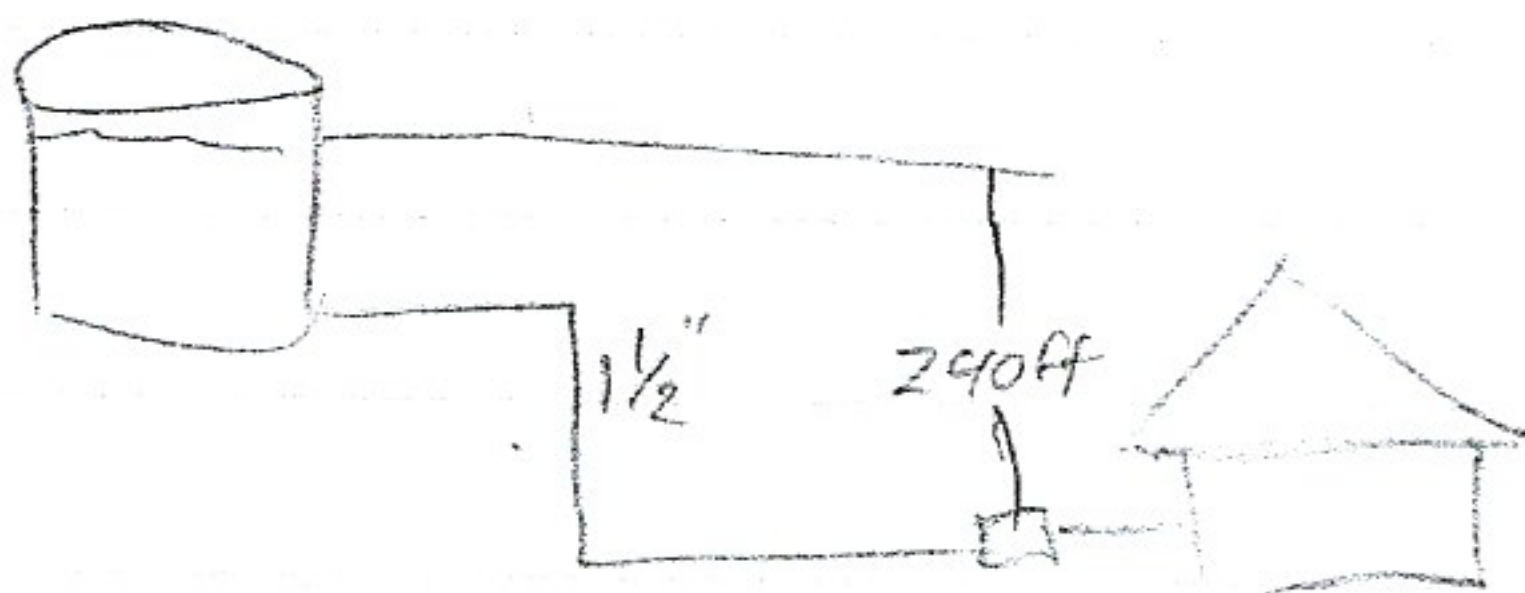
22.



$$\frac{98 \text{ ft}}{1} \times \frac{1 \text{ PSI}}{2.31 \text{ ft}} = \boxed{42.4 \text{ PSI}}$$

43

23.

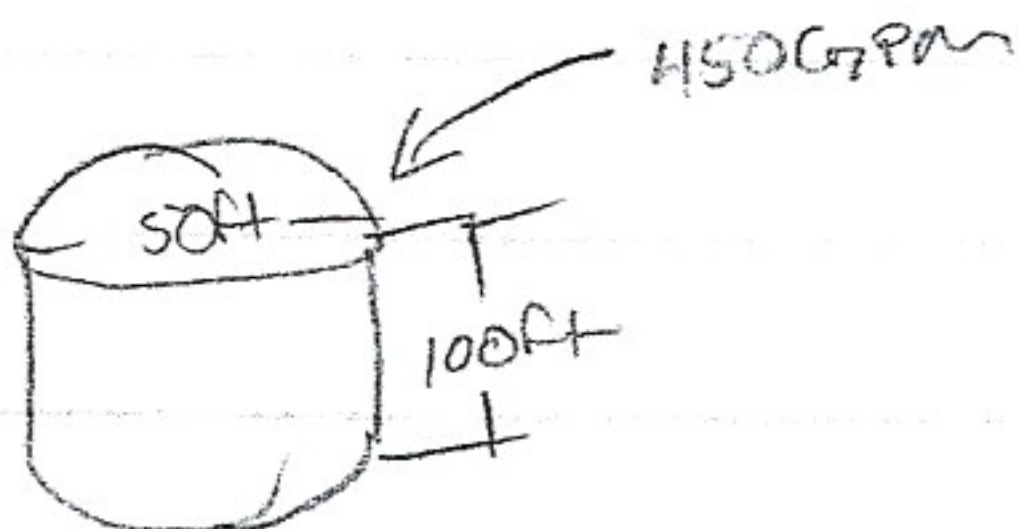


$$\frac{240 \text{ ft}}{1} \times \frac{1 \text{ PSI}}{2.31 \text{ ft}} = \boxed{104 \text{ PSI}}$$

24.

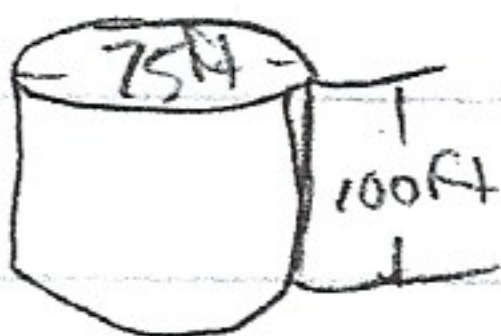
$$\frac{500,000 \text{ GAL}}{1} \times \frac{1 \text{ MIN}}{500 \text{ GAL}} \times \frac{1 \text{ HR}}{60 \text{ MIN}} = \boxed{16.67 \text{ HRS}}$$

25.



$$\frac{0.7854}{1} \times \frac{50 \text{ ft}}{1} \times \frac{50 \text{ ft}}{1} \times \frac{100 \text{ ft}}{1} \times \frac{7.48 \text{ GAL}}{1 \text{ FT}^3} \times \frac{1 \text{ MIN}}{450 \text{ GAL}} = 5,263.8 \text{ MIN}$$

26.



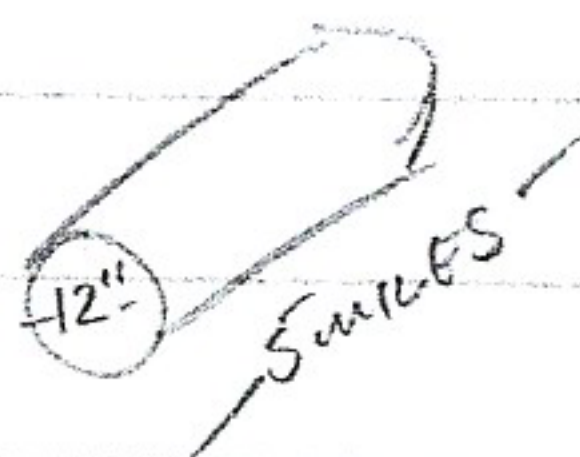
$$\frac{0.7854}{1} \times \frac{75 \text{ ft}}{1} \times \frac{75 \text{ ft}}{1} \times \frac{100 \text{ ft}}{1} \times \frac{7.48 \text{ GAL}}{1 \text{ FT}^3} \times \frac{1 \text{ HR}}{33,333 \text{ GAL}} = 99 \text{ HRS.}$$

$$\frac{0.8 \text{ MG}}{1 \text{ DAY}} \times \frac{1 \text{ DAY}}{24 \text{ HRS}} \times \frac{1,000,000 \text{ GAL}}{1 \text{ MG}} = 33,333 \text{ GAL/HR}$$



$$27. \quad 1.6 \text{ MGD} \times 0.4 \text{ mg/L} \times 8.34 = 4.7 \text{ lbs/day}$$

28.



$$12 \sqrt{12} = 1$$

$$\frac{5 \text{ miles}}{1} \times \frac{5280 \text{ ft}}{1 \text{ mile}} = 26,400 \text{ ft}$$

$$\frac{0.7854}{1} \times \frac{1 \text{ ft}}{1} \times \frac{1 \text{ ft}}{1} \times \frac{26,400 \text{ ft}}{1} \times \frac{7.48 \text{ gal}}{1 \text{ ft}^3} \times \frac{1 \text{ mg}}{1,000,000 \text{ gal}} = 0.155 \text{ mg}$$

$$\frac{0.155 \text{ mg} \times 0.5 \text{ mg/L} \times 8.34}{0.65} = 0.99 \text{ lbs}$$

$$29. \quad \frac{500,000 \text{ GAL}}{1} \times \frac{1 \text{ mg}}{1,000,000 \text{ GAL}} = 0.5 \text{ mg}$$

$$\frac{0.5 \text{ mg} \times 0.17 \text{ mg/L} \times 8.34}{0.15} = \frac{11.12 \text{ lbs}}{1} \times \frac{1}{12 \text{ hrs}} = 0.93 \text{ lbs/hr.}$$

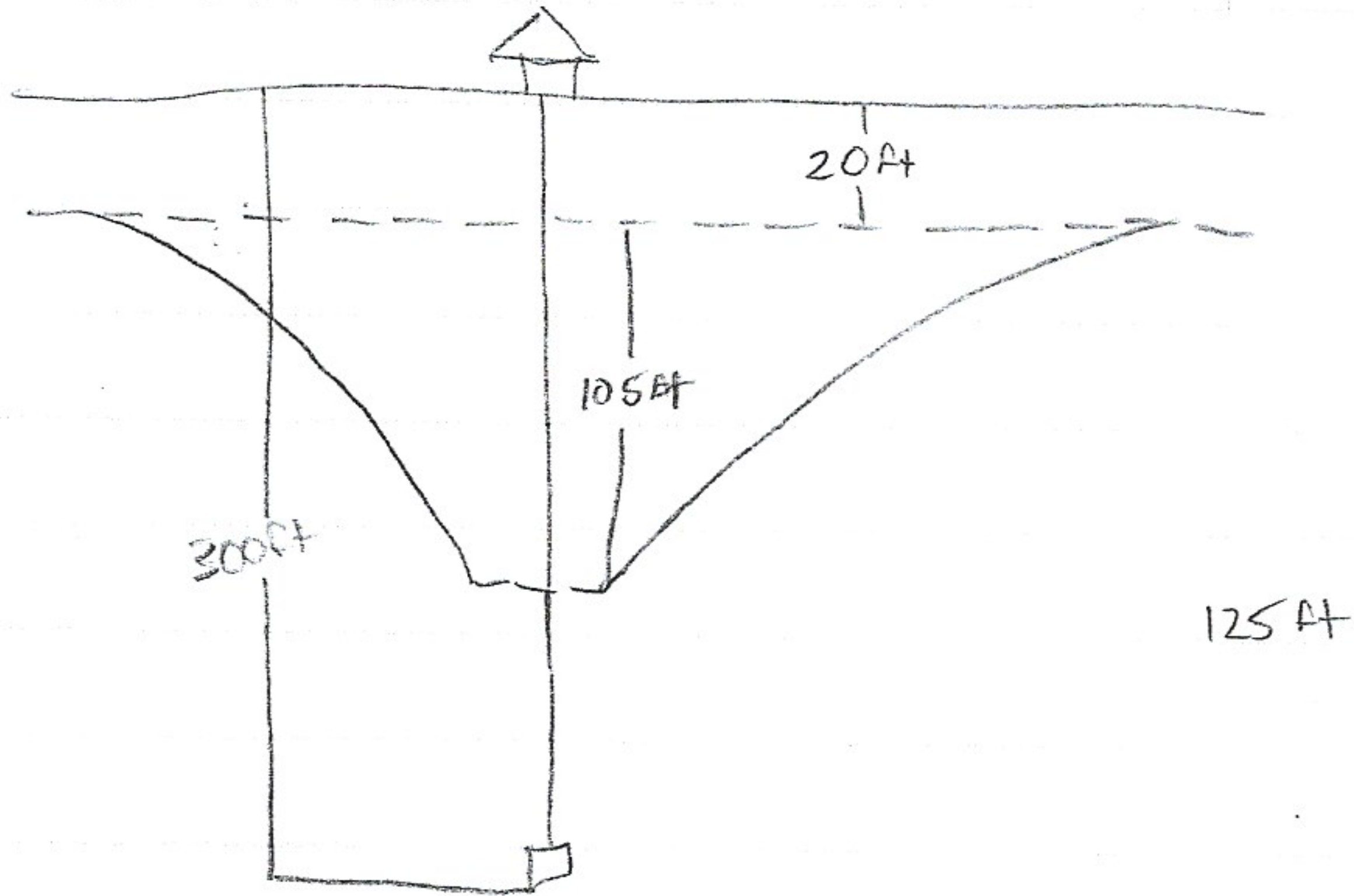
$$30. \quad \frac{850 \text{ GAL}}{1 \text{ MG}} \times \frac{1440 \text{ MG}}{1 \text{ DAY}} \times \frac{1 \text{ mg}}{1,000,000 \text{ GAL}} = 1.224 \text{ MGD}$$

$$\frac{1.224 \text{ MGD} \times 0.8 \text{ mg/L} \times 8.34}{0.65} = 12.56 \text{ lbs/day}$$

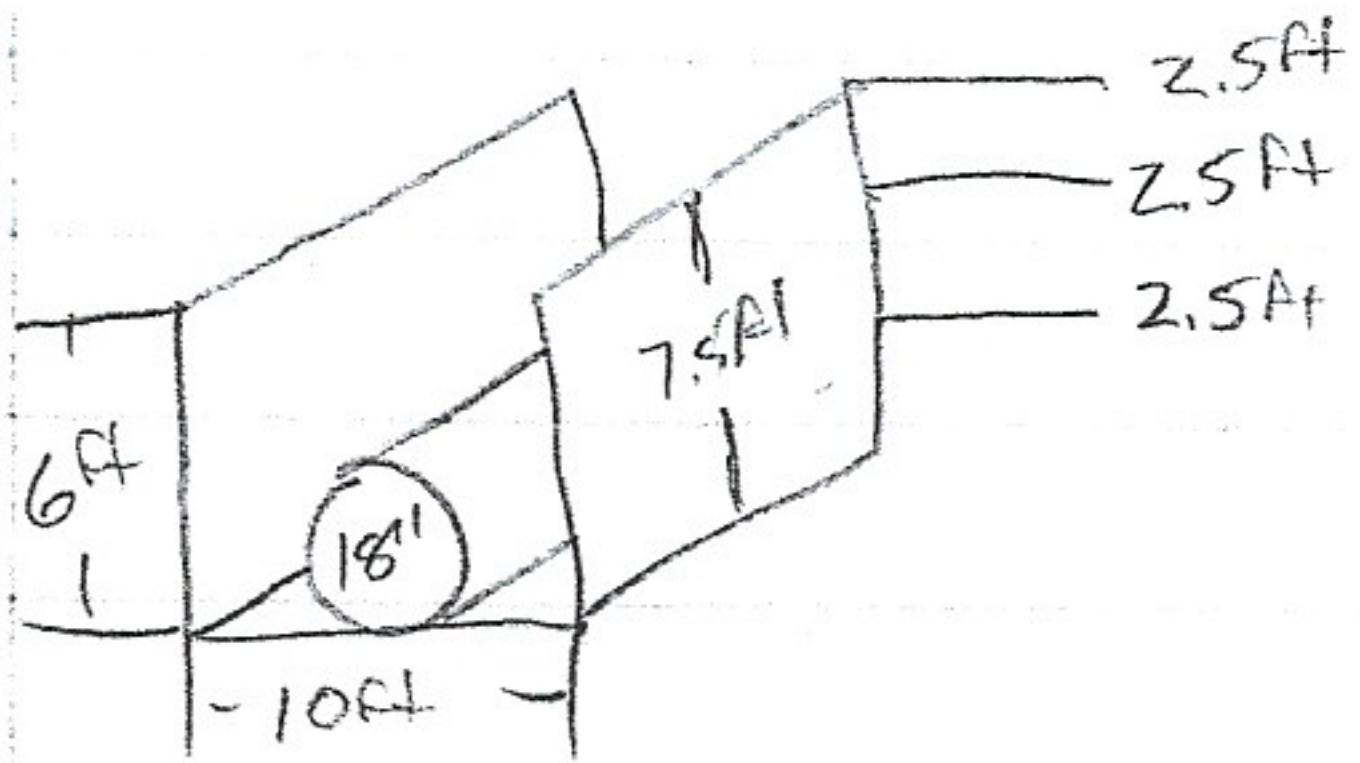
$$31. \quad \frac{2 \text{ MGD} \times 2.5 \text{ mg/L} \times 8.34}{0.10} = 417 \text{ lbs/day}$$



32.



33.



$$12 \sqrt{18} = 1.5$$

$$\frac{0.7854}{1} \times \frac{1.5 \text{ ft}}{1} \times \frac{1.5 \text{ ft}}{1} \times \frac{5280 \text{ ft}}{1} = 9,331 \text{ ft}^3$$

$$\frac{5280 \text{ ft}}{1} \times \frac{10 \text{ ft}}{1} \times \frac{7.5 \text{ ft}}{1} = 396,000 \text{ ft}^3$$

$$396,000 \text{ ft}^3 - 9,331 \text{ ft}^3 = 386,669 \text{ ft}^3$$

$$\frac{386,669 \text{ ft}^3}{1} \times \frac{1 \text{ yd}^3}{27 \text{ ft}^3} = \boxed{14,321 \text{ yd}^3}$$