

Rock Wall Calculations

Trappers Ridge

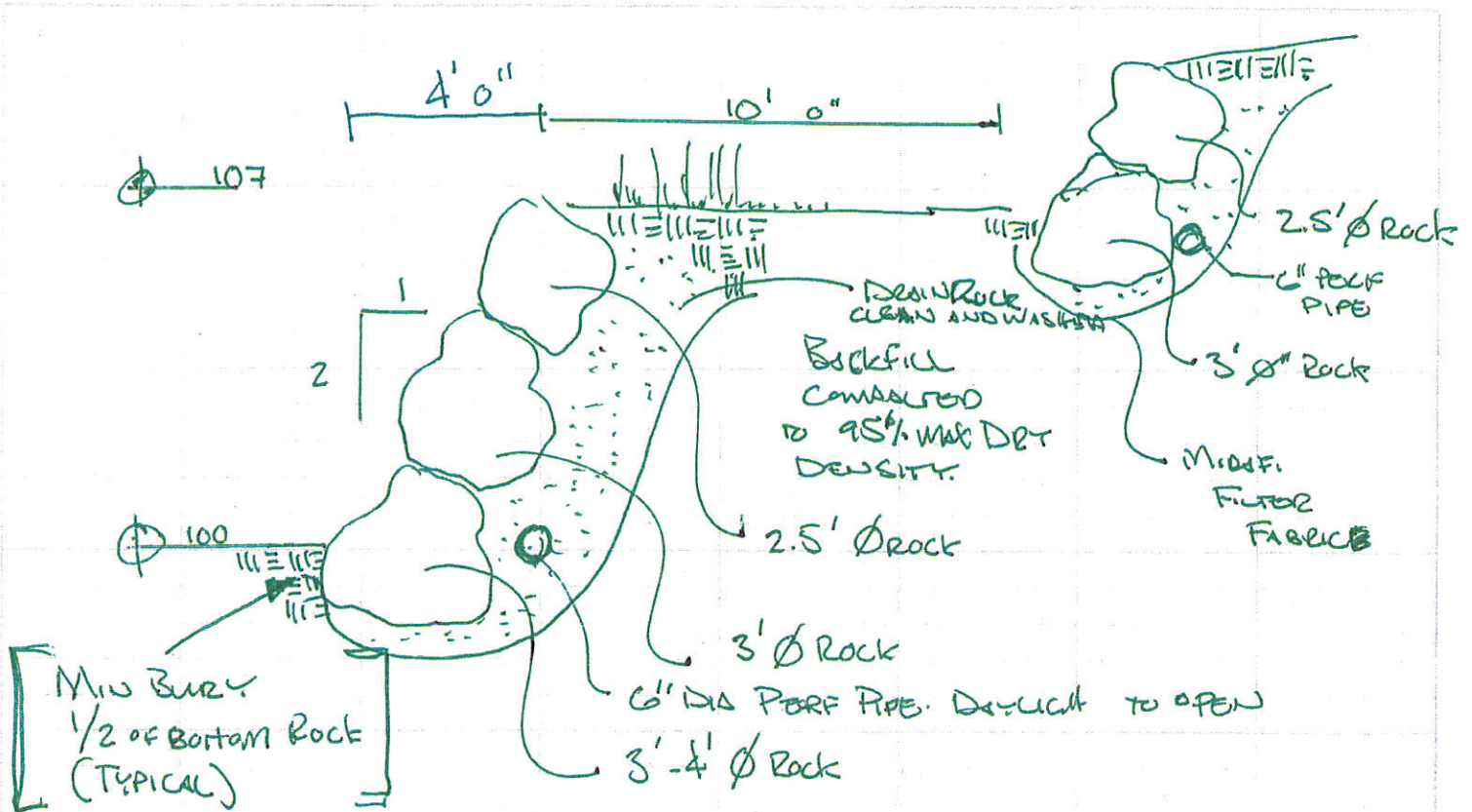
Eden, Utah

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Galloway
Planning Architecture Engineering



Bottom Section

$$\gamma_{soil} = 115 \text{ PCF}$$



$$\gamma_{Rock} = 150 \text{ PCF}$$

$$\mu_{Rock-Rock} = 0.40$$

$$K_a = 0.15 \text{ (From Sloping wall U&W FAC PM 7.2.66)}$$

$$R_H = \frac{1}{2} (7') (7') (115 \text{ PCF}) (0.15) = 422.625 \text{ LBS/FT.}$$

$$\text{RESISTANCE} = \left(\frac{3}{2}\right)^2 \pi (150 \text{ PCF}) (0.40) (2) \text{ BETWEEN BOTTOM RAILS} = 848 \text{ LBS/FT}$$

$$F.S. = \frac{848 \text{ LBS/FT}}{422.6} = 2.0 > 1.5 \text{ OK.}$$

Top Section

$$R_H = \frac{1}{2} (4)(4)(115)(0.15) = 138 \text{ LBS/FT}$$

$$\text{RESISTANCE} = \left(\frac{2.5}{2}\right)^2 \pi (150 \text{ PCF}) (0.40) = 294 \text{ LBS}$$

$$F.S. = \frac{294}{138} = 2.13 > 1.5 \text{ OK}$$