**Drainage Easement Width Calculations:**

**Culvert Easement Width Calculation:**

Culverts will require an easement dependent upon the following equation:

\[ W_c = (O.D. + (2.5' \times 2)) + ((\text{Depth of Trench} \times 2) + (12' + 5')) \text{ Rounded up to the next 5'} \text{ increment.} \]

Where: 
- \(O.D.\) = Outside Diameter of the pipe  
- \((2.5' \times 2)\) = 30” either side of the pipe  
- \((\text{Depth of Trench} \times 2)\) = 1:1 Slope of trench on either side of the pipe  
- 12’ = Access for equipment  
- 5’ = Access opposite side of equipment access

**Ditch Easement Width Calculations:**

Ditches (greater than 3’ of depth) will require an easement dependent upon the following equation:

\[ W_d = B + ((\text{Depth of Trench} \times 2) + (12' + 5')) \text{ Rounded up to the next 5'} \text{ increment.} \]

Where: 
- \(B\) = Bottom width of the ditch  
- \((\text{Depth of Trench} \times 4)\) = 2:1 Slope of the trench on each side  
- 12’ = Access for equipment  
- 5’ = Access opposite side of equipment access

**Swale Easement Width Calculations:**

Swales (3’ of depth or less) will require an easement dependent upon the following equation:

\[ W_s = (\text{Depth of Swale} \times 6) + 10' \text{ Rounded up or down to a 5'} \text{ increment.} \]

Where: 
- \((\text{Depth of Swale} \times 6)\) = 3:1 Slope of the swale on each side  
- 10’ = 5’ access on each side