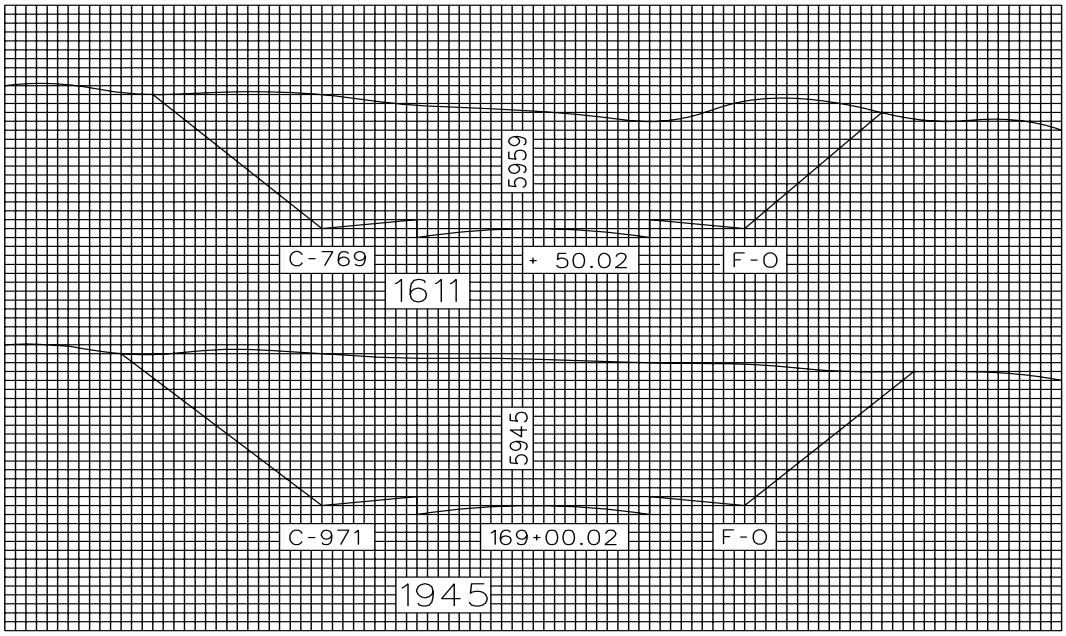

The cut area of station 163+00.02 is 971 square feet, and the area of station 169+50.02 is 769 square feet. To find the average area of the two, we would add the two and divide by two.

$$\text{Thus, } \frac{971 + 769}{2} = \frac{1740}{2} = 870 \text{ Sq. Ft. (average)}$$

Now we must find the volume of the area between the two stations. The cross section has an average of 870 square feet and there is 50 feet between stations. Therefore, 870 multiplied by 50 equals 43,500 cubic feet to be removed from between these stations.

In order to arrive at 1611 cubic yards (this is the unit used as a basis of payment in earthwork) we divide the 43,500 cubic feet by 27, since there are twenty-seven cubic feet in one cubic yard.

The formula used to determine the volume of earthwork is called the AVERAGE END AREA METHOD and is noted below. Examine it closely.

$$\text{Volume} = \frac{L\ (A' + A'')}{2 \times 27}$$

L = distance between stations
A' = area of one station
A'' = area of second station
2 gets the average of A' & A''
27 converts cubic feet to cubic yards

EXAMPLE

$$\text{Volume} = \frac{50\ (971 + 769)}{2 \times 27} = 1611$$

FIGURE D-4 EARTHWORK QUANTITY COMPUTATIONS