

Western Underground Committee Guide _____ JOINT USE TRENCH COSTING FORMULA

NOTE: This "Guide" summarizes the opinions, recommendations and practices of the Western Underground Committee members as constituted at the time of issue and is issued only to assist these members in preparing their own specifications, or in making recommendations to specification agencies. Therefore, this "Guide" may not reflect the complete requirements of each member utility and is not binding upon them.

1. SCOPE

This guideline defines the formula to be used to proportion the appropriate share of the costs of an underground trench used by multiple utilities.

2. Referenced Standards

National Electrical Safety Code (NESC)

3. Requirements

Each utility shall determine the width & depth of a trench required for that utilities facilities alone. Trench widths shall be in standard increments of 6, 12, 18, 24 in. The minimum depth of burial shall be as specified by the NESC table 352-1.

<u>CLASS</u>	<u>DEPTH (In.)</u>
0 - 600 V.	24
601 – 50,000 V.	30
50,001 – Above	42

The minimum separation between the utilities sharing the joint use trench shall be 12 inches. NESC rule 320B OR 353.

The proportion of the total trenching cost applicable to each of the utilities occupying a joint use trench shall be:

$$\text{Power Co. \%} = \frac{\text{PW} \times \text{PD}}{\text{PW} \times \text{PD} + \text{TW} \times \text{TD} + \text{CW} \times \text{CD} + \text{OW} \times \text{OD}} * 100\%$$

$$\text{Telephone Co. \%} = \frac{\text{TW} \times \text{TD}}{\text{PW} \times \text{PD} + \text{TW} \times \text{TD} + \text{CW} \times \text{CD} + \text{OW} \times \text{OD}} * 100\%$$

$$\text{CATV Co. \%} = \frac{\text{CW} \times \text{CD}}{\text{PW} \times \text{PD} + \text{TW} \times \text{TD} + \text{CW} \times \text{CD} + \text{OW} \times \text{OD}} * 100\%$$

$$\text{Other Co. \%} = \frac{\text{OW} \times \text{OD}}{\text{PW} \times \text{PD} + \text{TW} \times \text{TD} + \text{CW} \times \text{CD} + \text{OW} \times \text{OD}} * 100\%$$

Where: P = Electric Power Company T = Telephone Company
C = Cable TV Company O = Other Company
W = Width of trench required for individual utility (6, 12, 18, 24 In.)
D = Depth of trench required for individual utility (NESC table 352-1)

The total cost of the joint use trench includes the cost for excavation, backfill, compaction, barricading, site security, plating, shoring, permitting, and inspection.

If material and/or labor is supplied by one utility for the benefit of another utility, the full costs associated with that supplied shall be added to the applicable joint use trench cost.

This method of cost allocation may also be applied to trenchless installations (E.G. Boring)

Example:

Planned Communication Co. facilities: 1-2 In. conduit

Dimensions required for separate trench:

Width 1(2.5 In.) = 2.5 In. → 6 In. standard

Depth 24 In. + 2.5 In. = 26.5 In.

Planned Power Co. facilities: 15 kV class 3-3 In. conduit

Dimensions required for separate trench:

Width 3(3.5 In.) = 10.5 In. → 12 In. standard

Depth 30 In. + 3.5 In. = 33.5 In.

Communication Co. % = $[6(26.5)/(12(33.5)+6(26.5))] * 100\% = 28\%$

Power Co. % = $[12(33.5)/(12(33.5)+6(26.5))] * 100\% = 72\%$

Note: Using the 12 In. separation between facilities as required by NESC rule 320B or 353 the overall joint trench dimension is:

Width 12 In.

Depth 24 In. + 2.5 In. + 12 In. + 3.5 In. = 42 In.