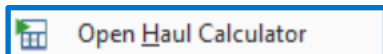


QUICK GUIDE HAUL & TRENCH CALCULATORS



HAUL CALCULATOR – CALCULATE QUANTITY OF TRUCKS

1. From the Estimate tab, select **Cost Breakdown Structure (CBS)**.
2. Open a cost item and select the **Detail tab**.
3. Right click on an equipment resource and select **Open Haul Calculator**.



4. On the Haul Calculator, select the **Calculate quantity of ETDT required to complete haul in duration entered below** radio button.

☒ Calculate quantity of ETDT required to complete haul in duration entered below
☐ Calculate total duration of haul using quantity of ETDT entered below

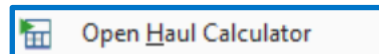
5. Enter values for:

| | |
|--------------------------------|-------|
| Quantity (Ton) | 35000 |
| Haul Distance - One Way (Mile) | 10.00 |
| Average Payload (Ton) | 15.00 |
| Total Loads 2,333.33 | |
| Load Time (Minutes) | 4.00 |
| Travel Speed Full (Mile/Hour) | 35.00 |
| Dump Time (Minutes) | 3.00 |
| Travel Speed Empty (Mile/Hour) | 45.00 |
| Cycle Time (Minutes) | 37.48 |
| Work Efficiency (%) | 85.00 |

6. Click **OK**.

HAUL CALCULATOR – CALCULATE TOTAL DURATION

1. From the Estimate tab, select **Cost Breakdown Structure (CBS)**.
2. Open a cost item and select the **Detail tab**.
3. Right click on the row header and select **Open Haul Calculator**.



4. On the Haul Calculator, select the **Calculate total duration of haul using quantity of ETDT entered below** radio button.

☐ Calculate quantity of ETDT required to complete haul in duration entered below
☒ Calculate total duration of haul using quantity of ETDT entered below

5. Click **OK**.

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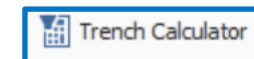


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TRENCH CALCULATOR – TRENCH

1. From the Estimate tab, select **Cost Breakdown Structure (CBS)**.
2. Create a new cost item from the bottom row of your CBS for your trench activity.
3. Open the cost item's record.
4. Right-click on the cost item to Insert Resource for the material being excavated

5. On the Actions tab, select **Trench Calculator**.



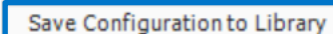
6. On the Trench tab, enter the trench Variables.

| | |
|----------------------------------|----------------|
| Variables | |
| Trench length: | 0.00 feet |
| Trench width (at bottom): | 0.00 feet |
| Trench depth: | 0.00 feet |
| Hinge elevation: | 0.00 feet |
| Backslope: | 0.00 degrees |
| Material swell/shrinkage factor: | 0.00 (decimal) |

7. Check the box for either a neat-line result or one that includes swell/shrinkage.

| | |
|--|--|
| Total excavation volume (neat-line): 0.00 | Total excavated volume (including swell/shrinkage): 0.00 |
| Use this volume as the quantity on this cost item <input type="checkbox"/> | Use this volume as the quantity on this cost item <input type="checkbox"/> |

8. Click **Save Configuration to Library** and name your configuration, then click **OK**.



QUICK GUIDE

HAUL & TRENCH CALCULATORS



These steps assume you already created a configuration for trench.

TRENCH CALCULATOR – PIPE

1. Open your pipe-related Cost Item Record.
2. On the Actions tab, select **Trench Calculator**.
3. Select **Load Configuration from Library**.
4. Select the configuration you created for trench.
5. Click **OK**.
6. On the Trench Calculator, select the **Pipe** tab and enter your pipe variables.

Variables

Pipe exterior diameter: 26.00 inches

Pipe center elevation (from bottom): 19.00 inches

Waste factor: 0.00 %

7. Click on the resource icon to pull up the Resource Rate Register.

Results

Total pipe to purchase: 1,000.00 LF

Use Total Pipe To Purchase as the quantity on this resource (on this cost item):

8. From the Installed Material tab, select your pipe resource, then click OK.

9. Click **Save Configuration to Library** and save the configuration, changing the name if needed.

Save Configuration to Library

10. Click **OK** to close the Trench Calculator.

TRENCH CALCULATOR – BEDDINGS

1. Open your cost item for backfilling trench.
2. From the Cost Item Record's Actions tab, select **Trench Calculator**.
3. Select **Load Configuration from Library**.
4. Select the configuration you created for trench, then click **OK**.
5. On the Trench Calculator, select the **Beddings** tab.

6. On the Beddings tab, you can define up to four beddings to backfill the trench.

Bedding Lift 1 Bedding Lift 2 Bedding Lift 3 Bedding Lift 4

7. For each Bedding Lift, enter variables.

Variables

Elevation (from trench floor): 6.00 inches

Additional material needed to compensate for compaction: 5.00 %

Conversion factor (TON per CY): 1.60

8. Under Results, select resource icon to add a bedding material resource based on either volume or weight.

Results

Lift Volume: 77.78 CY

Use Lift Volume as the quantity on this resource (on this cost item):

Lift Weight: 124.44 Tons

Use Lift Weight as the quantity on this resource (on this cost item):

9. After adding variables and bedding resources for each bedding lift, click **OK**.

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