

Chapter 2 Units of Measure

2.1 Abbreviations

Listed below are selected abbreviations used in the Basis of Estimates. For a more complete list of abbreviations, refer to Design Standards, Index No. 001.

NOTE: Pay item descriptions shown on various reports may be abbreviated as needed to fit “long” and “short” description fields of 80 and 40 characters, respectively. While every effort is made to be consistent, the abbreviated descriptions may vary from those shown on the Design Standards.

Abbreviation	Unit of Measure	Precision
AC	Acre	0.01
AS	Assembly*	1
CF	Cubic Foot	0.1
CY	Cubic Yard	0.1
DA	Day	1
EA	Each	1
ED	Each Day	1
GA	Gallon	1
GM	Gross Mile	0.001
HR	Hour	1
LB	Pound	1
LF	Linear Foot	1
LO	Location	1
LS	Lump Sum	1
LU	Luminaire*	1
MB	Board Measure/ Thousand Feet	0.1
MH	Man-hour**	1
MI	Mile	1
PI	Per Intersection*	1
PS	Per Set*	1
SF	Square Foot	1
SY	Square Yard	1
TN	Ton	0.1
YD	Yard	1

*Units which may be replaced with unit of Each (EA) upon pay item/specification review

** Units may be replaced with Hour (HR), upon pay item/specification review.

Secondary Units may apply to Lump Sum (LS) pay items. When a lump sum pay item has secondary units other than lump sum (LS/LS), the designer must enter the estimated

quantity into the Designer Interface. Estimating reports will show the secondary units for estimating purposes. The Project Summary, Proposal Summary, and other bid document reports will show the LS units with a quantity of 1.

Example: 102-1-1 Maintenance of Traffic, LS/DA has a secondary unit of days. After the designer enters the number of MOT days for that project number, estimating reports will show the number of days while the Proposal Summary of Quantities will show 1 LS.

Additional guidance for pay items with secondary units may be included with the pay item number details.

2.2 PRECISION AND ROUNDING

Precision is noted on the abbreviations table above. Calculations are performed with one additional significant figure, and then rounded to the above precision for measurement/payment.

As a quick guide, all units are paid to the nearest whole number, except for:

0.1: Cubic Yard, Cubic Foot, Tons, MB lumber

0.01: Acre

0.001: Gross Mile Stripe

Rounding shall be completed in accordance with the common rule: If the number you are rounding is followed by 5, 6, 7, 8, or 9, round the number up. If the number you are rounding is followed by 0, 1, 2, 3, or 4, round the number down. DO NOT use “up rounding”, which will always round up the next value. For example: A calculated total of 132.3 ft should be shown as 132 ft, and NOT up rounded to 133 ft.

2.3 CONVERSION FACTORS

Linear Measure

25.4 mm/in

0.03937 in/mm

0.3048 m/ft

3.2808 ft/m

0.9144 m/yd

1.0936 yd/m

1.609 km/mi

0.621 mi/km

Area Measure

9 ft²/yd²

0.836 m²/yd²

1.2 yd²/m²

0.40 ha/ac
4047 m²/ac
2.477 ac/ha
43,560ft²/ac
4840 yd²/ac
640 ac/mi²
0.386 mi²/km²
2.590 km²/mi²

Volume, Liquid Measure

1728 in³/ft³
0.028 m³/ft³
0.765 m³/yd³
27 ft³/yd³
0.2642 gal/l
3.785 l/gal

Force, Weight Measure

2.205 lb/kg
1.10 TN/MT
0.907 MT/TN (short ton)
2000 lb/ton (short ton)
1000 kg/MT

Additional items may be added upon request.

Chapter 2 Revision History

10-25-16: Updated header dates for 2017 edition. Added abbreviations and rounding information. Removed discontinued section 2.4 Accuracy/Precision information updated in 2.1 and 2.2.

3-14-16: Added information for secondary units to 2.1.

2-1-16: Added note for removal of alphabetical list.

11-25-15: Updated header dates for 2015 edition. Corrected AC unit of measure to 1/100 AC.

12-30-14: Updated header dates for 2015 edition. Added end date to PM unit; refer to Rumble Strip pay items for details.

2-27-14: Removed units for Clean-out (CO), Bushel (BU), Dollars per Day (DD), Luminaire (LU),

12-2-13: Updated header dates for 2014 edition. Added note to 2.1 to indicate that abbreviated text for pay item descriptions may vary from with Design Standards. Moved Alphabetical list from Chapter 3 to 2.4.

2-20-13: Updated header dates for 2013 edition.

11-23-11: Updated header dates for 2012 edition.

12-1-10: Updated header dates for 2011 edition.

10-30-09: Updated header dates for 2010 edition.

1-28-09: Added 2.2 Accuracy. Renumbered 2.3 Conversion Factors.

10-1-2008: Updated header dates for 2009 edition.