

CONE12 Chapter 7 Sign Design Guide

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Introduction

The Cone Chapter 7 Sign Design tools enable the CONE end user to design a large range of traffic signs using the design rules as documented in Chapter 7 of the Traffic Signs Manual

Traffic signs are created in CONE by firstly placing and arranging Text Legends, Symbols Arrows, Route Arms, Roundabouts, Route Patches and Panels as required and then FINALISING the sign which adds the background plate in the appropriate colour and style along with other finishing options.

Cone Sign Design includes tools to help set the appropriate horizontal and vertical spacing, positioning and alignments, but does not check that they are correctly spaced or aligned at Sign FINALISATION time.

It is entirely possible for you to move objects out of alignment (see example below), so we recommend that whilst using Cone Sign Design you refer to Chapter 7 of the Traffic Signs Manual

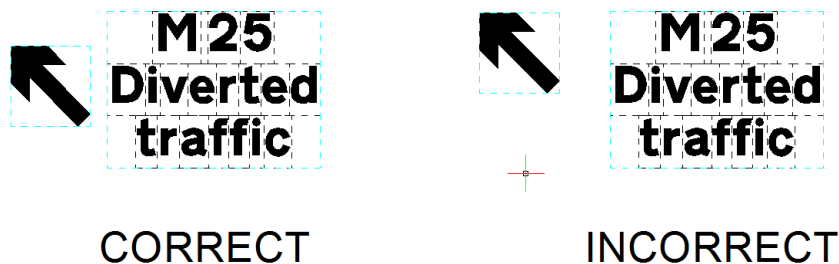
<https://www.gov.uk/government/publications/traffic-signs-manual>

and

<https://www.gov.uk/government/collections/traffic-signs-signals-and-road-markings>

and

[Traffic Signs Regulations and General Directions 2016](#)



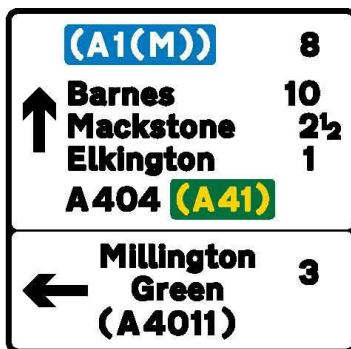
Typical range of signs for temporary and event signs – Transport Heavy – (Black text on yellow or white backgrounds) and Transport Medium (White text on red or blue backgrounds)



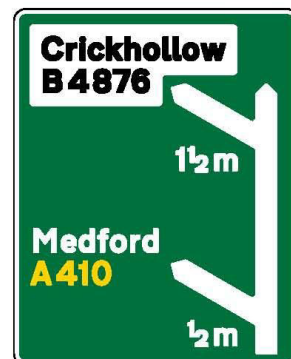
Typical range of signs for permanent direction signs– Transport Heavy – (Black text on light backgrounds) and Transport Medium (White text on dark backgrounds)



2005



2103



2013 (variant)



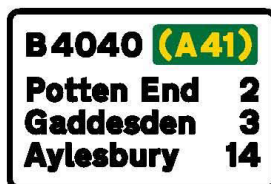
2903



2019 (variant)



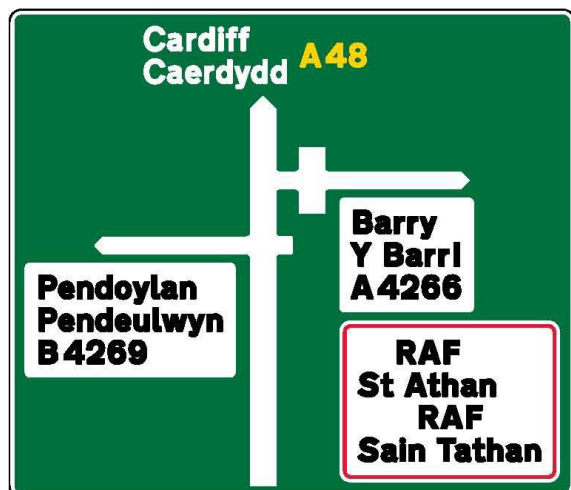
2215



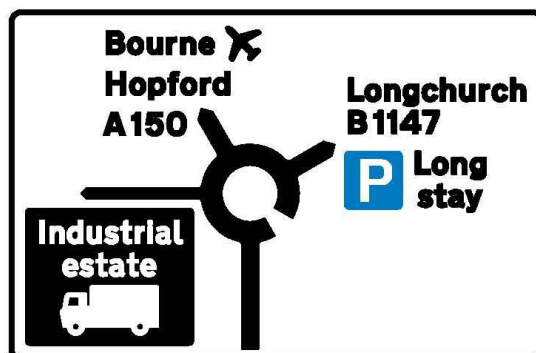
2805



2902 (variant)



WAG 2008



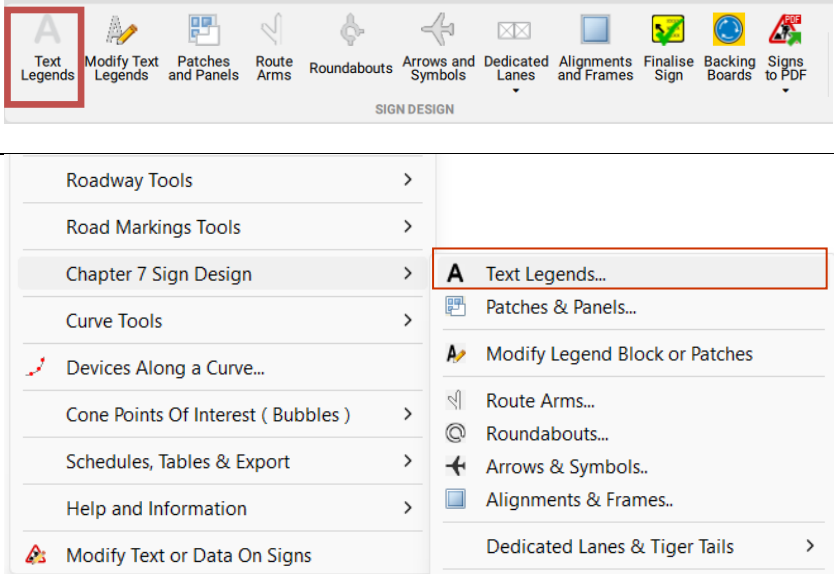
2805

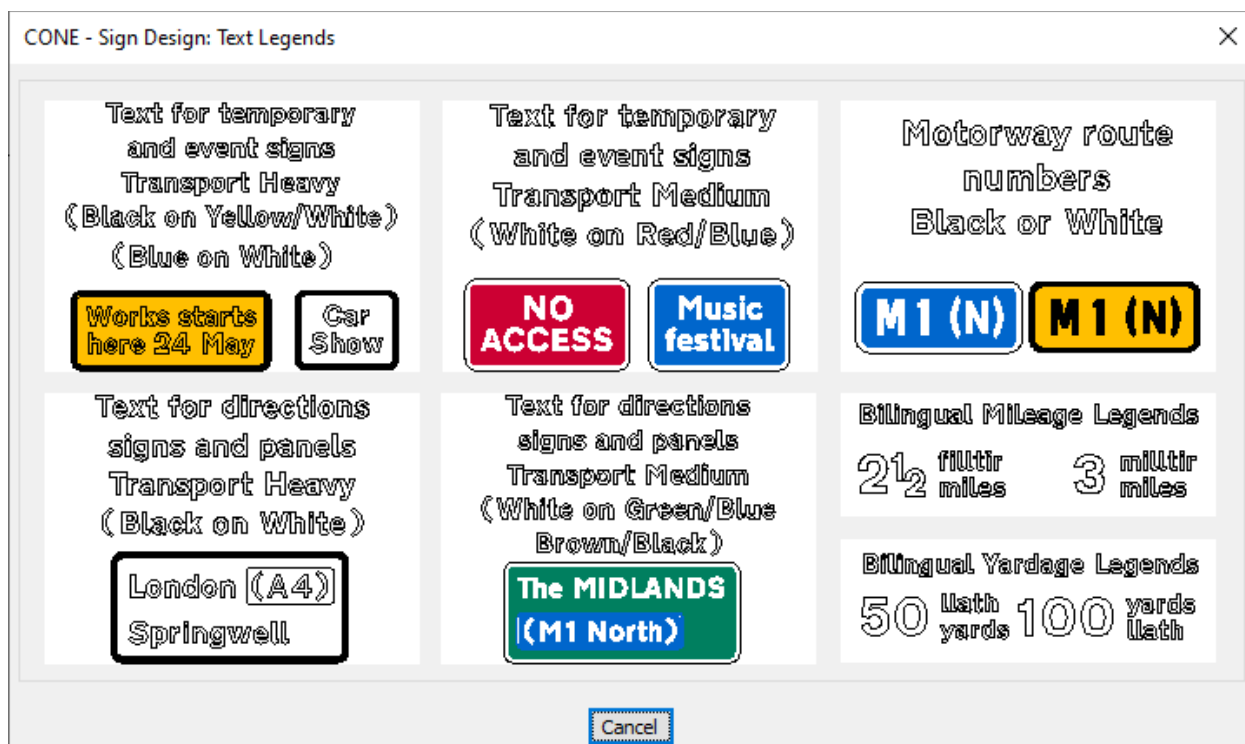


2125



Text Legends

Command: CUKTLEGENDS RIBBON: CONE12 Roads_SIGN DESIGN CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_Sign_Design_Tools	



There are seven types of text legends that can be created with CONE

Text for temporary and event signs - Transport Heavy (Black text on yellow or white backgrounds)

Text for temporary and event signs - Transport Medium (White text on red or blue backgrounds)

Motorway route numbers - Transport Heavy or Medium (Black on yellow backgrounds or white on blue)

Text for permanent direction signs - Transport Heavy (Black text on white backgrounds)

Text for permanent direction signs - Transport Medium (White text on dark backgrounds)

Bilingual Mileage Legends

Bilingual Yardage Legends

Note: The Transport Heavy and Transport Medium types are interchangeable; you may use either to create the appropriate text for use on the appropriate background; however each tool has a different application as described in the following paragraphs.

The alphanumeric text characters used on traffic signs are based on the special transport alphabet font set (See Traffic Signs Manual: Chapter 7: Page 11)

There are two main font sets

Transport Heavy (Black characters on white or yellow backgrounds)

Transport Medium (White characters on green, red, blue, brown or black backgrounds)

In addition there are two special font sets for motorways signs

Motorway White (White characters on a blue background)

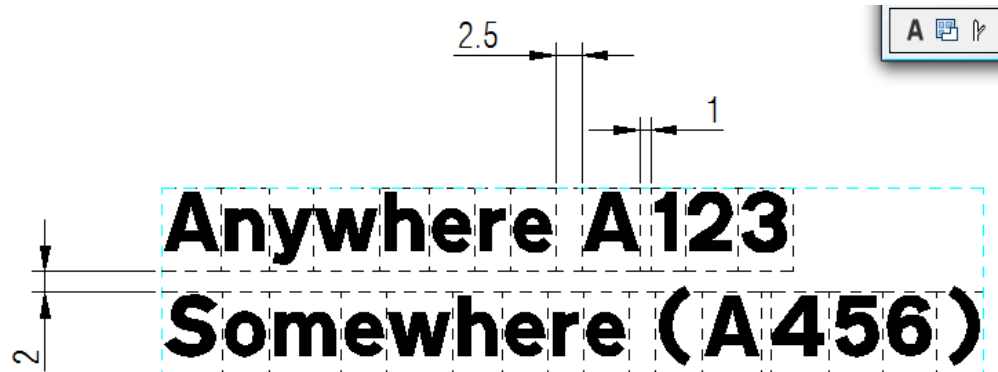
Motorway Black (Black characters on a yellow background)

It is important to note that these fonts are NOT standard systems fonts, you cannot use them in normal text editing (as you would for Arial or Verdana etc.)

Cone Sign Design provides text legend entry tools for each of the above fonts; each individual character is contained within an 8 stroke width high tile block, the tool strings together the individual character blocks to make up text legend blocks

The horizontal character or word spacing and the vertical line/block spacing are governed by the rules as defined in Chapter 7 except for signs with their own special design rules.

Examples of horizontal character/word and vertical line spacing

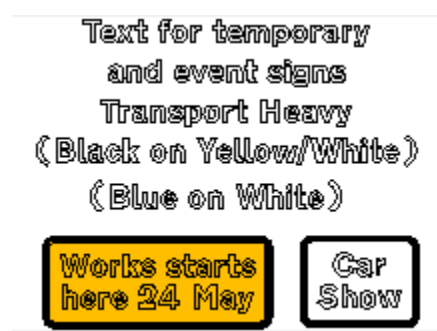


Some examples of the types of signs created with this text legend entry dialog are on page 3

These types of temporary signs have in some cases slightly different vertical line spacing rules to permanent type signs, they do not normally contain route patches or distances and the text is generally centre justified

Both tools (Transport Heavy or Medium) for text legends for temporary road works and event signs are similar in operation; select the tool that is appropriate to the intended background colour of the finished sign

Transport Heavy
(Black characters on white or yellow backgrounds)



Transport Medium (White characters red or blue)



Picking either of the icons will load the appropriate text entry dialog which is explained in detail in the following pages:

Text for Temporary and Event Signs - Transport Heavy

Horizontal Spacing (stroke widths): If the Auto Kerning checkbox is enabled the legend tool auto inserts the correct horizontal character and word spacing.

If left un-checked then spaces need to be manually input as follows:

- 0.5 sw use the < key
- 1.0 sw use the | key
- 1.5 sw use the > key
- 2.5 sw use the spacebar

Note: See Traffic Signs Manual Chapter 7 pages 12 and 13 for horizontal spacing rules

Text entry: Up to 8 lines of text may be entered (no spell checking is provided)

Alignment: The line alignment: Left, Centre or Right justified, (normally centre for temporary signs)

Scale: The line scale as a percentage of the x-height (normally 100%)

Vspace: (Vertical Line Spacing): The vertical spacing between each pair of lines

If the vertical spacing is 0 (zero) then each line of text will be butted together vertically with no gap.

Legend Text	VSpace	Preview
Legend	0	Legend Legend Legend
Legend	0	
Legend	0	

Example If you enter a value in the Vspace edit boxes

Legend Text	VSpace	Preview
Legend	1	Legend Legend Legend
Legend	1	
Legend	0	

There are however three circumstances where the legend tool will automatically insert a 0.5 or a 1.0sw vertical space.

Bracketed route number below:

Legend
(A12)
0.5 sw
(bracketed route no.)

Reduced text height:

Matwell
avoiding low bridge
B2199
0.5

Reduced text height and bracketed route number below:

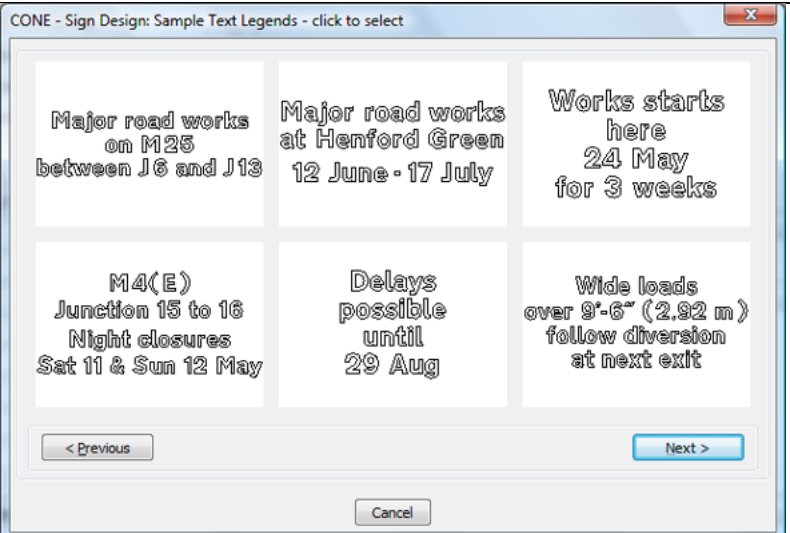
Matwell
avoiding low bridge
(A235)
1

Sample Legends...

Sample Legends:

Select this button to open a sub-dialog window and choose from a range of pre-defined text legends which will be inserted into the main dialog text entry boxes, any current text entries, vertical spacing and scale settings will be reset to suit the sample legend selected.

(Pick the desired icon to select)



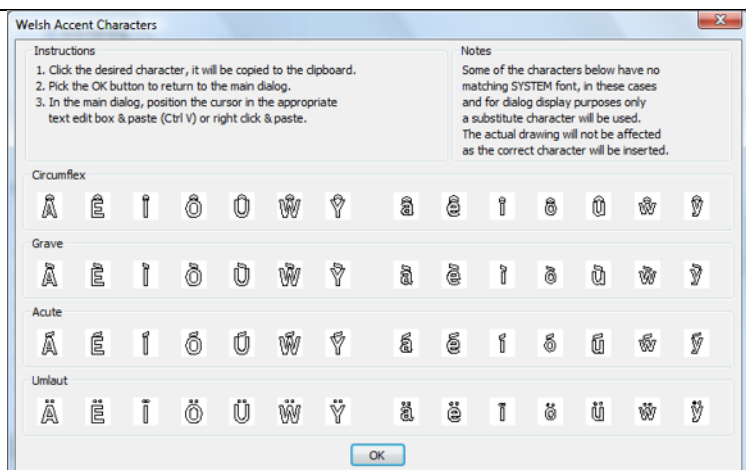
Fractions and Accents

Welsh Accents...

Welsh Accents: Pick this button to open a sub-dialog window and choose from a range of special Welsh language accent characters.

Pick the desired character icon as required. This action will copy the character to the clipboard ready for pasting. Select the **OK** button to return to the main dialog window.

Position the cursor in the desired position in the text entry box and either press (Ctrl + V) or right click and select paste from the menu that appears.

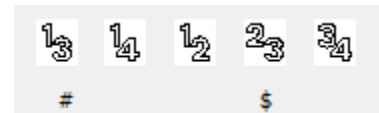


Note: Some of the Welsh accent characters have no matching operating system font, in these cases a substitute character will be shown in the text entry dialog; the actual legend when positioned on the drawing will show the real character.

Fractions:

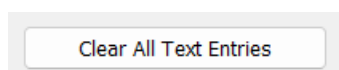
Pick the desired fraction icon as required.

This action will copy the character to the clipboard ready for pasting.

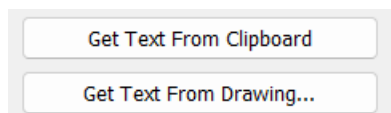


Position the cursor in the desired position in the text entry box and either press (Ctrl + V) or right click and select paste from the menu that appears.

Note: The 1/3rd and 2/3rds characters have no matching operating system font, in these cases a substitute character will be shown in the text entry dialog, the actual legend when positioned on the drawing will show the real character.



Clear All Text Entries: Pick this button to clear all current text entries and reset the Vertical Space, Scale and Alignment values to their default values.

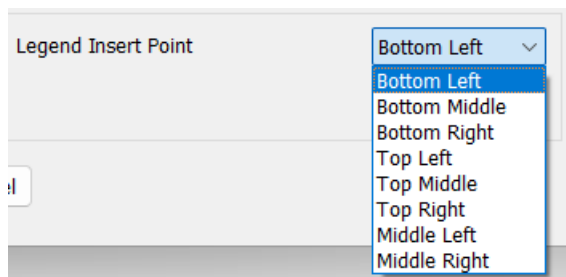


Get Text from Clipboard and Get Text From Drawing

Text that you have entered into an editor such as Notepad or Word can be copied to the Clipboard and passed into the text entry boxes by selecting **Get Text From Clipboard** or you can select any normal TEXT or MTEXT object you have on your drawing and pass the into the text entry boxes by selecting **Get Text From Drawing**

Legend Insert Point:

Choose the block reference point when positioning the text legend on the drawing from this pop-up list.



To Insert the text legend: Pick the **OK** button to create the text legend block and place on your drawing, or pick **Cancel** to discard.

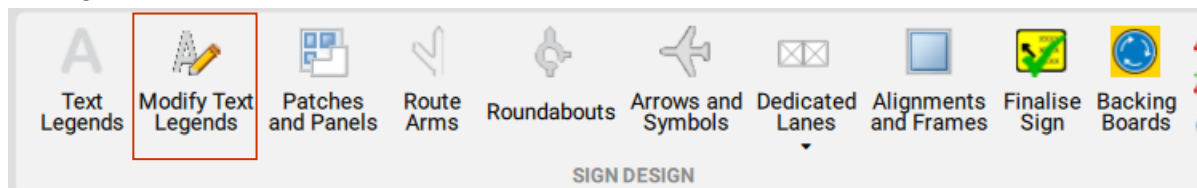
The **OK** button saves the current legend entry settings and these will become the default setting the next time you use the tool in the current drawing session.

Example Text Legend after insertion on a drawing

M4(E)
Junction 15 to 16
Night closures
Sat 11 & Sun 12 May

You can make changes to legends using using the command CUKMODLEGEND or

RIBBON

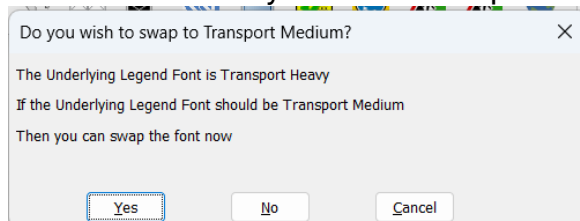


TOOLBAR



Often the reasons for modifying is that you have used Transport Heavy instead of Transport Medium or vice-versa by mistake

The tool will ask if you wish to swap the Font before loading the appropriate dialog box



Text for Temporary and Event Signs - Transport Medium

Cone Legend Text: Transport Medium: White text on Red/Blue/Black/Brown/Green backgrounds

Horizontal Spacing (stroke widths)

☒ Auto Kerning
Auto Kerning is ON
Use the spacebar ONLY to enter horizontal spaces

0.5 sw <
1.0 sw |
1.5 sw >

Legend Preview (Aprox)

NO
ACCESS
TO
A|616>(E)

Legend Text

NO
ACCESS
TO
A|616>(E)

VSpace

0
0
0
0
0
0

Alignment

☐ L ☒ C ☐ R
☐ L ☒ C ☐ R
☐ L ☒ C ☐ R
☐ L ☒ C ☐ R
☐ L ☒ C ☐ R
☐ L ☒ C ☐ R
☐ L ☒ C ☐ R

Scale

100
100
100
100
100
100
100

Fractions and Accents

Welsh Accents...

Welsh Translations

Excel... HTML... PDF...

1₃ 1₄ 1₂ 2₃ 3₄

\$

1. Click a character above
2. Position the cursor in the appropriate text edit box & paste (Ctrl V) or right click

Clear All Text Entries

Get Text From Clipboard

Legend Insert Point

Bottom Left

Sample Legends...

Get Text From Drawing...

OK Cancel

The layout and usage of the Text for Temporary and Event signs Transport Medium dialog is the same as the: Text for Temporary and Event signs Transport Heavy dialog except that there is a different set of Sample Legends and generally you would upper case text

See previous section for detailed guidance

Text for Direction Signs - Transport Heavy

Line Grouping and Vertical Line Spacing

The **Line Grouping** checkbox assigns two or more lines to a group (usually a single destination spread over two or more lines)

Vspace: (Vertical Line Spacing):

The vertical spacing between each pair of lines.

If the vertical spacing is 0 (zero) then the vertical line spacing is auto calculated for vertical block spacing.

If the vertical spacing is greater than zero the space you enter is created between each line

Example 1:

Aylesbury and **A|41** are entered in the legend text boxes.

Vspace is set to zero (auto calculate vertical block spacing mode) & the two lines are not grouped. This results in a vertical space of 2sw between the lines which is correct for vertical block spacing but not what is required

Line Grouping	VSpace	Legend Text
Group 1 & 2 ☒	0.0	1 Aylesbury
Group 2 & 3 ☐	0.0	2 A 41
Group 3 & 4 ☐	0.0	3

Aylesbury
A 41

Here the only difference is that the Line Grouping checkbox for the two lines is set to ON. The tool now treats the two lines as a single destination, this results in a zero vertical space between the lines which is correct.

Example 2:

Lutterworth, Market, Harborough and **A427** are entered in the legend text, **Market Harborough** is a single destination and as such those two lines of text should be centre justified to each other.

Group	VSpace	Legend Text	Route Patch	Dist	Alignment
☐ >>>	0.0	Lutterworth			☒ L ☐ C ☐ R
☒ >>>	0.0	Market			☐ L ☒ C ☐ R
☐ >>>	0.0	Harborough			☒ L ☐ C ☐ R
☐ >>>	0.0	A 427			☒ L ☐ C ☐ R

By grouping the lines **Market** and **Harborough** and setting the justification of **Market** to centre, instructs the legend tool that **Market** and **Harborough** are a single destination and that **Market** is centre justified with respect to **Harborough** (because Harborough is the longest text in the group). **Harborough** itself is left justified, vertical spacing is set to zero (auto calculate vertical block spacing mode).

Lutterworth
Market
Harborough
A 427

Horizontal Spacing (stroke widths): If the Auto Kerning checkbox is enabled the legend tool auto inserts the correct horizontal character and word spacing. If left un-checked then spaces need to be manually input as follows:

0.5 sw use the < key
 1.0 sw use the | key
 1.5 sw use the > key
 2.5 sw use the spacebar

Note: See Traffic Signs Manual Chapter 7 pages 10 and 11 for horizontal spacing rules

Horizontal Spacing (stroke widths): If the Auto Kerning checkbox is enabled the legend tool auto inserts the correct horizontal character and word spacing. If left un-checked then spaces need to be manually input as follows:

- 0.5 sw use the < key
- 1.0 sw use the | key
- 1.5 sw use the > key
- 2.5 sw use the spacebar

Note: See Traffic Signs Manual Chapter 7 pages 12 and 13 for horizontal spacing rules

Legend Text: Up to 8 lines of text may be entered (no spell checking is provided)

Route Patches:

Route patches can be defined in the legend text entry boxes by surrounding the text with [()] Examples [(A123)] , [(A1(M))]

Route patches that include a capital M are assumed to be motorway route numbers (white on blue)

[(A 1 (M))] Barnes Mackstone Elkington A 404 [(A 41)]	(A1(M)) Barnes Mackstone Elkington A404 (A41)
--	--

You can also add a route patch at the end of a text entry line and it will be vertically centred to the legend text it is associated with:

Line Grouping -----	VSpace -----	Legend Text	Route, Patch, Symbol	Dist	Alignment
Group 1 & 2 ☒	0.0	1 Somewhere	[(A 123)]		☒ L ☐ C ☐ R
Group 2 & 3 ☐	0.0	2 Anywhere			☒ L ☐ C ☐ R

Somewhere

Anywhere

(A123)

Symbols

The same principle applies to Symbols

In this example the symbol S21 is entered in the same legend text box as Bourne

Line Grouping	VSpace	Legend Text
Group 1 & 2	☐ 0.0	1 Bourne S21
Group 2 & 3	☐ 0.0	2 Hopwood
Group 3 & 4	☐ 0.0	3 A150
		4

Bourne 
Hopwood
A150

In this example the symbol S21 is entered Route Patch Symbol area

Line Grouping	VSpace	Legend Text	Route, Patch, Symbol
Group 1 & 2	☒ 0.0	1 Somewhere	S21
Group 2 & 3	☐ 0.0	2 Anywhere	
Group 3 & 4	☐ 0.0	3 Nowhere	

Somewhere 
Anywhere
Nowhere

Symbols...

There are a limited number of symbols that you can include as part of text legends
Each Symbol has a code assigned to it Example S21 for one of the aircraft symbols

CONE Sign Design: Symbols ✕


S10 S11 S12 S13 S14


S15 S16 S17 S18 S19


S20 S21 S22 S23 S24

Make a note of the Symbol Reference > S11, S12 etc
Close this dialog and then enter the reference
into the Legend Text or Route, Patch, Symbol edit boxes

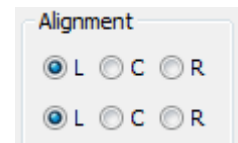
OK Cancel

Distance: Adds a distance at the end of text entry line



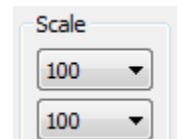
A control panel for distance settings. It has a title 'Dist' and two input fields. The first field contains the number '8' and the second field contains the number '10'.

Alignment: The line alignment: Left, Centre or Right justified,



An alignment control panel with a title 'Alignment'. It contains two rows of radio buttons. The first row has radio buttons labeled 'L', 'C', and 'R'. The second row also has radio buttons labeled 'L', 'C', and 'R'. The 'L' radio button in the first row is selected.

Scale: The line scale as a percentage of the x-height (normally 100%)



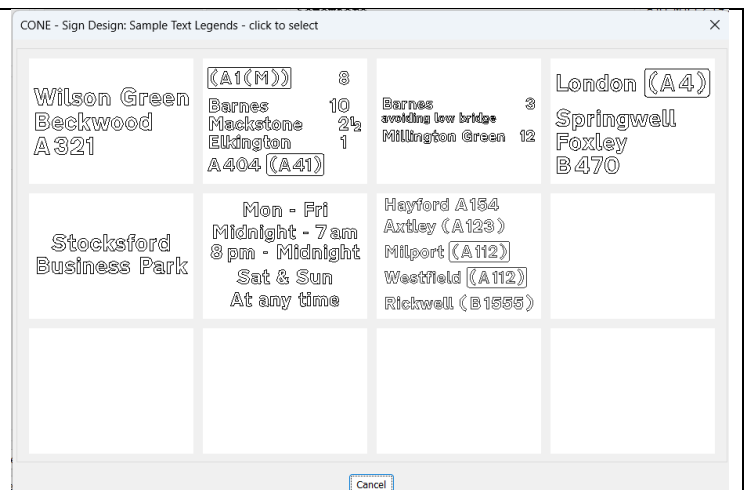
A scale control panel with a title 'Scale'. It contains two dropdown menus, both of which are currently set to '100'.

Sample Legends...

Sample Legends:

Select this button to open a sub-dialog window and choose from a range of pre-defined text legends which will be inserted into the main dialog text entry boxes, any current text entries, vertical spacing and scale settings will be reset to suit the sample legend selected.

(Pick the desired icon to select)

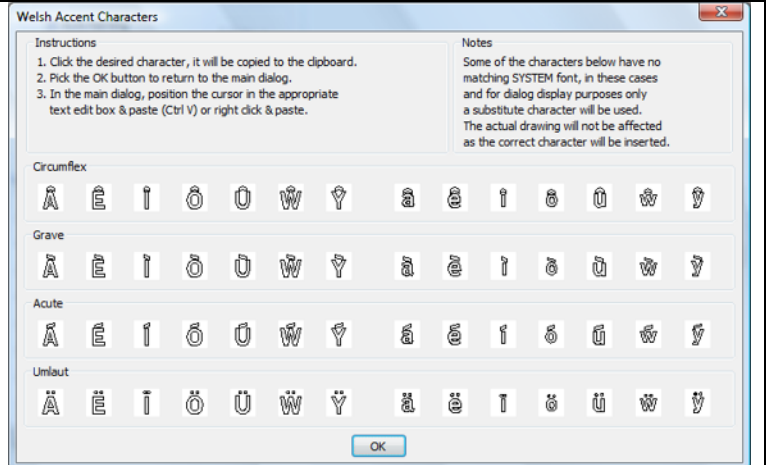


A dialog box titled 'CONE - Sign Design: Sample Text Legends - click to select'. It displays a grid of sample text legends. The legends are arranged in a 4x4 grid. The first row contains: 'Wilson Green', 'Beckwood A 321', 'Barnes A 404 (A 41)', and 'London (A 4)'. The second row contains: 'Stocksford Business Park', 'Mon - Fri Midnight - 7 am 8 pm - Midnight Sat & Sun At any time', 'Hayford A154 Axtley (A123) Milport (A112) Westfield (A112) Rickwell (B1555)', and 'Springwell Foxley B 470'. The third row contains: 'Barnes avoiding low bridge Millington Green 12', and two empty cells. The fourth row contains two empty cells. A 'Cancel' button is located at the bottom right of the dialog box.

Welsh Accents: Pick this button to open a sub-dialog window and choose from a range of special welsh language accent characters.

Pick the desired character icon as required. This action will copy the character to the clipboard ready for pasting. Select the **OK** button to return to the main dialog window.

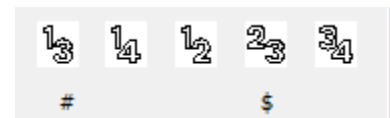
Position the cursor in the desired position in the text entry box and either press (Ctrl + V) or right click and select paste from the menu that appears.



Note: Some of the Welsh accent characters have no matching operating system font, in these cases a substitute character will be shown in the text entry dialog; the actual legend when positioned on the drawing will show the real character.

Fractions:

Pick the desired fraction icon as required. This action will copy the character to the clipboard ready for pasting.

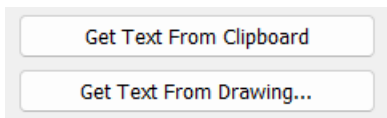


Position the cursor in the desired position in the text entry box and either press (Ctrl + V) or right click and select paste from the menu that appears.

Note: The 1/3rd and 2/3rds characters have no matching operating system font, in these cases a substitute character will be shown in the text entry dialog, the actual legend when positioned on the drawing will show the real character.

Clear All Text Entries

Clear All Text Entries: Pick this button to clear all current text entries and reset the Vertical Space, Scale and Alignment values to their default values.

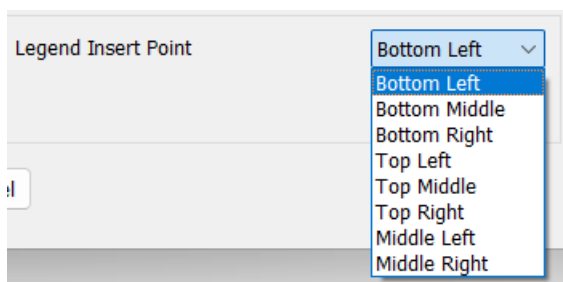


Get Text from Clipboard and Get Text From Drawing

Text that you have entered into an editor such as Notepad or Word can be copied to the Clipboard and passed into the text entry boxes by selecting **Get Text From Clipboard** or you can select any normal TEXT or MTEXT object you have on your drawing and pass the into the text entry boxes by selecting **Get Text From Drawing**

Legend Insert Point:

Choose the block reference point when positioning the text legend on the drawing from this pop-up list.



To Insert the text legend: Pick the **OK** button to create the text legend block and place on your drawing, or pick **Cancel** to discard.

Text for Direction Signs - Transport Medium

Cone Legend Text: Transport Medium Text on a Dark Backgrounds

Vertical Spacing (stroke widths)

If VSpace is set to 0.0 the vertical line spacing will be auto calculated

Block Grouping

To assign 2 or more lines to a group, toggle the Group checkbox between each pair of lines

Horizontal Spacing (stroke widths)

☒ Auto Kerning

Auto Kerning is ON

Use the spacebar ONLY to enter horizontal spaces

0.5 sw < 1.0 sw | 1.5 sw >

Legend Preview (Aprox)

The MIDLANDS

[(M|1 North)]

Derby A|38

Stoke (A|516)

Motorway Text Characters

A B E M 0 1 2 3 4 5 6 7 8 9 & () / ,

Capital T = Toll

Motorway Text Compass Characters

(N) = n (S) = s (E) = e (W) = w

(NW) = { (NE) = } (SW) = [(SE) =]

To specify Motorway Text Routes

Surround the route text with the ! character

Examples !M1!, !A57!, Sheffield !A61!

Route Patches : Surround the route with [()]

Examples: [(A123)] [(M456)] [(A1(M))]

Line Grouping ----- VSpace ----- Legend Text

Group	VSpace	Legend Text
Group 1 & 2	0.0	1 The MIDLANDS
Group 2 & 3	0.0	2 [(M 1 North)]
Group 3 & 4	0.0	3 Derby A 38
Group 4 & 5	0.0	4 Stoke (A 516)
Group 5 & 6	0.0	5
Group 6 & 7	0.0	6
Group 7 & 8	0.0	7
		8

Route, Patch, Symbol

Dist

Alignment

Scale

Symbols...

Fractions and Accents

Welsh Accents...

Welsh Translations

Excel... HTML... PDF...

1. Click a character above

2. Position the cursor in the appropriate text edit box & paste (Ctrl V) or right click

Insert Point

Bottom Left Offset Gap: 2.5

Clear All Text Entries

Get Text From Clipboard

Sample Legends...

Get Text From Drawing...

OK Cancel

The layout and usage of the Text for Direction Signs Transport Medium dialog is the same as the: Text for Temporary Direction Signs Transport Heavy dialog except that there is a different set of Sample Legends

See previous section for detailed guidance

Motorway Route Numbers

Cone Legend Text: Motorway - White or Black

White for blue backgrounds
Black for yellow backgrounds

Enter the following characters only
A B E M 0 1 2 3 4 5 6 7 8 9 & () / ,

Compass Points Characters

(N) = n	(NW) = {
(S) = s	(NE) = }
(E) = e	(SW) = [
(W) = w	(SE) =]

Horizontal Spacing (stroke widths)

☒ Auto Kerning

Auto Kerning is ON

Use the spacebar ONLY to enter horizontal spaces

1.0 sw |
1.5 sw >
4.0 sw <

Legend Text

M18

Text Color

☒ White ☐ Black

Legend Positioning Method

☐ Auto Placement (select another object) ☒ Manually Pick Insert Point

Auto Placement Position (referenced to selected object)

☒ Below Left ☐ Left ☐ Above Left
☐ Below Middle ☐ Above Middle
☐ Below Right ☐ Right ☐ Above Right

Manual Insert Point of Legend

Bottom Left

Offset Gap

2

OK Cancel

General Operation:

Enter the route number values as appropriate in the **Legend Text** entry box

Select the **Text Colour**: (White for blue backgrounds, black for yellow backgrounds)

Enter the desired gap in the **Offset Gap** entry box

Choose the desired **Legend Positioning Method**

Select the **OK** button to place the patch on your drawing

Legend Positioning Method:

Legend Positioning Method

☒ Auto Placement (select another object) ☐ Manually Pick Insert Point

Legends can be placed on a drawing manually (you pick the legend insert point on the drawing) or can be auto placed (you select a object on your drawing)

Auto Placement:

First select **Auto Placement** as the legend positioning method

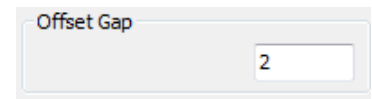
Then choose the desired position (with reference to the object on the drawing that you will select)

Auto Placement Position (referenced to selected object)

☒ Below Left ☐ Left ☐ Above Left
☐ Below Middle ☐ Above Middle
☐ Below Right ☐ Right ☐ Above Right

from the list of radio buttons:

Enter the desired gap in the **Offset Gap** entry box

A small dialog box titled "Offset Gap" with a text input field containing the number "2".

Example: To auto position a route number 2sw from the bottom left of a text legend, pick the **Bottom Left** radio button and then pick the **OK** button, the tool will respond thus:

Command: UKTLEGENDS Select object to align legend to:
Select the object to align the legend text to

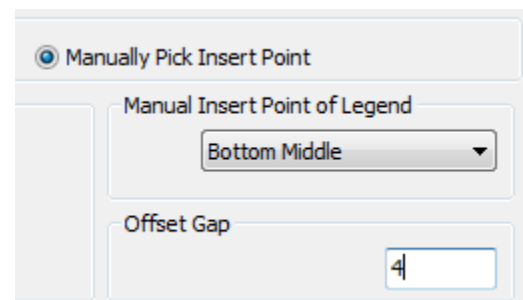


Manually Pick Insert Point:

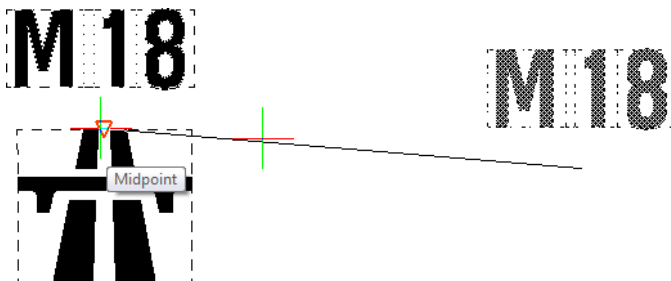
To manually position a text legend

First select **Manually Pick Insert Point** as the positioning method

Then pick an insert point option from the pop up list of insert points then enter the desired **Offset Gap**

A dialog box titled "Manually Pick Insert Point" with a radio button selected. It contains a dropdown menu for "Manual Insert Point of Legend" set to "Bottom Middle" and an "Offset Gap" input field containing the number "4".

Example: Insert point offset 4sw from the Bottom Middle of the text legend



Bilingual Mileage and Yardage Legends

Bilingual Mileage Legend [X]

Word Order
☐ Welsh/English
☒ English/Welsh

Distance:

Fraction
☒ None ☐ 1/4 ☐ 1/2 ☐ 3/4

Background Color of Sign or Panel
☐ Dark (Green, Blue, Brown, Red, Black)
☒ Light (White or Yellow)

Legend Positioning Method
☒ Auto Placement (select another object) ☐ Manually Pick Insert Point

Auto Placement Position (referenced to selected object)
☒ Below Left ☐ Left ☐ Above Left
☐ Below Middle ☐ Above Middle
☐ Below Right ☐ Right ☐ Above Right

Manual Insert Point of Legend
Top Middle [v]

Offset Gap



Bilingual Yardage Legend [X]

Word Order
☐ Welsh/English
☒ English/Welsh

Distance:

Background Color of Sign or Panel
☐ Dark (Green, Blue, Brown, Red, Black)
☒ Light (White or Yellow)

Legend Positioning Method
☒ Auto Placement (select another object) ☐ Manually Pick Insert Point

Auto Placement Position (referenced to selected object)
☒ Below Left ☐ Left ☐ Above Left
☐ Below Middle ☐ Above Middle
☐ Below Right ☐ Right ☐ Above Right

Manual Insert Point of Legend
Top Middle [v]

Offset Gap



General Operation:

Select the **Word Order** Welsh or English first

Enter a whole number value in the **Distance** entry box

Choose a **Fraction** or none if applicable

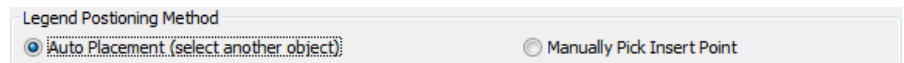
Select the **Background Colour of Sign or Panel**:

Choose the desired **Legend Positioning Method**

Enter the desired gap in the **Offset Gap** entry box

Select the **OK** button to place the legend on your drawing

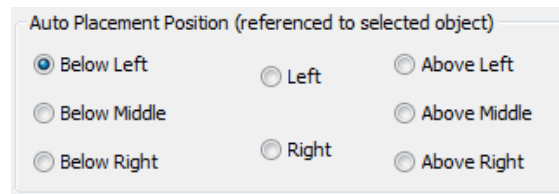
Legend Positioning Method:

A dialog box titled "Legend Positioning Method" with two radio buttons. The first radio button is selected and labeled "Auto Placement (select another object)". The second radio button is labeled "Manually Pick Insert Point".

Legends can be placed on a drawing manually (you pick the legend insert point on the drawing) or can be auto placed (you select a object on your drawing)

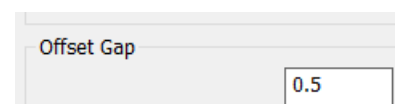
Auto Placement:

First select **Auto Placement** as the legend positioning method

A dialog box titled "Auto Placement Position (referenced to selected object)". It contains nine radio buttons arranged in a 3x3 grid. The first radio button, "Below Left", is selected. The other radio buttons are "Left", "Above Left", "Below Middle", "Above Middle", "Below Right", "Right", and "Above Right".

Then choose the desired position (with reference to the object on the drawing that you will select) from the list of radio buttons:

Enter the desired gap in the **Offset Gap** entry box

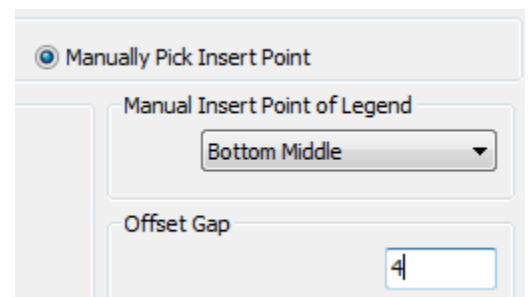
A small dialog box with the label "Offset Gap" and a text input field containing the value "0.5".

Manually Pick Insert Point:

To manually position a text legend

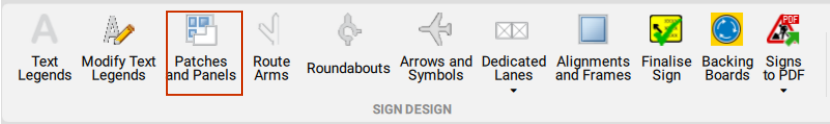
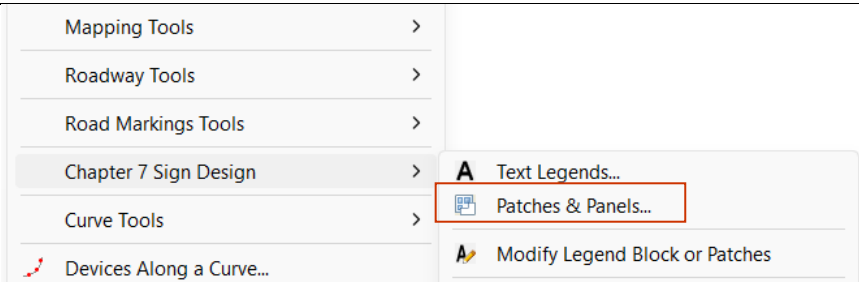
First select **Manually Pick Insert Point** as the positioning method

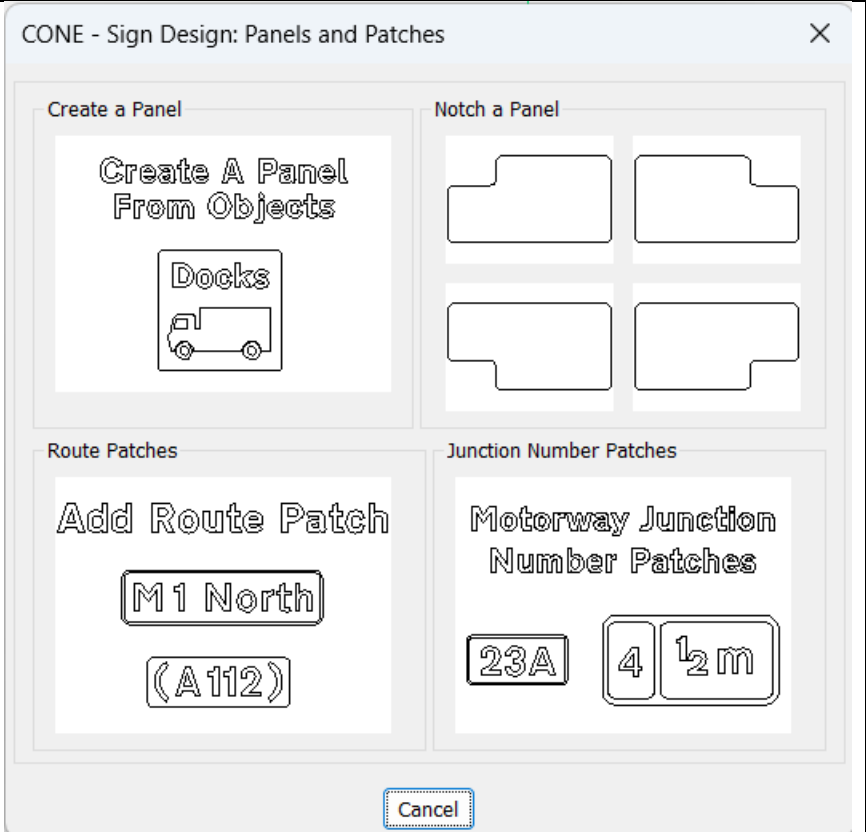
Then pick an insert point option from the pop up list of insert points then enter the desired **Offset Gap**

A dialog box titled "Manually Pick Insert Point". It has a selected radio button with the same label. Below it is a section titled "Manual Insert Point of Legend" containing a dropdown menu with "Bottom Middle" selected. At the bottom is an "Offset Gap" label and a text input field containing the value "4".

Press the OK button to proceed

Patches & Panels

Command: CUKPANELS RIBBON: CONE12 Roads_SIGN DESIGN CONE12UKBC Pull Down Menu	
	
TOOLBAR: CONE12_UK_Sign_Design_Tools	

There are seven tools in Panels and Patches: Create a panel from objects you have already added to your drawing (Text legends, symbols, arrows, patches etc.) Four notch a panel tools (Top left, top right bottom left and bottom right) Add a route number patch Add a motorway junction number patch	
---	---

Create a Panel from Objects

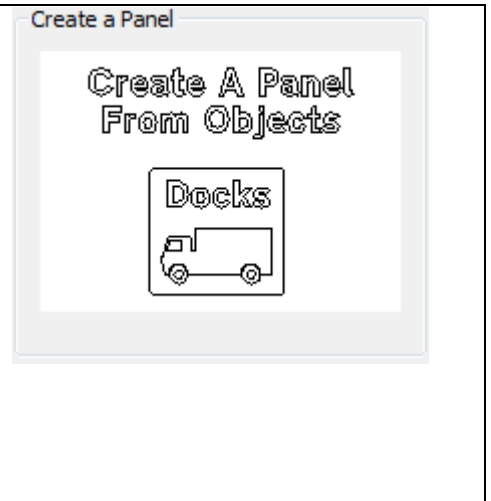
Create a panel from objects:

Pick the Create a Panel from Objects icon
The tool will respond :

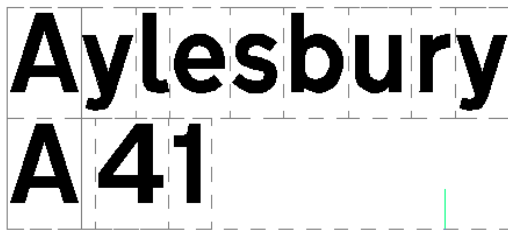
Command: *CPANELS*

CREATE A PANEL: Select all objects to include in the panel Select entities:

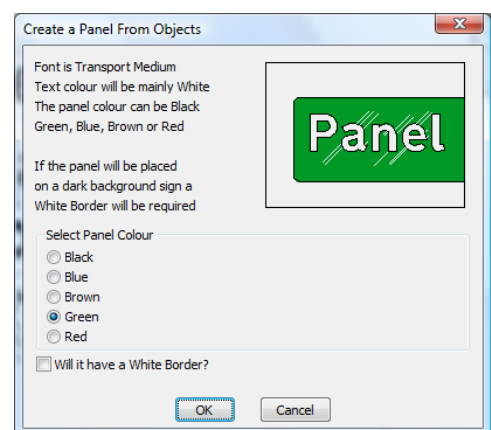
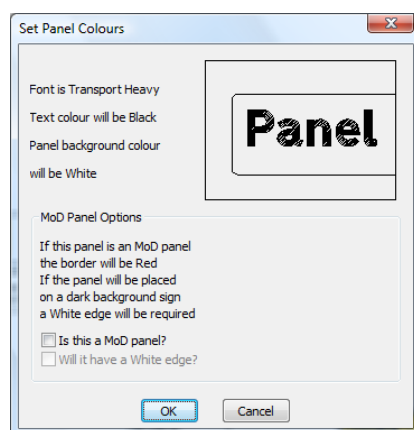
Use normal CAD selection methods to select all the objects to include in the panel and press the enter key when done selecting



Example



Depending on the primary font of the objects selected; the tool will next display one of the following dialogs



If the primary font is **Transport Heavy** the only options are MoD Panel options i.e. Is it a MoD panel (red border) and if so will it have a white edge (will the panel be placed on a dark background sign)

If the primary font is **Transport Medium** then you need to select the panel background colour and choose whether the panel will have a white border (will the panel be placed on a dark background sign)

Select the **OK** button to convert the objects selected to a panel

Examples

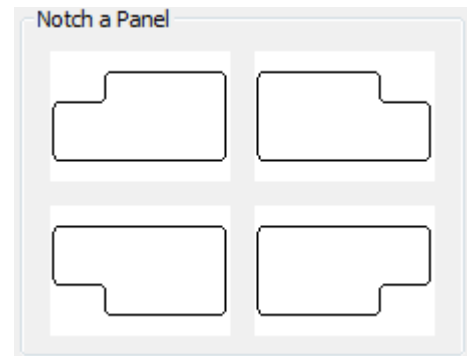
BEFORE



AFTER



Notch a Panel:



Pick one of the four **Notch a Panel** icons (example: bottom right) The tool will respond thus:

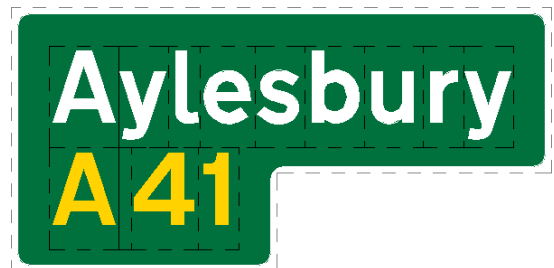
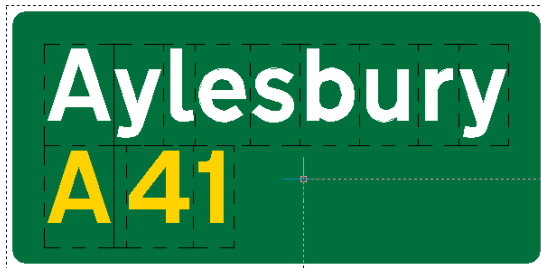
Command: *CPANELS*

Select an existing panel to add bottom right cut-out

Drag mouse to indicate notch position, pick point to finish

Select a panel and move your mouse, the cut out will be shown as a dotted line

Pick a point to finish



Note: Only one notch per panel is allowed, if you make a mistake simply select the notch a panel tool again The existing notch will be deleted and the new notch created

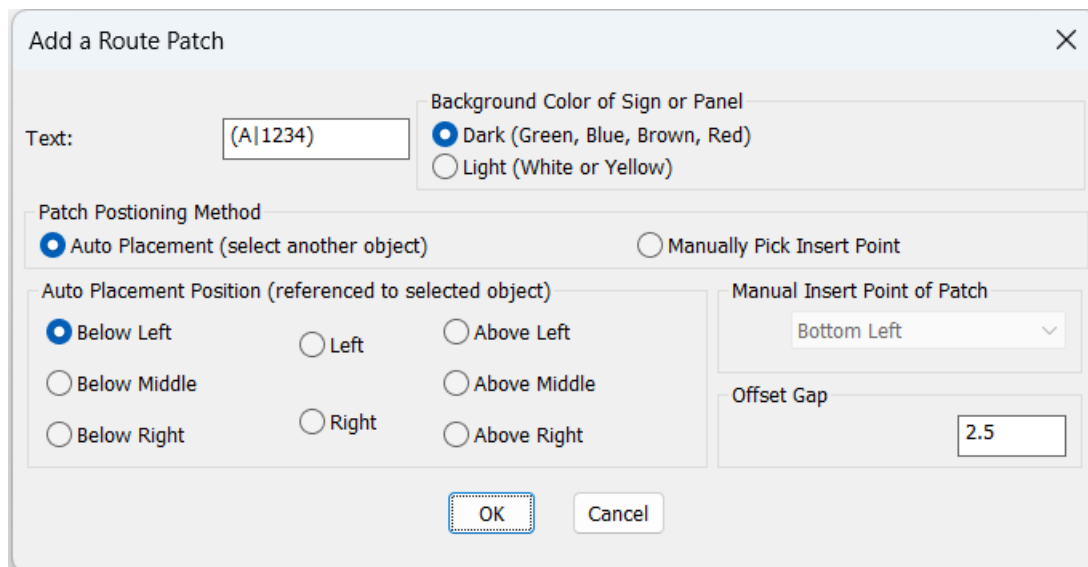
Route Patches:

To create a route patch pick the **Add a Route Patch** icon

(A1234)

(A1(M) North)

(M25)

A screenshot of the 'Add a Route Patch' dialog box. It contains several fields and options: a 'Text' field with '(A1234)', a 'Background Color of Sign or Panel' section with radio buttons for 'Dark (Green, Blue, Brown, Red)' (selected) and 'Light (White or Yellow)', a 'Patch Positioning Method' section with radio buttons for 'Auto Placement (select another object)' (selected) and 'Manually Pick Insert Point', an 'Auto Placement Position (referenced to selected object)' section with radio buttons for 'Below Left' (selected), 'Left', 'Above Left', 'Below Middle', 'Above Middle', 'Below Right', 'Right', and 'Above Right', a 'Manual Insert Point of Patch' dropdown menu set to 'Bottom Left', and an 'Offset Gap' field with '2.5'. At the bottom are 'OK' and 'Cancel' buttons.

Enter the desired route number in the **Text** entry box

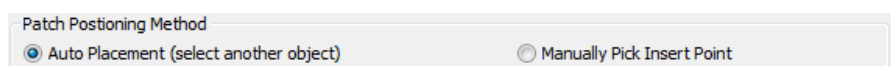
Choose the **Background Colour** of the sign or panel the route patch will be part of

Enter the desired gap in the **Offset Gap** entry box

Choose the desired **Patch Positioning Method**

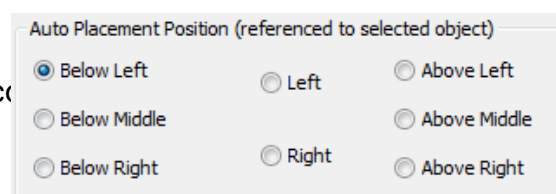
Select the **OK** button to place the patch on your drawing

Patch Positioning Method:

A screenshot of the 'Patch Positioning Method' section from the dialog box. It shows two radio buttons: 'Auto Placement (select another object)' which is selected, and 'Manually Pick Insert Point'.

Patches can be placed on a drawing manually (you pick the patch insert point on the drawing) or can be auto placed (you select a object on your drawing)

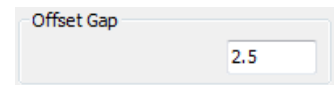
Auto Placement:

A screenshot of the 'Auto Placement Position (referenced to selected object)' section from the dialog box. It shows a grid of radio buttons for positioning: 'Below Left' (selected), 'Left', 'Above Left', 'Below Middle', 'Above Middle', 'Below Right', 'Right', and 'Above Right'.

First select **Auto Placement** as the patch positioning method

Then choose the desired position
(with reference to the object on the drawing
that you will select) from the list of radio buttons:

Enter the desired gap in the **Offset Gap** entry box

A small rectangular input field with the label "Offset Gap" and a text box containing the value "2.5".

Example: To auto position a patch 2.5sw from the bottom left of a text legend,
pick the **Bottom Left** radio button and then pick the **OK** button, the tool will respond thus:

Command: *CPANELS*

Select object to align patch to:

Select the object to align the patch to



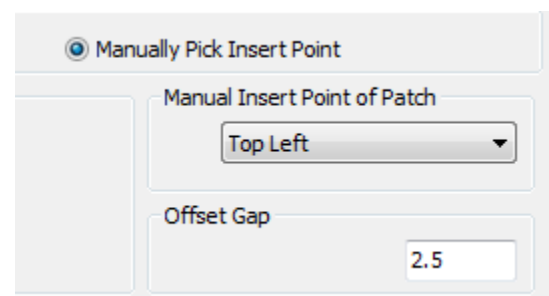
Manually Pick Insert Point:

To manually position a patch

First select **Manually Pick Insert Point** as the
patch positioning method

Then pick an insert point option from
the pop up list of insert points

then enter the desired **Offset Gap**

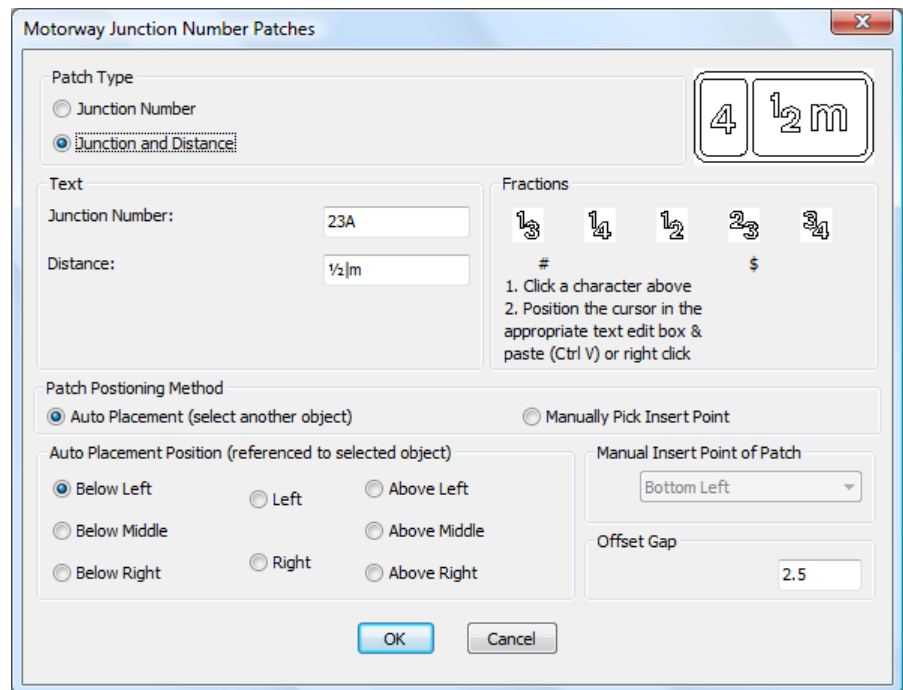
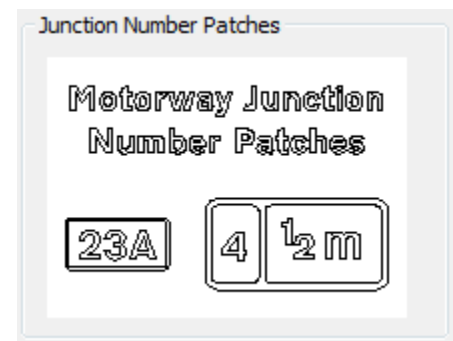
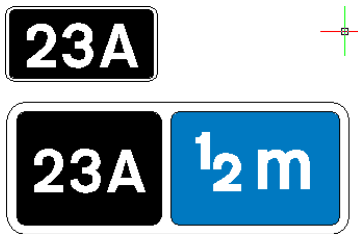
A dialog box titled "Manually Pick Insert Point". It contains a dropdown menu labeled "Manual Insert Point of Patch" with "Top Left" selected. Below the dropdown is an "Offset Gap" entry box with the value "2.5".

Example: Insert point offset 2.5sw from the Top Left corner of the patch



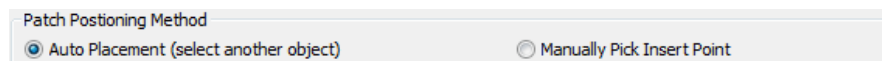
Motorway Junction Number Patches:

To create a motorway patch pick the Motorway Junction Number Patch icon



Select the **Patch Type**: Junction Number or Junction Number + Distance
Enter the Junction Number and Distance values as appropriate in the **Text** entry boxes Enter the desired gap in the **Offset Gap** entry box
Choose the desired **Patch Positioning Method**
Select the **OK** button to place the patch on your drawing

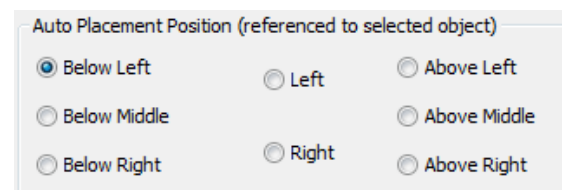
Patch Positioning Method:



Patches can be placed on a drawing manually (you pick the patch insert point on the drawing) or can be auto placed (you select a object on your drawing)

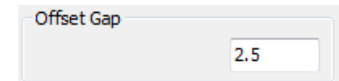
Auto Placement:

First select **Auto Placement** as the patch positioning method



Then choose the desired position (with reference to the object on the drawing that you will select) from the list of radio buttons:

Enter the desired gap in the **Offset Gap** entry box

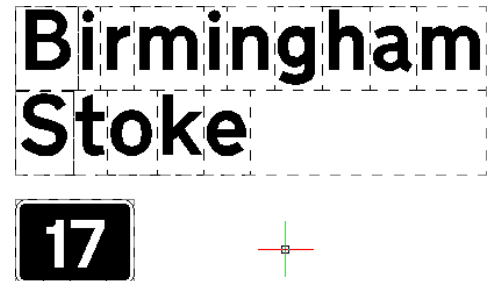
A small dialog box titled "Offset Gap" with a single text input field containing the value "2.5".

Example: To auto position a patch 2.5sw from the bottom left of a text legend, pick the **Bottom Left** radio button and then pick the **OK** button, the tool will respond thus:

Command: *CPANELS*

Select object to align patch to:

Select the object to align the patch to

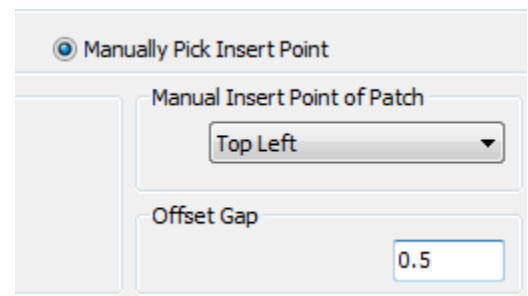


Manually Pick Insert Point:

To manually position a patch

First select **Manually Pick Insert Point** as the patch positioning method

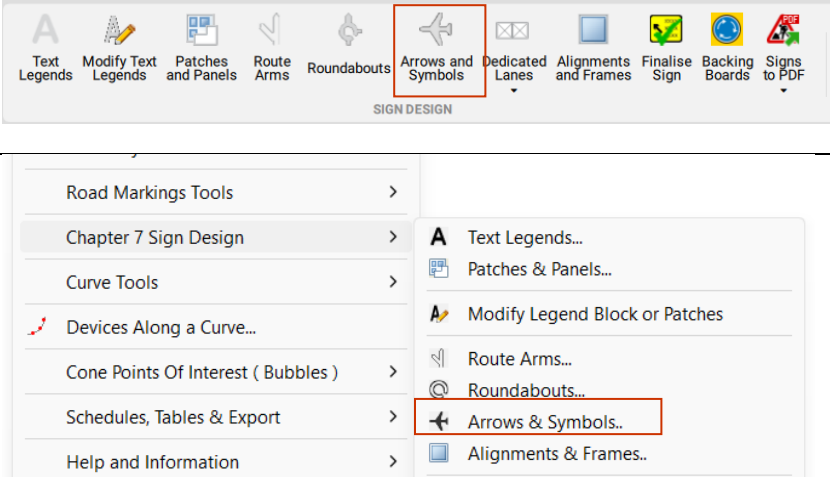
Then pick an insert point option from the pop up list of insert points then enter the desired **Offset Gap**

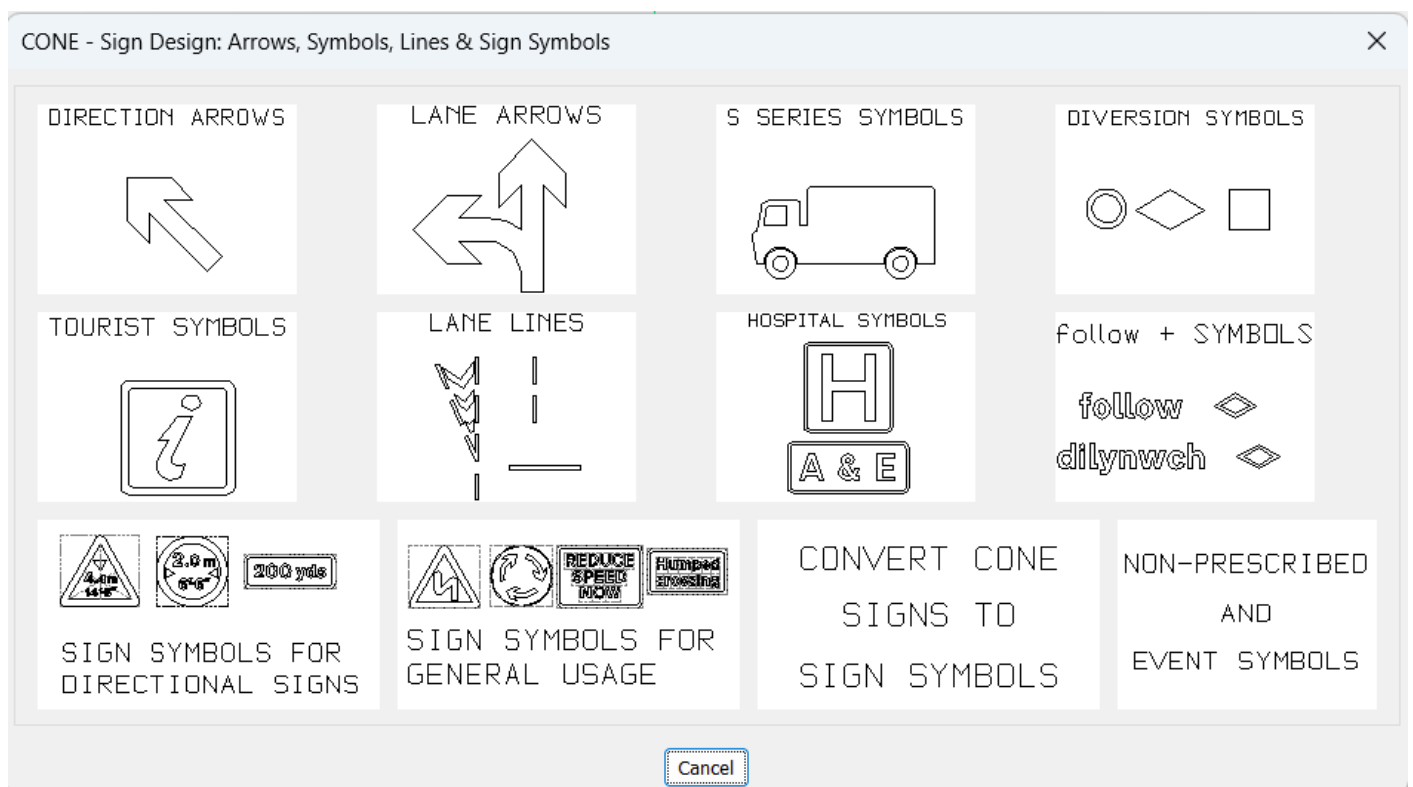
A dialog box titled "Manually Pick Insert Point". It contains a dropdown menu labeled "Manual Insert Point of Patch" with "Top Left" selected. Below the dropdown is an "Offset Gap" text input field containing the value "0.5".

Example: Insert point offset 0.5sw from the Top Left corner of the patch



Arrows and Symbols

Command: CUKSIGNSYMBOLS RIBBON: CONE12 Roads_SIGN DESIGN CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_Sign_Design_Tools	



This tool enables access to large range of Arrows and Symbols

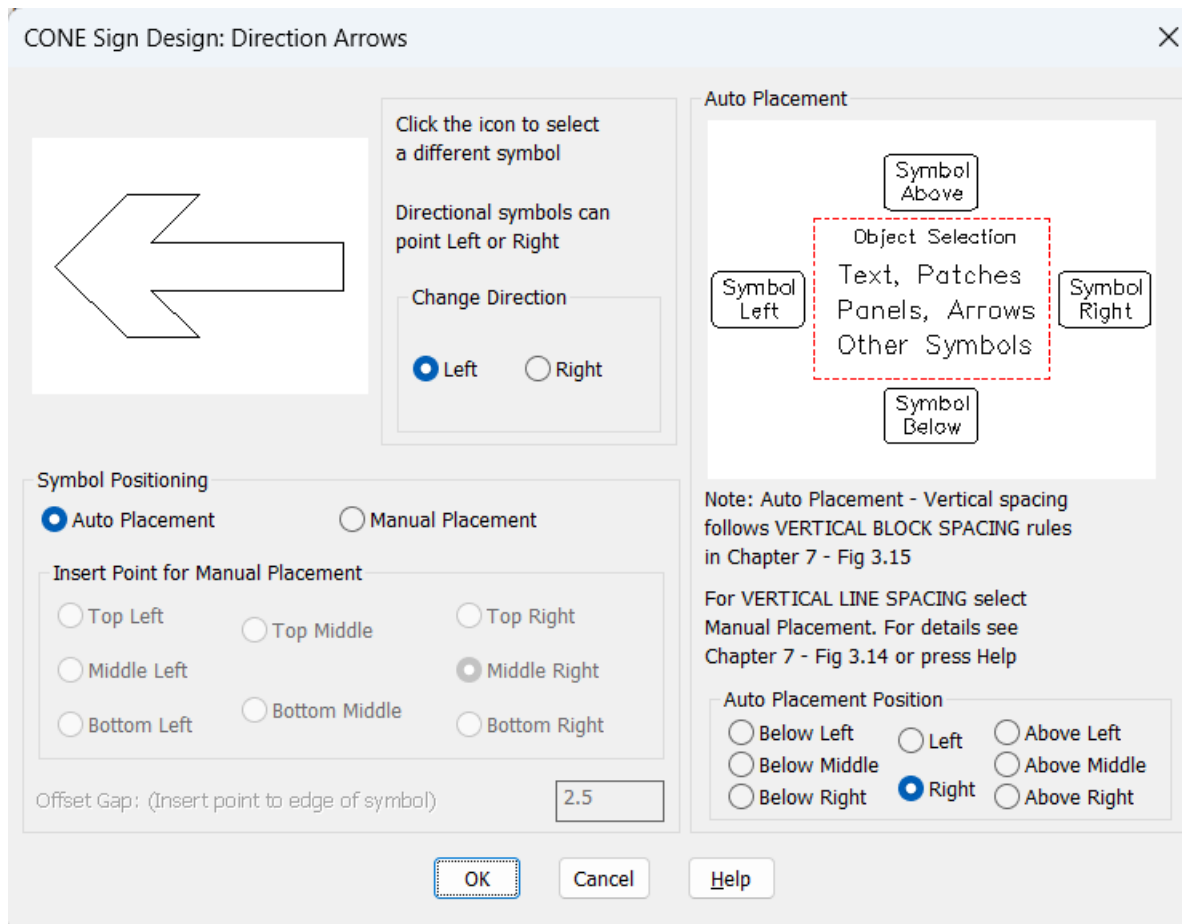
The methods used for selection and placing on a drawing (with the exception of manual positioning of LANE LINES) are identical for each type.

The following text describes the actions required and the options available for placing a DIRECTION ARROW on a drawing.

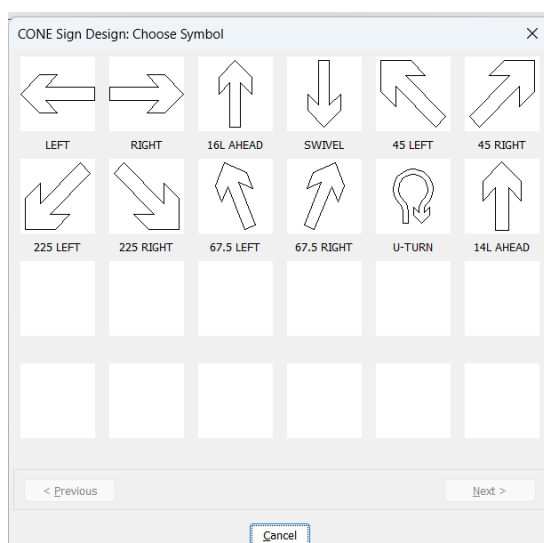


Additional instructions for manually positioning LANES LINES are show separately at the end of this section.

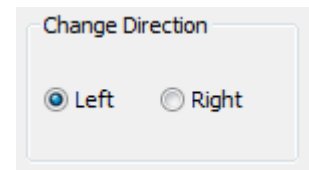
Direction Arrows are selected by picking the DIRECTION ARROWS icon



To change the current symbol click the top left icon and pick the desired symbol from the sub-dialog that will be presented



Symbols that have both Left hand and Right hand versions can be quickly swapped by using the **Change Direction** radio buttons



A dialog box titled "Change Direction" with two radio buttons: "Left" (selected) and "Right".

Symbol Positioning:

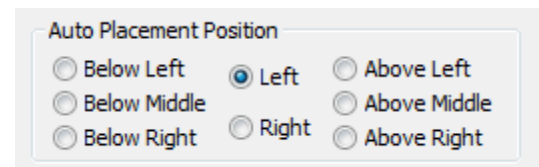


A dialog box titled "Symbol Positioning" with two radio buttons: "Auto Placement" (selected) and "Manual Placement".

Symbols can be placed on a drawing manually (you pick the symbol insert point on the drawing) or symbols can be Auto placed (you select objects on your drawing)

Auto Placement Position:

Select the desired position with reference to the object on the drawing that you will select from the list of radio buttons:



A dialog box titled "Auto Placement Position" with nine radio buttons arranged in a 3x3 grid. The "Left" button in the middle row is selected. The buttons are: Below Left, Left, Above Left; Below Middle, Right, Above Middle; Below Right, Right, Above Right.

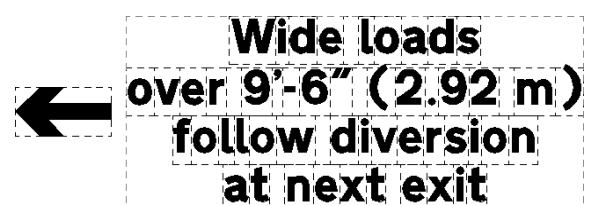
Example: To auto position an arrow to the left of a text legend, pick the **Left** radio button and then pick the **OK** button, the tool will respond thus:

Command: CSYMBOLS

Select object or objects to align symbol to:

Select entities

Select the text legend block and press the return key, the arrow will be positioned to the left with the correct horizontal gap and vertical position



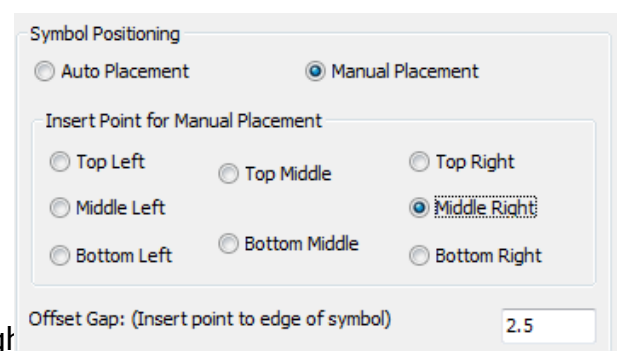
Manual Positioning:

To manually position a symbol pick:

Manual Placement then pick an

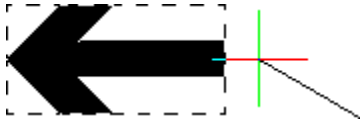
Insert Point for Manual Placement option

then enter the desired Offset Gap



A dialog box titled "Symbol Positioning" with two radio buttons: "Auto Placement" and "Manual Placement" (selected). Below the radio buttons is a section titled "Insert Point for Manual Placement" with nine radio buttons arranged in a 3x3 grid. The "Middle Right" button in the middle row is selected. The buttons are: Top Left, Top Middle, Top Right; Middle Left, Middle Right, Middle Right; Bottom Left, Bottom Middle, Bottom Right. At the bottom of the dialog box is a text input field labeled "Offset Gap: (Insert point to edge of symbol)" with the value "2.5" entered.

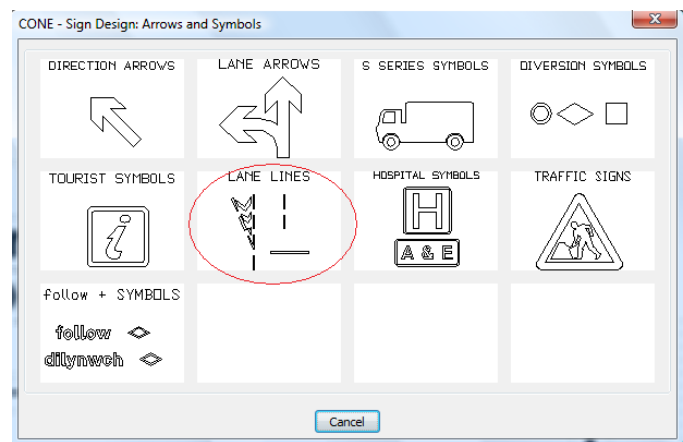
Example: Insert point offset 2.5 sw from the Middle Right



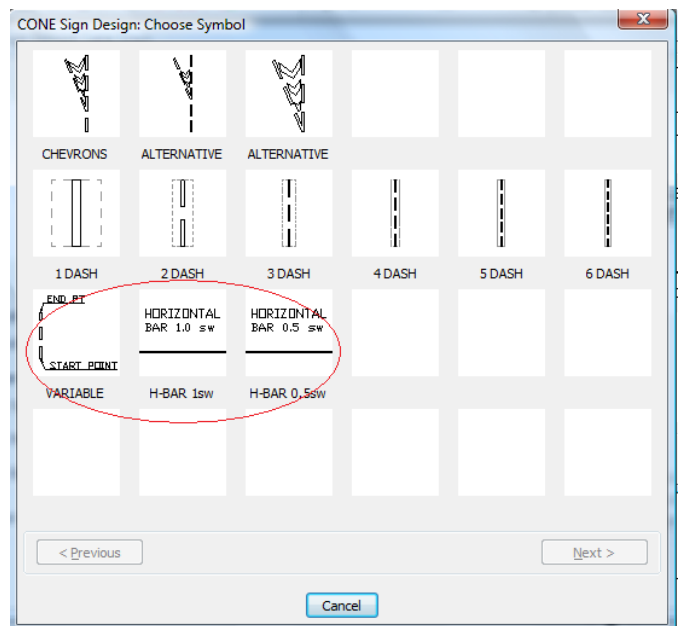
The cursor insert point is set to 2.5 sw distance from the middle right end of the arrow, use normal positioning methods (OSNAP etc) to place the symbol on the drawing

Manually positioning lane lines:

This variation only applies to three types of horizontal and vertical lines selected from LANE LINES

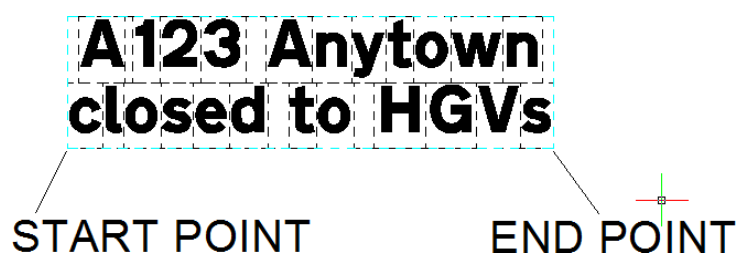


The length of the vertical or horizontal line is determined by picking two points on a drawing



See example below:

You are prompted to pick the start point and the end point of the line



The bar is drawn and you then position it as required

Arrows and Symbols : Sign Symbols For Direction Signs

The Sign Symbols For Direction Signs contains a range of signs in symbol format that can be incorporated into Directional Signs (Exceptions being Distance plates and Other) they can also be incorporated onto Backing Boards

The key factor to remember when either inserting Sign Symbols or converting Sign Symbols is that the Sign Symbol should be inserted or converted at the intended finished size and target background colour.

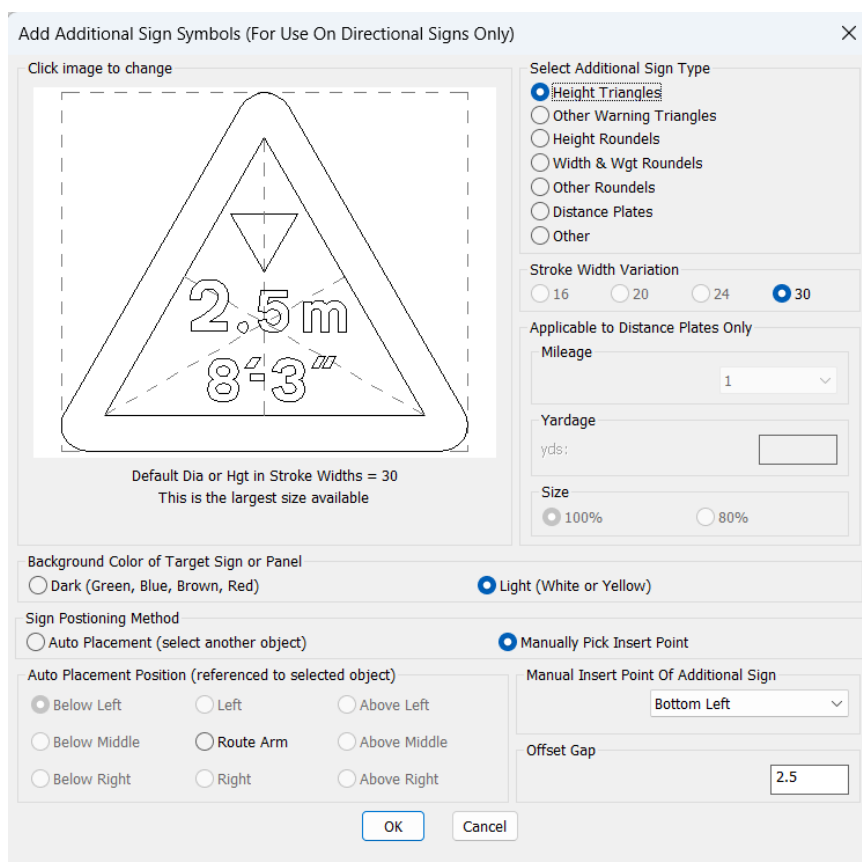
Example: To include a Height Triangle on a Backing Board

Select the SIGN SYMBOLS FOR DIRECTIONAL SIGNS ICON



Then pick **Height Triangles** from the **Select Additional Sign Type** choices

Select the image to choose the desired height

The image is a screenshot of a software dialog box titled 'Add Additional Sign Symbols (For Use On Directional Signs Only)'. The dialog has a close button (X) in the top right corner. On the left, there is a preview area with a dashed border containing a height triangle symbol. Below the preview, it says 'Default Dia or Hgt in Stroke Widths = 30 This is the largest size available'. On the right, there is a 'Select Additional Sign Type' section with radio buttons for 'Height Triangles' (selected), 'Other Warning Triangles', 'Height Roundels', 'Width & Wgt Roundels', 'Other Roundels', 'Distance Plates', and 'Other'. Below this is a 'Stroke Width Variation' section with radio buttons for '16', '20', '24', and '30' (selected). There is also an 'Applicable to Distance Plates Only' section with a 'Mileage' dropdown set to '1' and a 'Yardage' input field. Below that is a 'Size' section with radio buttons for '100%' (selected) and '80%'. At the bottom, there is a 'Background Color of Target Sign or Panel' section with radio buttons for 'Dark (Green, Blue, Brown, Red)' and 'Light (White or Yellow)' (selected). Below that is a 'Sign Positioning Method' section with radio buttons for 'Auto Placement (select another object)' and 'Manually Pick Insert Point' (selected). Below this is an 'Auto Placement Position' section with radio buttons for 'Below Left' (selected), 'Left', 'Above Left', 'Below Middle', 'Route Arm', 'Above Middle', 'Below Right', 'Right', and 'Above Right'. To the right of this is a 'Manual Insert Point Of Additional Sign' dropdown set to 'Bottom Left' and an 'Offset Gap' input field set to '2.5'. At the bottom are 'OK' and 'Cancel' buttons.

For Height Triangles the size is fixed a 30sw

Background Colour of Target Sign or Panel

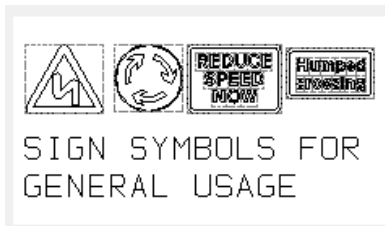
Select either Dark (for Green , Blue, Brown or Red signs)

or

Light (for Yellow or White signs)

Finally use the normal insertion methods to place the sign symbol on your drawing

Arrows and Symbols : Sign Symbols For General Usage



This tool will enable selection and conversion of range of CONE signs into Sign Symbols which can then be used in new sign design creation.

The main purpose of this tool is the creation signs that will be placed onto a yellow or grey backing board

Convert Signs to Sign Symbols

Instructions
This tool will enable selection and conversion of range of CONE signs into Sign Symbols which can then be used in new sign design creation
The main purpose of this tool is the creation signs that will be placed onto a yellow or grey backing board
If you require signs with variable text (such as distance and exception plates, height triangles and roundels etc.) then exit this tool and:

1. Select and Insert a sign to convert from the [Sign Search/Browse and Insert] Tool
2. Use the [Modify Text ,Data On Signs] tool to create the desired variation
3. Then use the [CONVERT CONE SIGNS TO SIGN SYMBOLS] tool to convert

Sign Type
Sign Type

☐ Triangles

☐ Roundels

☒ Supplementary Plates

☐ Other

Select here

- T511
- T511V
- T513-1
- T518
- T518L
- T518R
- T519
- T519L
- T519R
- T525
- T526
- T530-1A

Multiview...

Sign Image
Ref: 511 : Reduce speed now XL

Output Size
SELECT SIZE REQUIRED HERE ->>>

100 X Height

Sign Positioning Method
☐ Auto Placement (select another object) ☒ Manually Pick Insert Point

Auto Placement Position (referenced to selected object)

☒ Below Left ☐ Left ☐ Above Left

☐ Below Middle ☐ Above Middle

☐ Below Right ☐ Above Right

Manual Insert Point Of Additional Sign
Bottom Left

Offset Gap
2.5

OK Cancel

Sign Type

Choose from Triangles, Roundels, Supplementary Plates and Other

You can scroll through the corresponding list, selecting each reference to view the image
Or pick the Multiview button

Output Size

The Output Size list will vary depending on the sign type selected
Select the desired output size

Finally use the normal insertion methods to place the sign symbol on your drawing

Arrows and Symbols : Convert Cone Signs to Sign Symbols

CONVERT CONE
SIGNS TO
SIGN SYMBOLS

This tool will copy and convert most CONE signs into Sign Symbols, these converted signs can then be used in new sign design creation

NOTE: Signs created with the CONE Custom Schedule 13.9 (Fixed Plate) tool and 7202/7244/7245 signs will not be converted

However signs created with the CONE Custom Schedule 13.9 (Variable Plate) tool can be converted
The main purpose of this tool is the creation of signs that will be placed onto a yellow or grey backing board

Convert Signs to Sign Symbols

Instructions

This tool will copy and convert most CONE signs into Sign Symbols, these converted signs can then be used in new sign design creation

NOTE: Signs created with the CONE Custom Schedule 13.9 (Fixed Plate) tool and 7202/7244/7245 Signs will not be converted

However signs created with the CONE Custom Schedule 13.9 (Variable Plate) tool can be converted

The main purpose of this tool is the creation of signs that will be placed onto a yellow or grey backing board

1. If your desired sign is not already inserted in your drawing then exit this tool _insert a sign to convert from the Sign Search/Browse and Insert Tool
2. Come back into this tool and pick the [Select Sign to Convert...] button and select the sign you have inserted
3. Select the desired output size from the size list
4. Change the Sign Positioning Method to your requirements and pick the OK button to generate and place the converted Sign Symbol onto the drawing

Selection and Size

Select Sign to Convert...

NO SIGN SELECTED

Sign Postioning Method

☐ Auto Placement (select another object)

Auto Placement Position (referenced to selected object)

☒ Below Left

☐ Left

☐ Above Left

☐ Below Middle

☐ Route Arm

☐ Above Middle

☐ Below Right

☐ Right

☐ Above Right

Manually Pick Insert Point

Manual Insert Point Of Additional Sign

Bottom Left

Offset Gap

2.5

OK

Cancel

Example

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These two signs have been create with the Chapter 7 Sign Design Tools and I now wish to add them to a grey backing board. They need to be converted to Sign Symbols first

Pick the **Select Sign to Convert** button and select the sign to convert



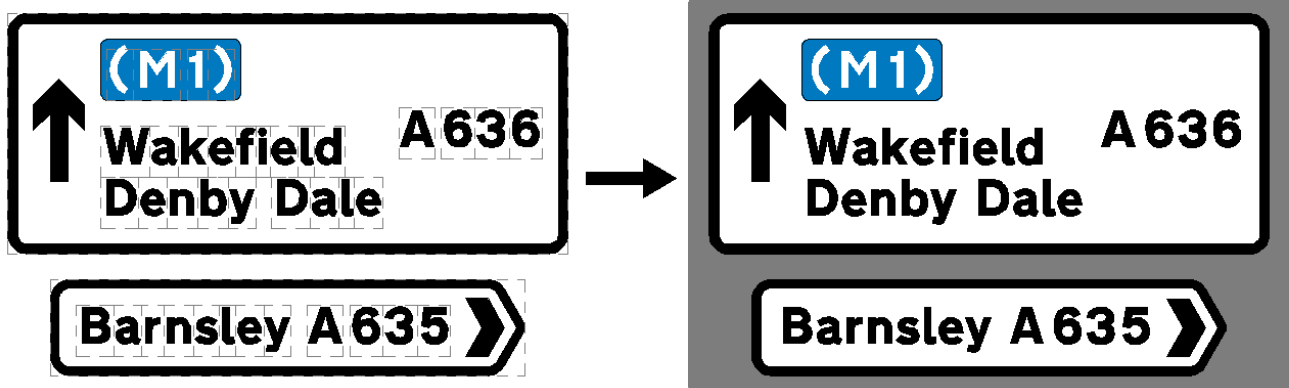
After selection the Sizing List will be shown

Select the desired finished size (in this case 62.5 x-height is chosen for both)

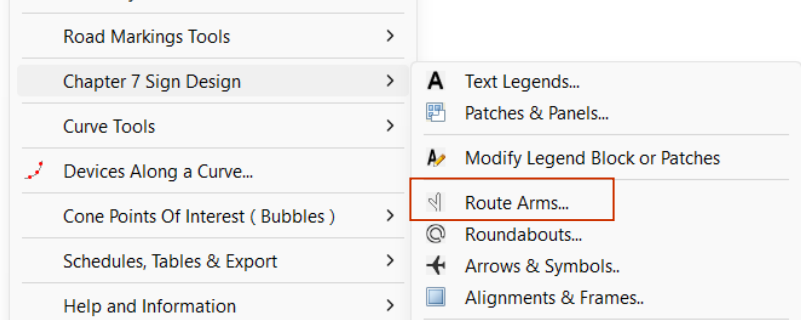
The screenshot shows a dialog box titled 'Selection and Size'. It has a 'Select Sign to Convert...' button and a status indicator '*SIGN SELECTED OK*'. Below this is the 'Sign Positioning Method' section with a radio button for 'Auto Placement (select another object)'. Underneath is the 'Auto Placement Position (referenced to selected object)' section with several radio buttons: 'Below Left' (selected), 'Left', 'Above Left', 'Below Middle', 'Route Arm', 'Above Middle', 'Below Right', 'Right', and 'Above Right'. On the right side of the dialog is a 'Size at 100 x-height = 2190 wide x 938 high' dropdown menu. A list of sizes is shown, with 'Size at 62.5 x-height = 1368 wide x 586 high' selected. At the bottom right of the list is a small box containing the number '2.5'. At the bottom of the dialog are 'OK' and 'Cancel' buttons.

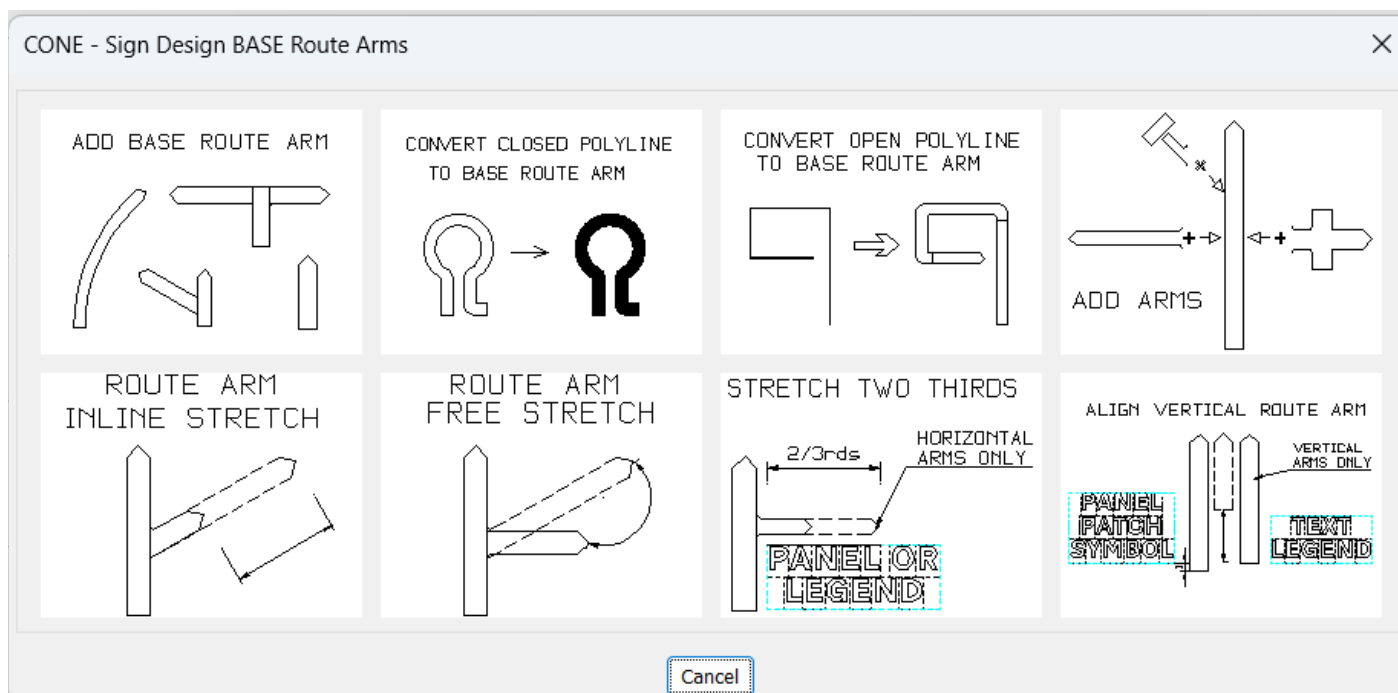
After Conversion

A Sign that has been converted will have dashed frames around the border and text
And can now be added to a backing board



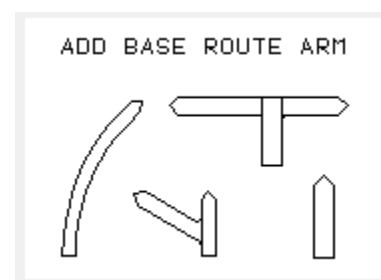
Route Arms

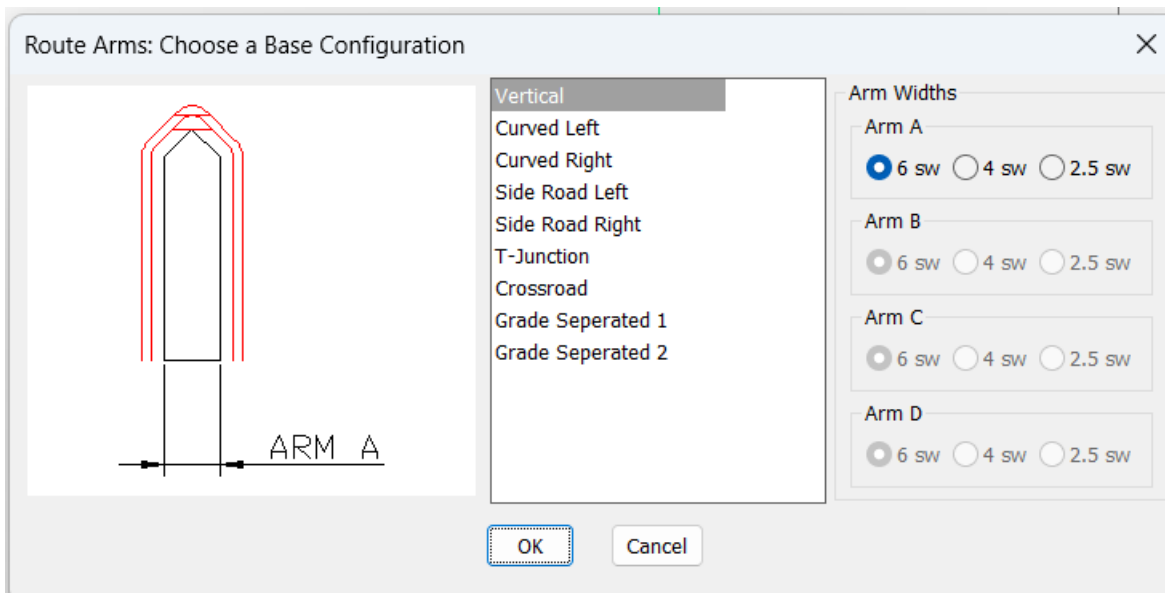
Command: CUKRARMS	
RIBBON: CONE12 Roads_SIGN DESIGN CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_Sign_Design_Tools	



Add Base Route Arms:

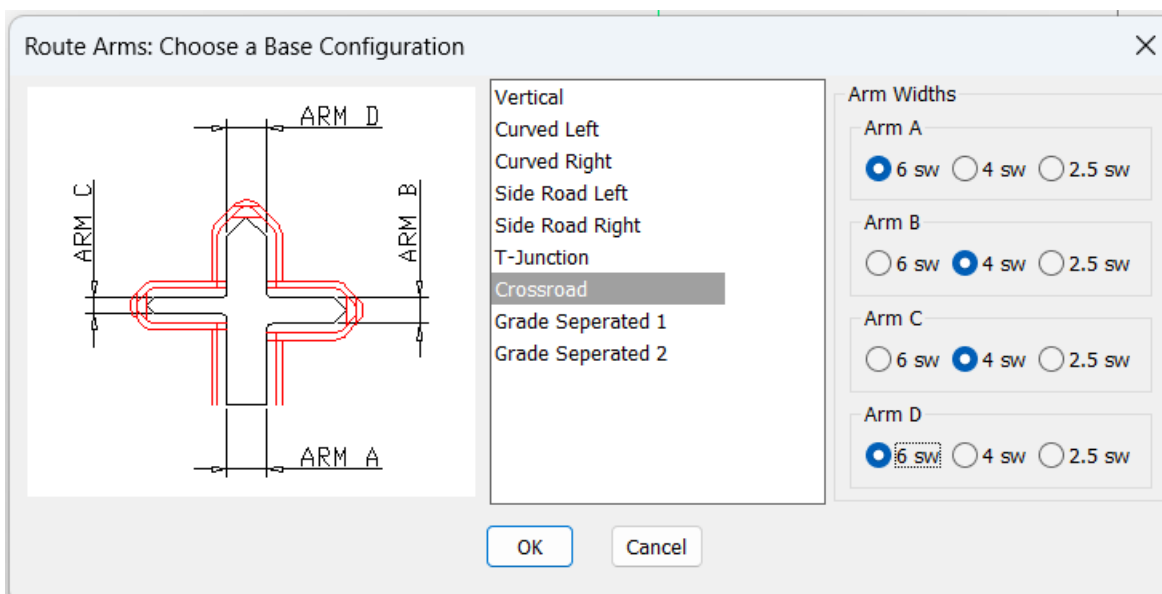
To add a base route arm pick the ADD BASE ROUTE ARM icon
This action will load a dialog window





There are several base route arm configurations to choose from, select from the central list and a corresponding image will be displayed with labels that indicate the number of arms.

For example the Vertical base route arm has only one arm labelled ARM A, whereas the Crossroad base route arm has four arms labelled A, B C and D



The **Arm Width** radio buttons enable you to choose the width of each arm of the chosen base configuration. The width of each route arm on map type signs is generally related to the status of the route indicated.

6 sw is used for primary routes and motorways, 4 sw for numbered non-primary routes and 2.5 sw for unnumbered local routes.

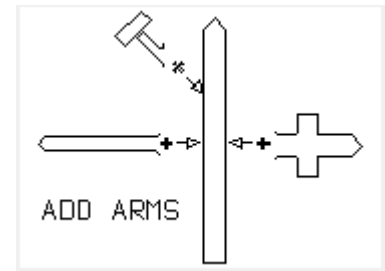
Where a bracketed route number is indicated along an unnumbered local route, the route arm width is 4 sw.

Note: Grade Separated 1 and 2, these arms have a fixed width of 5sw

Select the **OK** button to position the arm on your drawing

Add Arms:

To add additional arms to base route arm select the ADD ARMS icon



Add Route Arms: Arms, Stubs, and Cul-de-sacs

Choose Arm Type, Width then Angle - Cul-de-sacs are fixed at 2.5 sw

NOTE!
Arms are designed to be placed onto a base route arm that has been previously inserted in the drawing

Select Type

- ☒ Straight Route Arm
- ☐ Curved Route Arm
- ☐ Stub Arm
- ☐ Cul-De-Sac - Light Background
- ☐ Cul-De-Sac - Dark Background
- ☐ Staggered
- ☐ Entry Arm
- ☐ Ghost Route Arm
- ☐ Ghost Stub Arm

Joint Corner Radii

- ☒ Yes
- ☐ No

Arm Width

- ☒ 6 sw wide
- ☐ 5 sw wide
- ☐ 4 sw wide
- ☐ 2.5 sw wide

W (Staggered Only)

- ☐ 6 sw wide
- ☒ 4 sw wide
- ☐ 2.5 sw wide

Angle - Anti-clockwise from 3 'o clock

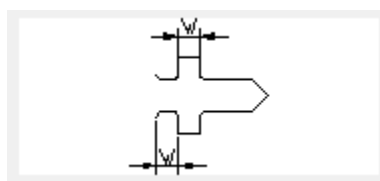
Select Angle 45 Enter Angle 45

OK Cancel

Select Type: There are several types of arm to choose from, select the appropriate radio button, the preview image will change to suit

Arm Width: Choose from 2.5, 4 and 6sw except for Cul-De-Sac types which are fixed at 2.5sw

W (Staggered only): Staggered type has an additional dimension (W) option as shown



Arm Angle:

Angle - Anti-clockwise from 3 'o clock

Select Angle 45 Enter Angle 45

The angle of the arm can be selected from
The **Select Angle** list.

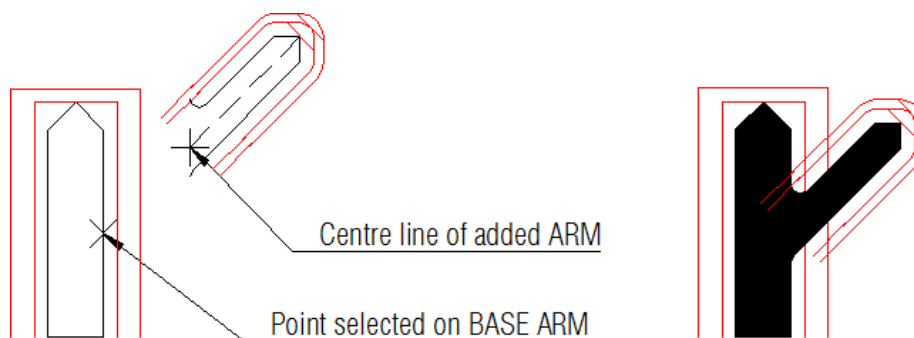
Or if you require an angle that is not on the list,
then select **OTHER** from the list and enter
the desired angle in the **Enter Angle** edit box.



Select the OK button to select an existing base route arm, the tool will respond with:

Command: CRARMS

Select base route arm *Select the base route arm at the approximate position required*
The point at which you select the base route arm corresponds to the end point of the centre line of
the arm being added as shown below:



Note: Positioning and stretching of arms is performed visually, however either arm can be subsequently moved independently of each other using standard CAD move commands (setting ORTHO on is useful) and if real pinpoint accuracy is required then you can add construction lines as an aid

Tip: Turning layer CONEFILLED off and layer CONESIMPLE on will show the arms in outline mode as shown above or user the Cone menu selection: Cone Sign Design: > Layer Toggles: >Colour ON/OFF

IMPORTANT POINTS

You should not add additional arms to Grade Separated Base Arms

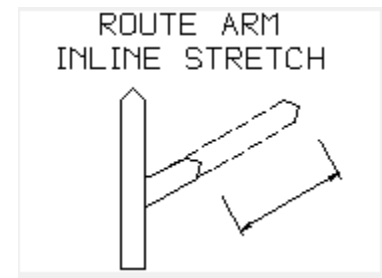
Route Arm Inline Stretch:

To stretch a route arm along the angle of the route arm select the ROUTE ARM INLINE STRETCH icon

The tool will respond with

Command: CRARMS

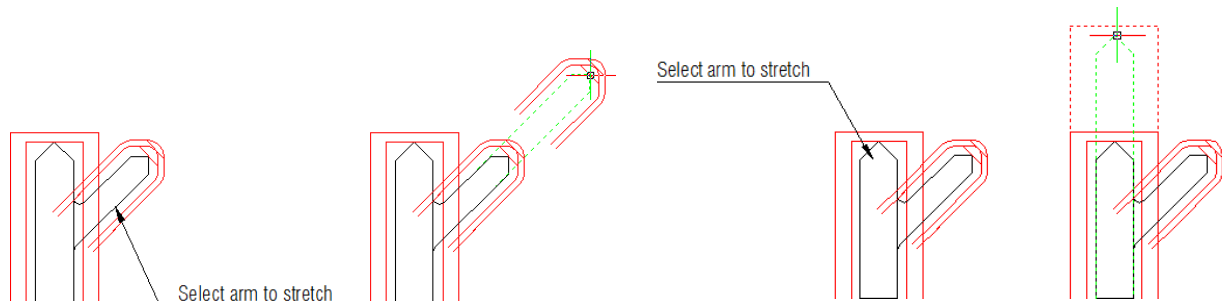
Select route arm to stretch



Select the arm that you want to stretch and move the cursor to the desired position, the arm plus no-go areas will dynamically update as you move the cursor, the direction will always follow the original arm angle, (except for curved base route arms which you can freely stretch)

Pick a point to finish

Note: You cannot stretch an arm to a distance of less than 12.5 sw and you cannot stretch Stubs and Cul-de-sac's



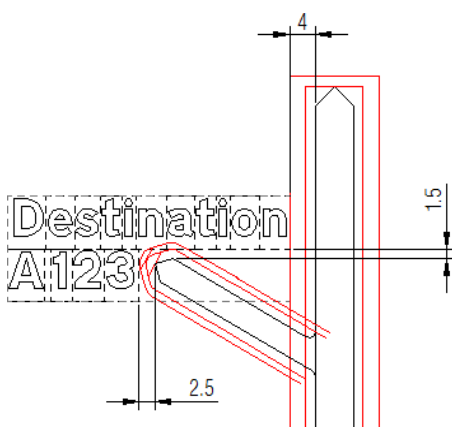
The arm tip no-go zones are marked in red; they have offsets from the outer outline of the route arms as follows:

Inclined route arms: 1.5 and 2.5 sw

Vertical route arms: 1.5 and 4.0 sw

These offsets reflect the min spacing rules between route arms and other sign objects in: Chapter 7 – The Design of Traffic Signs (See pages 41 to 49)

An example is shown below (but refer to Chapter 7 for complete guidance)



Route Arm Free Stretch:

To perform a free stretch of a route arm select the ROUTE ARM FREE STRETCH icon

The tool will respond with:

Command: CRARMS

Select route arm to stretch



Select the arm that you want to stretch and move the cursor to the desired position, the arm plus no-go areas will dynamically update as you move the cursor, you may stretch in any direction thereby changing the angle arm angle, pick a point to finish

Notes:

You cannot stretch an arm to a distance of less than 12.5 sw

You cannot FREE stretch a fixed vertical or horizontal base route arm (use Inline Stretch to adjust those types of arms)

You cannot free stretch Stubs, Cul-de-sac's and staggered arms

Stretch Two Thirds:

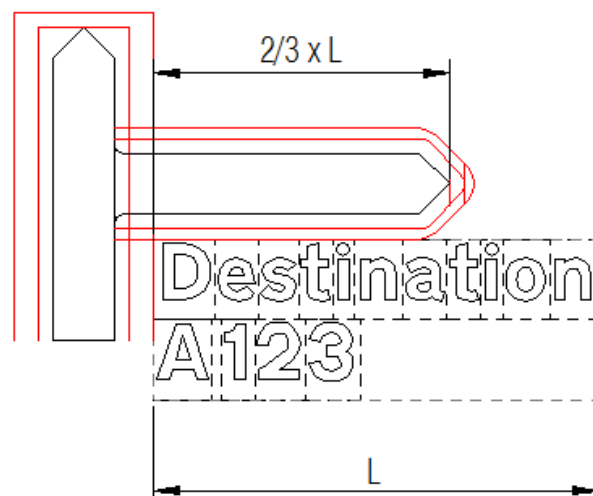
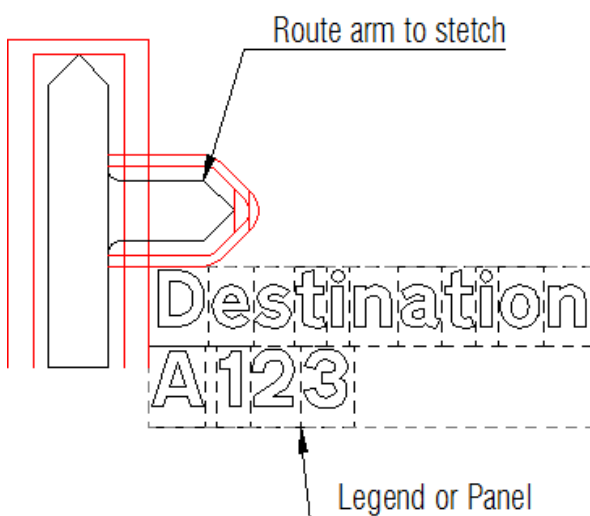
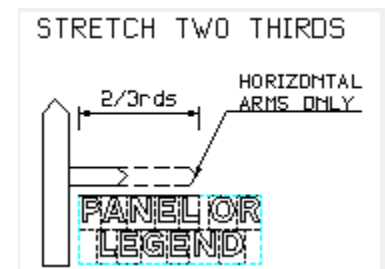
To stretch a HORIZONTAL route arm to a point two thirds along the length of a text legend or panel select the STRETCH TWO THIRDS icon

The tool will respond with

Command: CRARMS

Select horizontal route arm to stretch two thirds (select a horizontal route arm)

Select panel or legend (select a panel or text legend)



Align Vertical Route Arm:

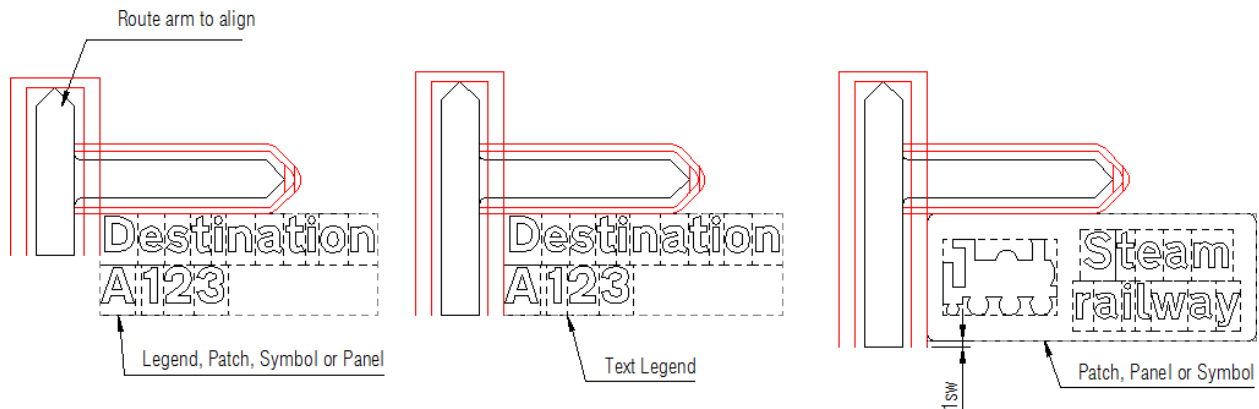
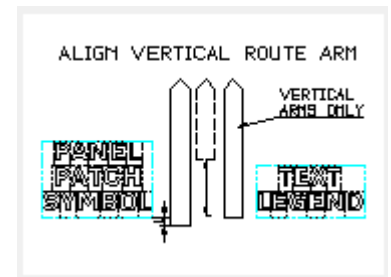
To align the base of a vertical route arm with the base of a text legend, panel, patch or symbol pick the ALIGN VERTICAL ROUTE ARM icon

The tool will respond with

Command: CRARMS

Select vertical route arm to align (*select a vertical route arm*)

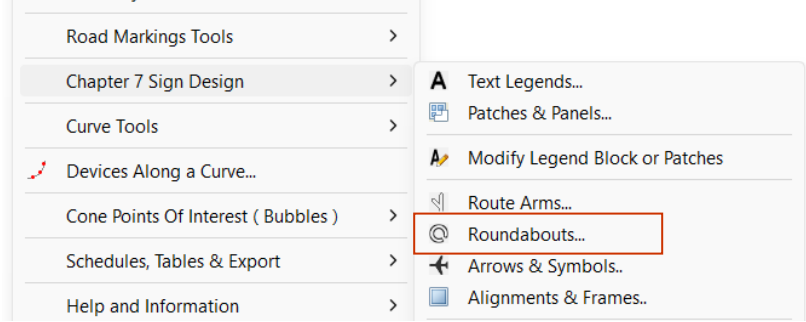
Select panel patch symbol or legend to align to (*select a panel, patch, legend or symbol*)

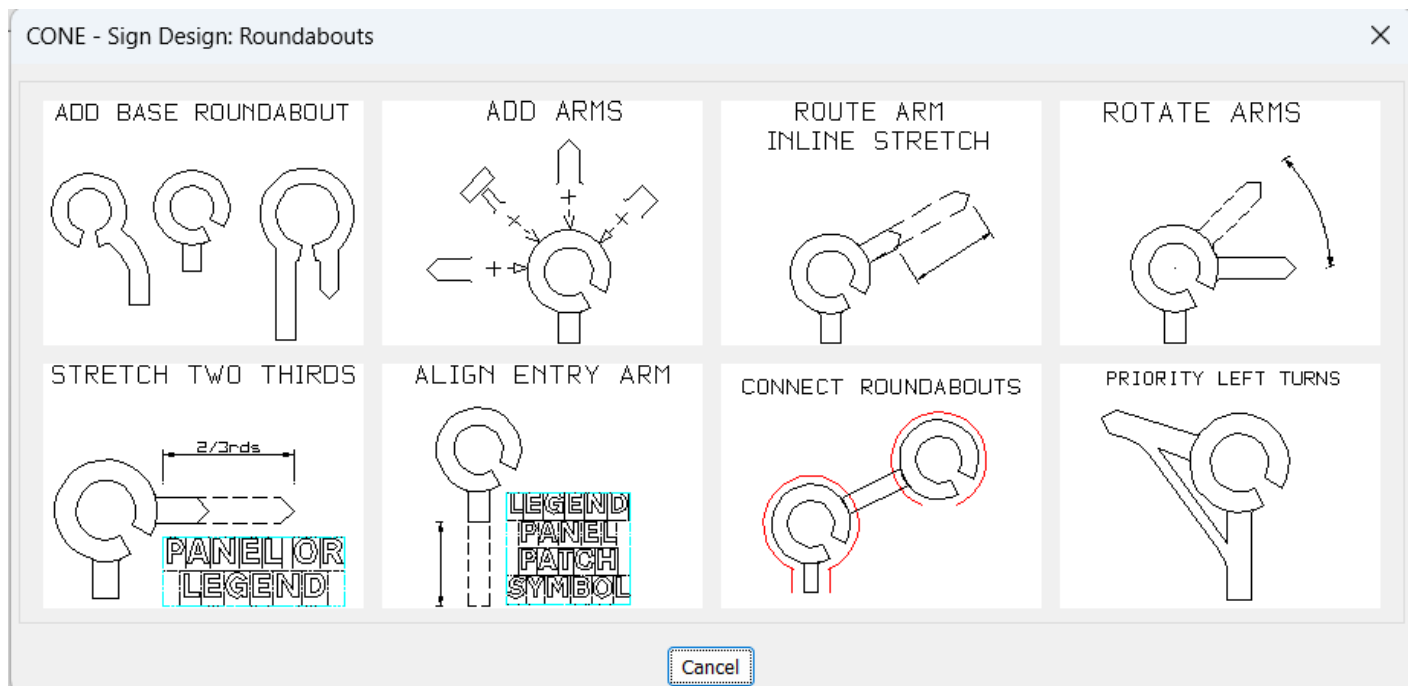


Note: Text legends and route arms will base align exactly

For Patches, Panels and Symbols the base of the route arm will extend 1sw below the base of the patch, panel or symbol.

Roundabouts

Command: CUKROUNDABOUTS RIBBON: CONE12 Roads_SIGN DESIGN CONE12UKBC Pull Down Menu	
	
TOOLBAR: CONE12_UK_Sign_Design_Tools	

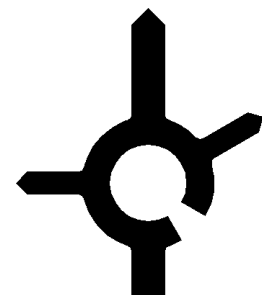


Creating roundabout is a two or three step process:

Add a base roundabout

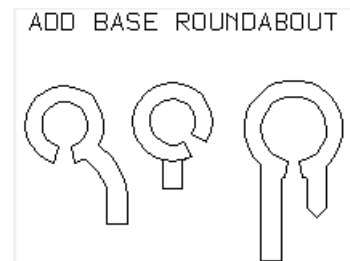
Add additional exit arm(s) , stubs or cul-de-sacs

Stretch and rotate arms as required

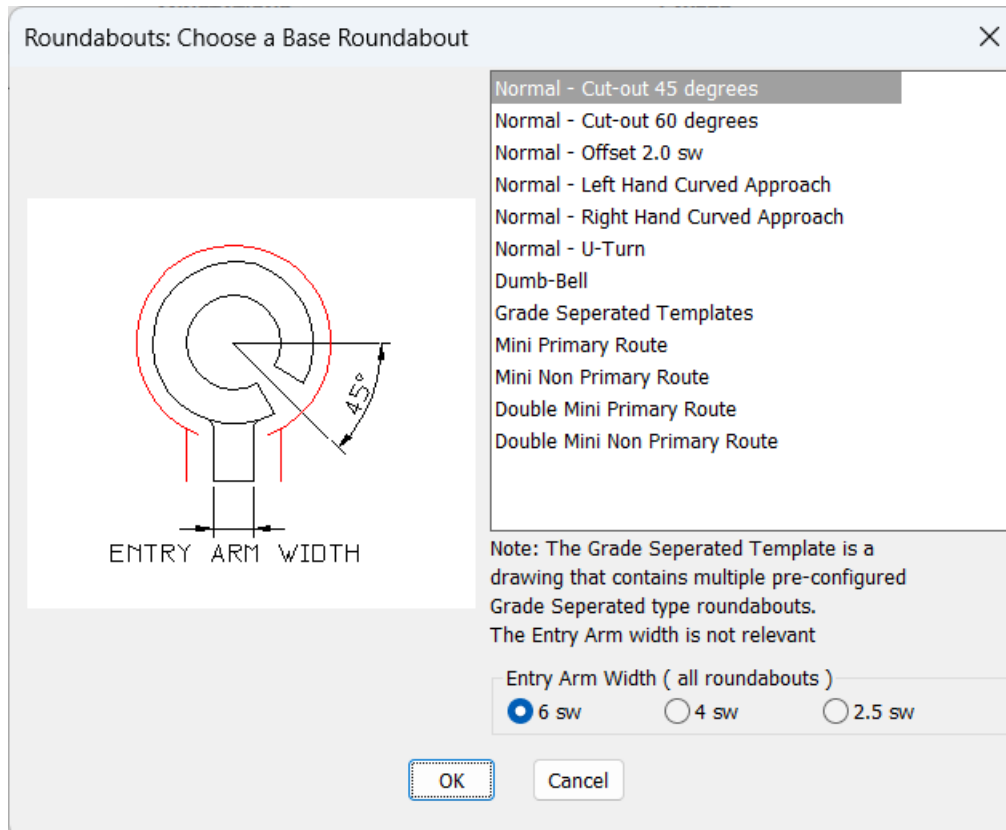


Add Base Roundabout

To add a base route arm select the ADD BASE ROUNDABOUT icon



This will load a dialog window



There are several base roundabout configurations to choose from, select from the right hand list and a corresponding image will be displayed.

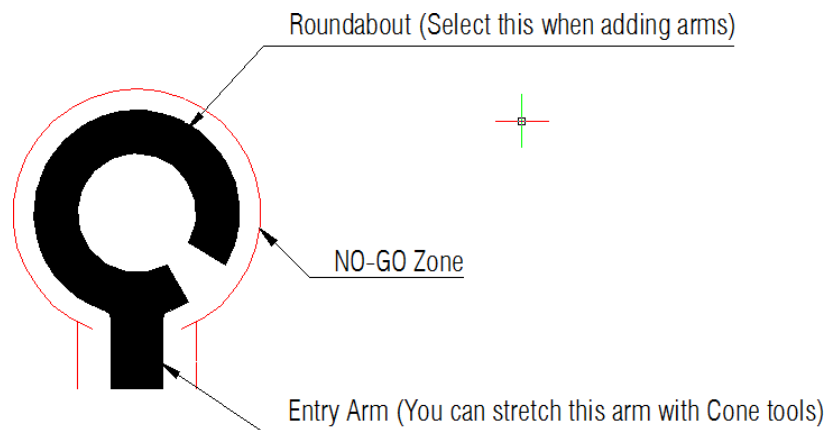
The **Entry Arm Width** radio buttons enables you to choose the width of the associated entry arm

The width of the entry arm on map type signs is generally related to the status of the route indicated. 6 sw is used for primary routes and motorways, 4 sw for numbered non-primary routes and 2.5 sw for unnumbered local routes.

Where a bracketed route number is indicated along an unnumbered local route, the route arm width is 4 sw.

Select the **OK** button and position the roundabout on your drawing

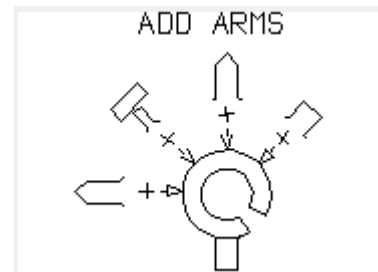
A base roundabout contains two separate parts, the Entry Arm (which you can stretch using the Cone tools that are described in the next few pages) and the central roundabout portion, something to bear in mind if you need to move or copy the base roundabout within your drawing.



Add Arms:

To add additional arms to base roundabout select the ADD ARMS icon

The dialog window shown below will be displayed

A screenshot of a software dialog box titled 'Roundabouts: Exit Arms, Stubs, and Cul-de-sacs'. The dialog has a close button (X) in the top right. On the left, there is a preview area showing a roundabout with a new arm being added, and a text box that says 'Choose Arm Type, Width then Angle - Cul-de-sacs are fixed at 2.5 sw'. Below this is a 'NOTE!' section stating 'Arms are designed to be placed onto a base roundabout that has been previously inserted in the drawing using: CONE > Roundabouts > Bases'. The main area is divided into two sections: 'Select Type' with radio buttons for 'Exit Arm' (selected), 'Stub Arm', 'Cul-De-Sac - Light Background', and 'Cul-De-Sac - Dark Background'; and 'Select Width' with radio buttons for '6 sw wide' (selected), '4 sw wide', and '2.5 sw wide'. To the right is a large preview window titled 'Angle - Anti-clockwise from 3 o'clock' showing a roundabout with arms at various angles (0°, 30°, 90°, 135°, 180°, 270°). Below the preview are 'Select Angle' and 'Enter Angle' dropdowns, both set to '90', and a 'Show Angle On Screen' checkbox. At the bottom are 'OK' and 'Cancel' buttons.

Select Type: There are four types of arm to choose from, Exit Arm, Stub Arm, Cul-De-Sac for Light Backgrounds and Cul-De-Sac for Dark Backgrounds, select the appropriate radio button, the preview image will change to suit

Arm Width: Choose from 2.5, 4 and 6sw except for Cul-De-Sac types which are fixed at 2.5sw

Arm Angle:

The angle of the arm can be selected from the **Select Angle** list.

A screenshot of a dropdown menu titled 'Select Angle'. The menu is open, showing a list of angles: 0, 15, 30, 45 (highlighted), 60, 90, 105, 120, 135, 150, 165, 180, and OTHER. There is a 'Show Angle' checkbox which is unchecked.A screenshot of a preview window titled 'Angle - Anti-clockwise from 3 o'clock'. It shows a roundabout with arms at various angles (0°, 30°, 90°, 135°, 180°, 270°). Below the preview are 'Select Angle' and 'Enter Angle' dropdowns, both set to '45', and a 'Show Angle On Screen' checkbox.

Or if you require an angle that is not on the list, then select **OTHER** from the list and enter the desired angle in the **Enter Angle** edit box.

A screenshot of the 'Select Angle' dropdown menu with 'OTHER' selected. The 'Enter Angle' edit box next to it contains the value '20'.

You can also “show” the angle by setting the **Show Angle On Screen** checkbox to on

When ready select the **OK** button to select an existing base roundabout, the tool will respond with:

Command: CROUNDABOUTS

Select a base roundabout *(Select a base roundabout)*

If you have selected **Show Angle On Screen** then you will be able to rotate the arm around the centre of the roundabout and pick a point to set the angle, otherwise the arm will be positioned at the actual angle chosen.

Route Arm Inline Stretch:

To stretch a roundabout route arm along the angle of the route arm, select the ROUTE ARM INLINE STRETCH icon

The tool will respond with

Command: CROUNDABOUTS

Select route arm to stretch

Select the arm that you want to stretch and move the cursor to the desired position, the arm plus no-go areas will dynamically update as you move the cursor, the direction will always follow the original arm angle.

Pick a point to finish

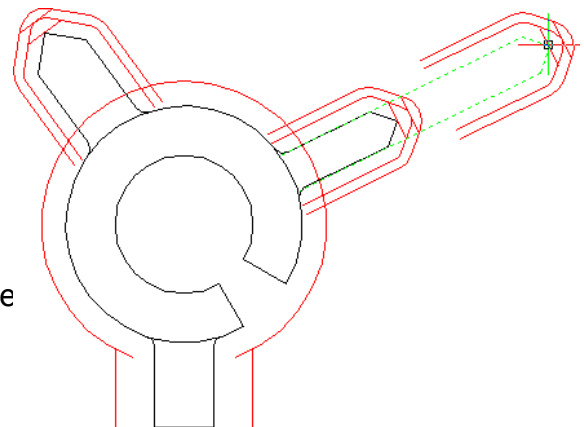
Note: You cannot stretch an arm to a distance of less than 12.5 sw and you cannot stretch Stubs and Cul-de-sac's

The arm tip no-go zones are marked in red; they have offsets as follows:

Inclined route arms: 1.5 and 2.5 sw

Vertical route arms: 1.5 and 4.0 sw

These offsets reflect the min spacing rules between route arms and other sign objects in: Chapter 7 – The Design of Traffic Signs (See pages 41 to 49)



Rotate Arms:

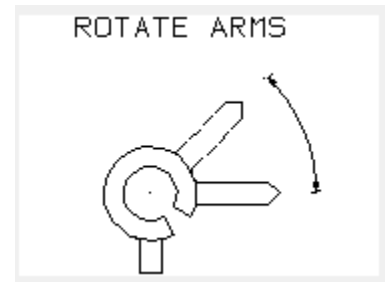
To free rotate of a roundabout route arm pick the ROTATE ARMS icon

The tool will respond with:

Command: CROUNDABOUTS

Select arm to rotate

Select the arm that you want to rotate and either move the cursor to show the new angle and pick a point to finish or enter a new angle at the command line



Stretch Two Thirds:

To stretch a HORIZONTAL route arm to a point two thirds

along the length of a text legend or panel

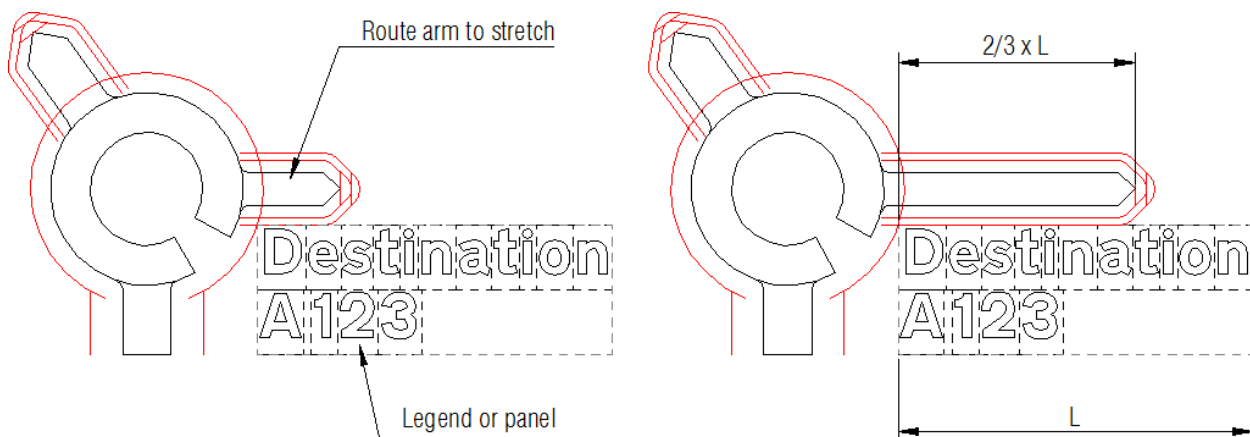
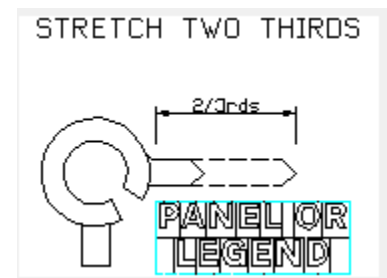
select the STRETCH TWO THIRDS icon

The tool will respond with

Command: CROUNDABOUTS

Select horizontal route arm to stretch two thirds (select a horizontal route arm)

Select panel or legend (select a panel or text legend)



Align Entry Arm:

To align the base of roundabout entry arm with the base

of a text legend, panel, patch or symbol select

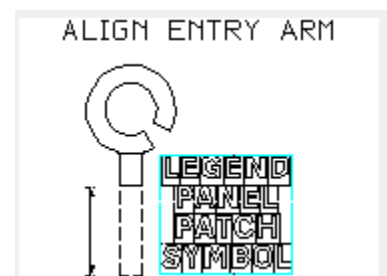
the ALIGN ENTRY ARM icon

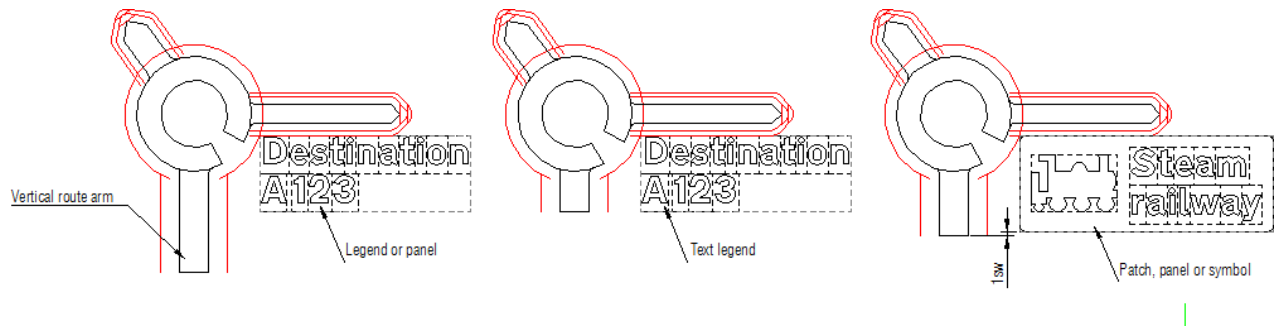
The tool will respond with

Command: CROUNDABOUTS

Select vertical route arm to align (select a vertical route arm)

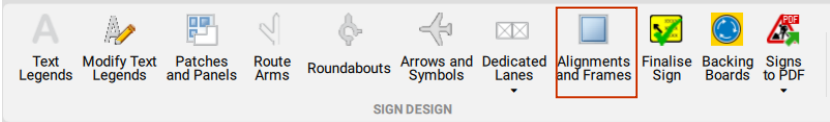
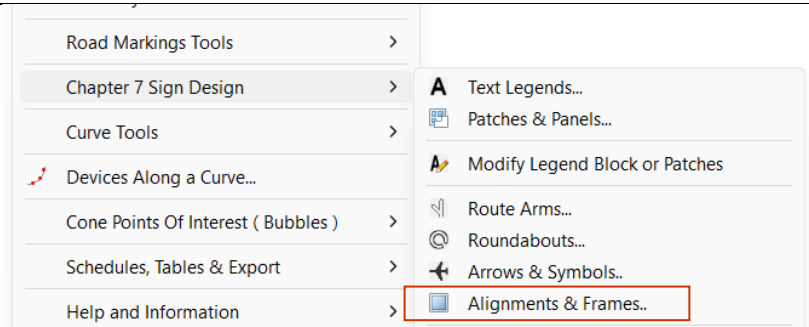
Select panel patch symbol or legend to align to (select a panel, patch, legend or symbol)





Note: Text legends and route arms will base align exactly, for Patches, Panels and Symbols the base of the route arm will extend 1sw below the base of the patch, panel or symbol.

Alignments & Frames

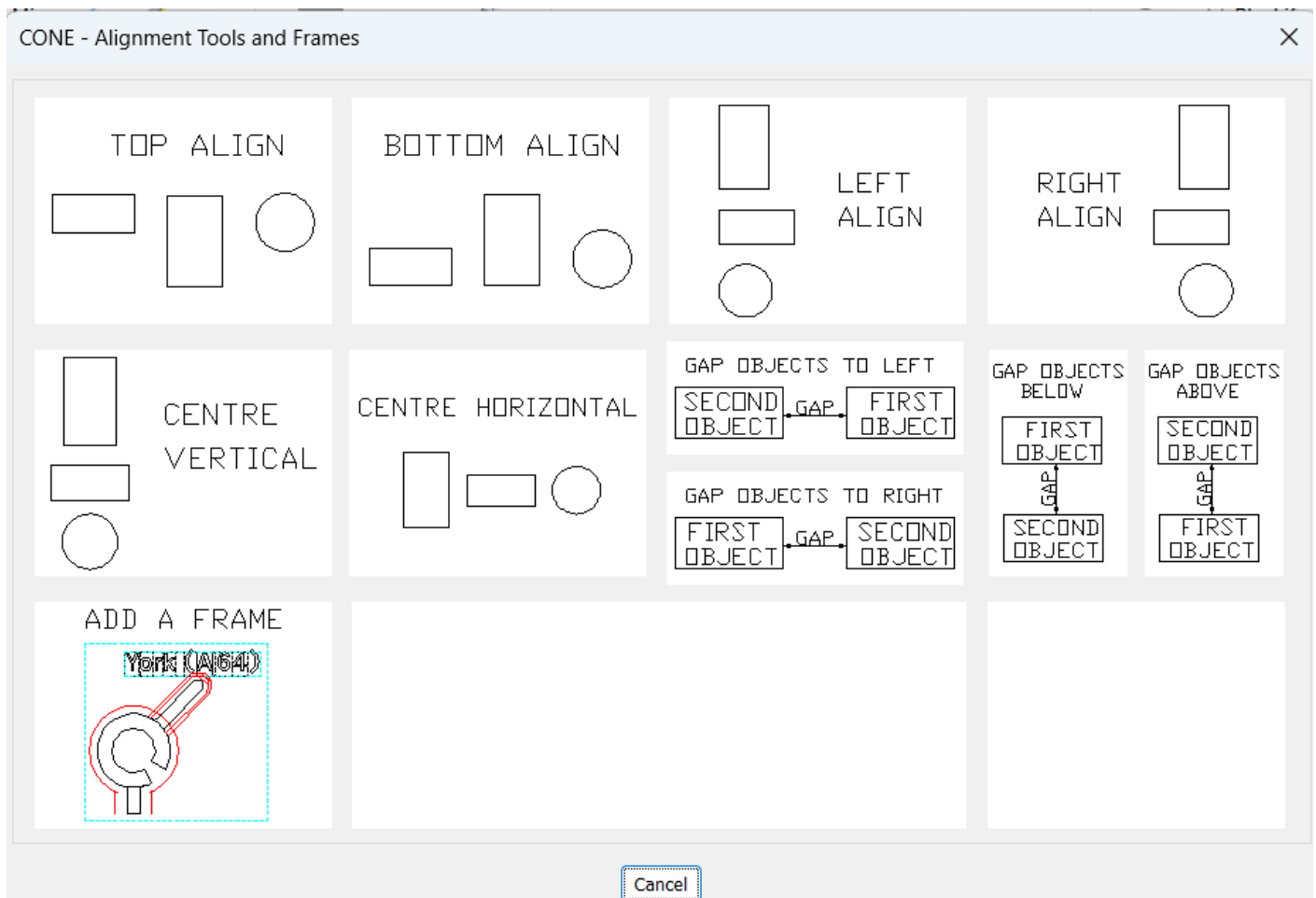
Command: CUKATOOLS RIBBON: CONE12 Roads_SIGN DESIGN	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_Sign_Design_Tools	

The alignments tools and frame facility contains several tools to assist in the accurate alignment of sign design objects

There are six alignment tools: (Top, Bottom, Left, Right, Centre Vertical and Centre Horizontal)

There are four tools for “gapping” objects (Left, Right, Above and Below)

The Add a Frame tool contains several tools for adding frames to objects



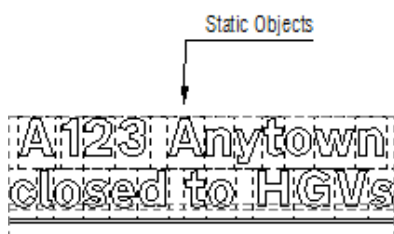
ALIGN TOOLS

Aligns two objects or two sets of objects

Select the icon that matches your desired alignment

In the example shown below CENTRE VERTICAL has been chosen

Example to VERTICAL CENTRE ALIGN these two set of objects shown below select the CENTRE VERTICAL icon:



RESULT



Objects to be vertical centre aligned

Top Align

Allows alignment of sign entities on the drawing to be the top of a reference entities you will see the following prompts in the command line:

Top aligned: Select the static object[s]

Select entities:

Select the reference object(s) then press ENTER

Now select other object[s] to be Top aligned to the static object[s]:

Select entities:

Select the object(s) to align then press ENTER

After selection has been made, the program calculates the top most coordinate of the objects to move and moves them vertically to the top most coordinate of the reference object(s).

If you want to move several items to each be aligned to the top of the reference entity, you will have to repeat this routine for each entity

Bottom Align

Allows alignment of sign entities on the drawing to be the bottom of a reference entities you will see the following prompts in the command line:

Bottom aligned: Select the static object[s]

Select entities:

Select the reference object(s) then press ENTER

Now select other object[s] to be Bottom aligned to the static object[s]:

Select entities:

Select the object(s) to align then press ENTER

After selection has been made, the program calculates the bottom most coordinate of the objects to move and moves them vertically to the bottom most coordinate of the reference object(s).

If you want to move several items to each be aligned to the bottom of the reference entity, you will have to repeat this routine for each entity

Left Align

Allows alignment of sign entities on the drawing to be the left of a reference entities you will see the following prompts in the command line:

Left aligned: Select the static object[s]

Select entities:

Select the reference object(s) then press ENTER

Now select other object[s] to be Left aligned to the static object[s]:

Select entities:

Select the object(s) to align then press ENTER

After selection has been made, the program calculates the left most coordinate of the objects to move and moves them horizontally to the left most coordinate of the reference object(s).

If you want to move several items to each be aligned to the left of the reference entity, you will have to repeat this routine for each entity

Right Align

Allows alignment of sign entities on the drawing to be the right of a reference entities you will see the following prompts in the command line:

Right aligned: Select the static object[s]

Select entities:

Select the reference object(s) then press ENTER

Now select other object[s] to be Right aligned to the static object[s]:

Select entities:

Select the object(s) to align then press ENTER

After selection has been made, the program calculates the right most coordinate of the objects to move and moves them horizontally to the right most coordinate of the reference object(s).

If you want to move several items to each be aligned to the right of the reference entity, you will have to repeat this routine for each entity

Centre Vertical

Allows alignment of sign entities on the drawing to be the centred on a reference entity you will see the following prompts in the command line:

Vertical aligned:: Select the static object[s]

Select entities:

Select the reference object(s) then press ENTER

Now select other object[s] to be Vertical aligned to the static object[s]:

Select entities:

Select the object(s) to align then press ENTER

After selection has been made, the program calculates the horizontal centre coordinates of the objects to move and moves them horizontally to the centre point coordinate of the reference object(s).

If you want to move several items to each be aligned to centre vertical of the reference entity, you will have to repeat this routine for each entity

Centre Horizontal

Allows alignment of sign entities on the drawing to be the centred on a reference entity you will see the following prompts in the command line:

Horizontal aligned: Select the static object[s]

Select entities:

Select the reference object(s) then press ENTER

Now select other object[s] to be Horizontal aligned to the static object[s]:

Select entities:

Select the object(s) to align then press ENTER

After selection has been made, the program calculates the vertical centre coordinates of the objects to move and moves them vertically to the centre point coordinate of the reference object(s).

If you want to move several items to each be aligned to centre horizontal of the reference entity, you will have to repeat this routine for each entity

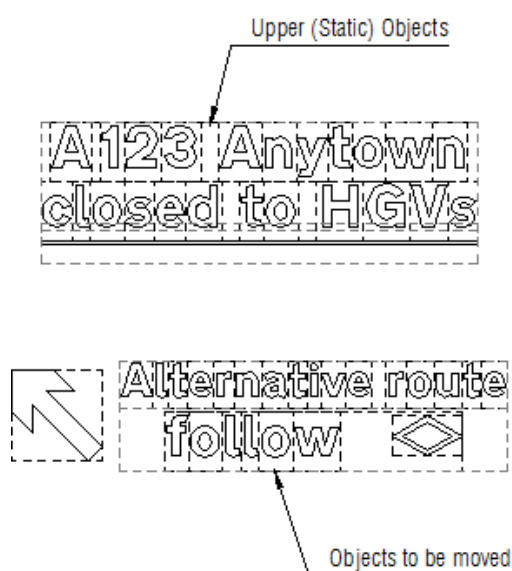
GAPPING TOOLS

Sets the gap between two objects or two sets of objects

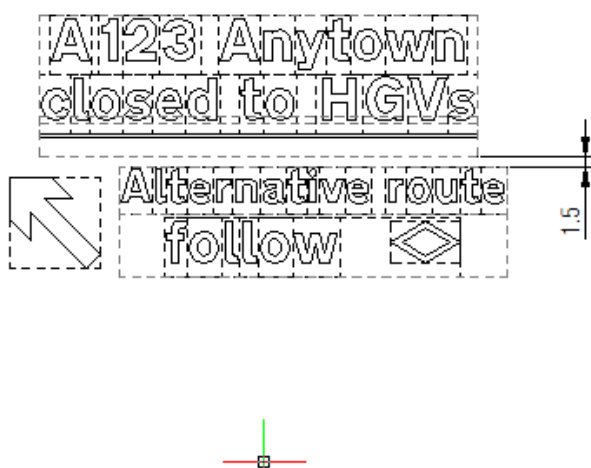
Select the icon that matches your desired alignment

In the example shown below GAP OBJECTS BELOW has been chosen

Example to set the gap between these two set of objects show below to 1.5sw select the GAP OBJECTS BELOW icon:



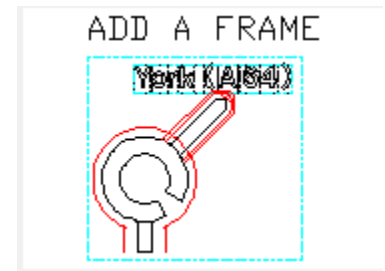
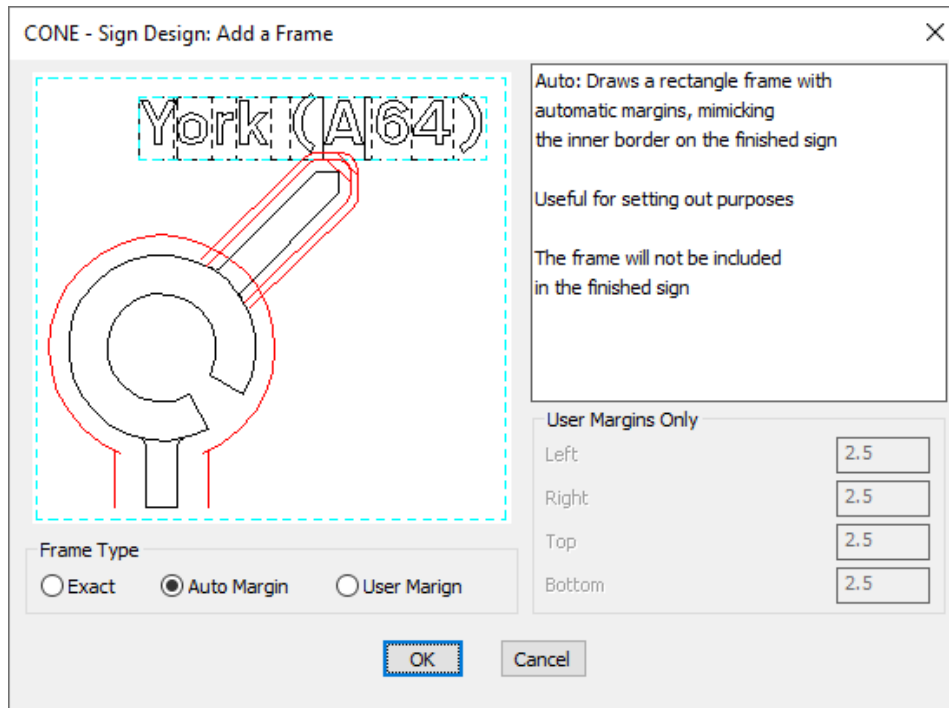
RESULT



Add a Frame

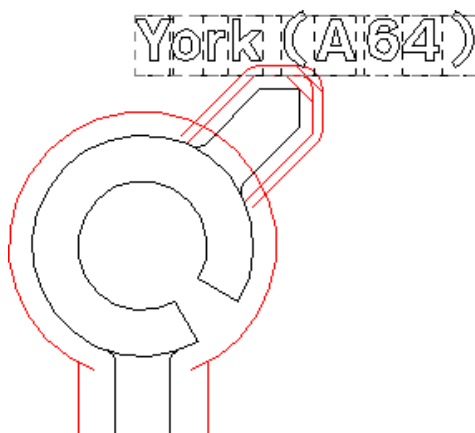
The Add a Frame tools add various frames to sign objects, the frames are not included in the finalised sign

Selecting the ADD A FRAME icon loads the dialog shown below:

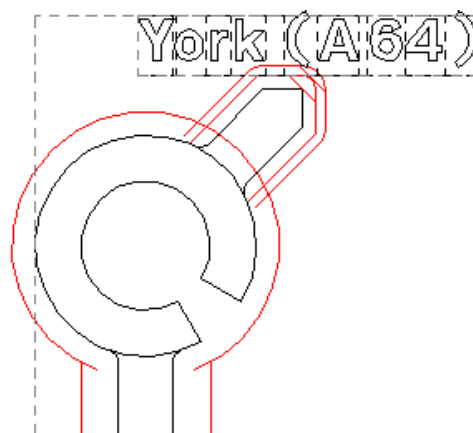


Exact:

Sometimes it's useful to add an exact frame around objects to assist in manual alignment, for example if you need to snap to the bottom left extents of the objects below, without the frame you would need to construct your own guide lines in order to reference the outermost corners. After a frame has been added, objects snaps can be set to the corners of the frame, note that the tool ignores any NO-GO zones and works to the extents of any legend tiles



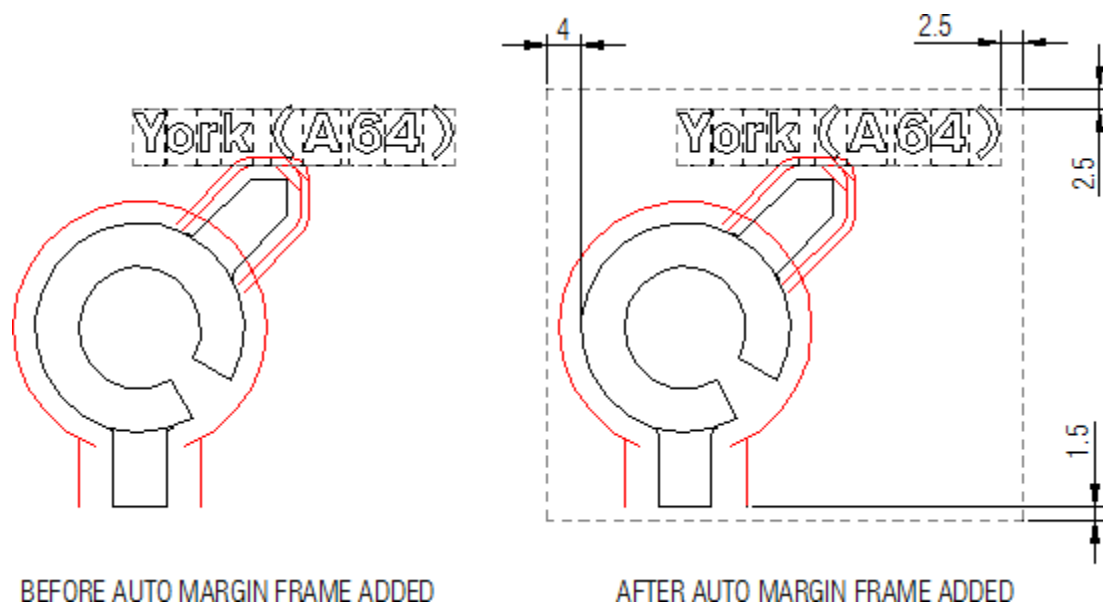
BEFORE EXACT FRAME ADDED



AFTER EXACT FRAME ADDED

Auto Margin:

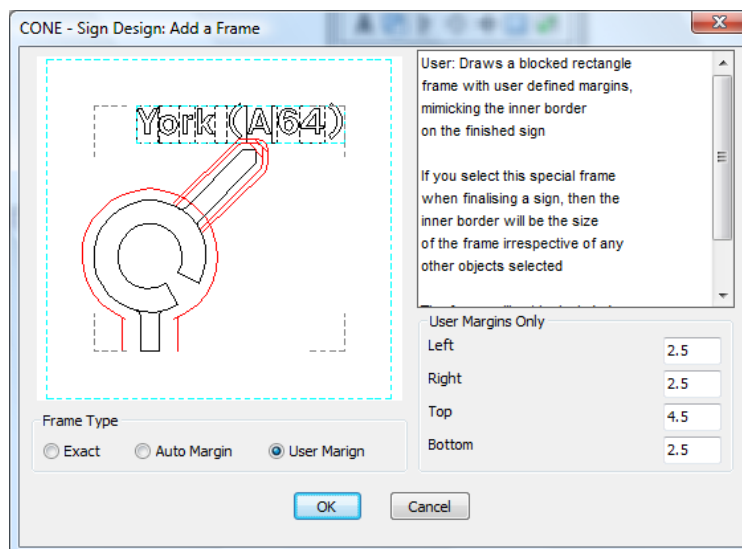
Auto Margin mimics the inner border of a finished sign See example below:



User Margins:

Cone automatically calculates the correct inner border margins when finalising the sign; however there are some instances when this will not meet the requirements.

Example: (see diagram below) When an overhead sign is mounted without a grey backing board then the top margin has to be increased from 2.5sw to 4.5sw. This is accomplished by adding a user margin of 4.5 for the top and the normal 2.5 for the other three margins.

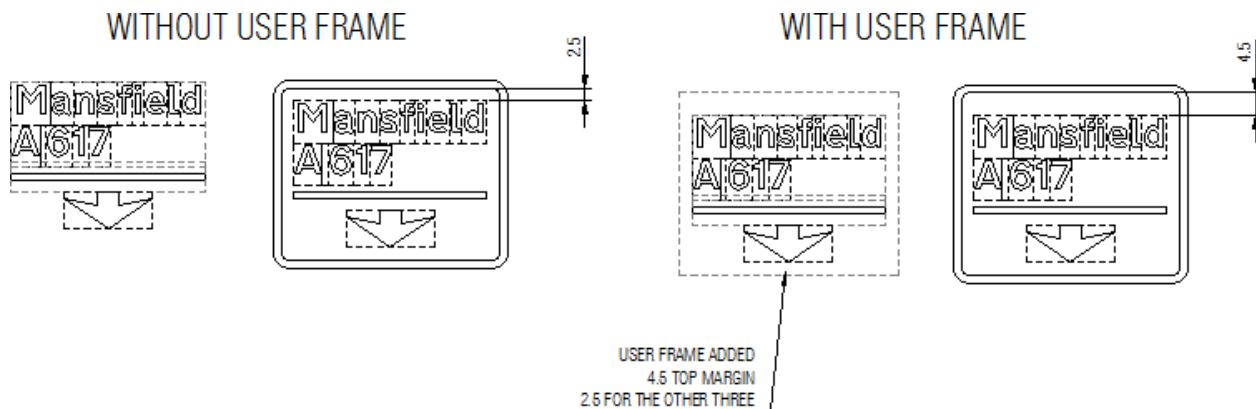


Input required user margins and select the OK button

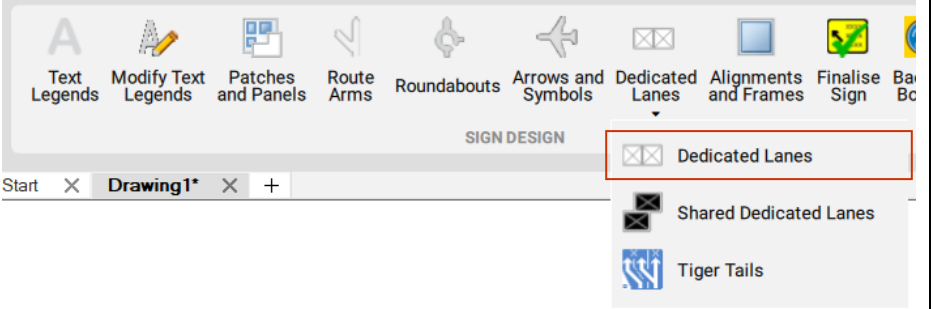
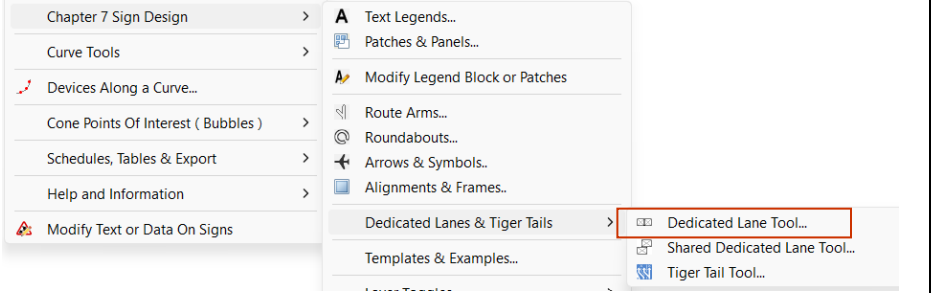
You will then be prompted to select entities, use normal CAD methods for selection and press enter when finished selecting, the frame will be added to your sign objects

At sign finalisation time the finalisation tool detects the user frame and sets the inner border to be the same size of the User frame and the 4.5 top margin is achieved

Note: The User frame is not included in the finished sign



Dedicated Lane Tool

Command: CUKDEDICATEDLANES RIBBON: CONE12 Roads_SIGN DESIGN	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_Sign_Design_Tools	

CONE Sign Design: Dedicated Lane Advance Direction Alignment Tool

Instructions

Number of Lane Sections)

☒ 2 ☐ 3 ☐ 4

Background Colour of Sign

☒ Dark (Blue or Green)

☐ Light (White or Yellow)

☒ Add Inner Frame?

Optional Junction Number Patch & Mileage

☐ Include Junction Num? 12

☐ Include Mileage?

1/3
1/2
2/3
3/4
1

Destination Selections

Destination A OBJECTS
CLICK TO SELECT

Destination B OBJECTS
CLICK TO SELECT

Arrow Selections

↑ ↑↑

Quick Preview... OK & Reload... OK Cancel

This tool assists in the addition of lane arrows, horizontal bars and vertical lane lines to destinations [text legends] that you have created in the current drawing

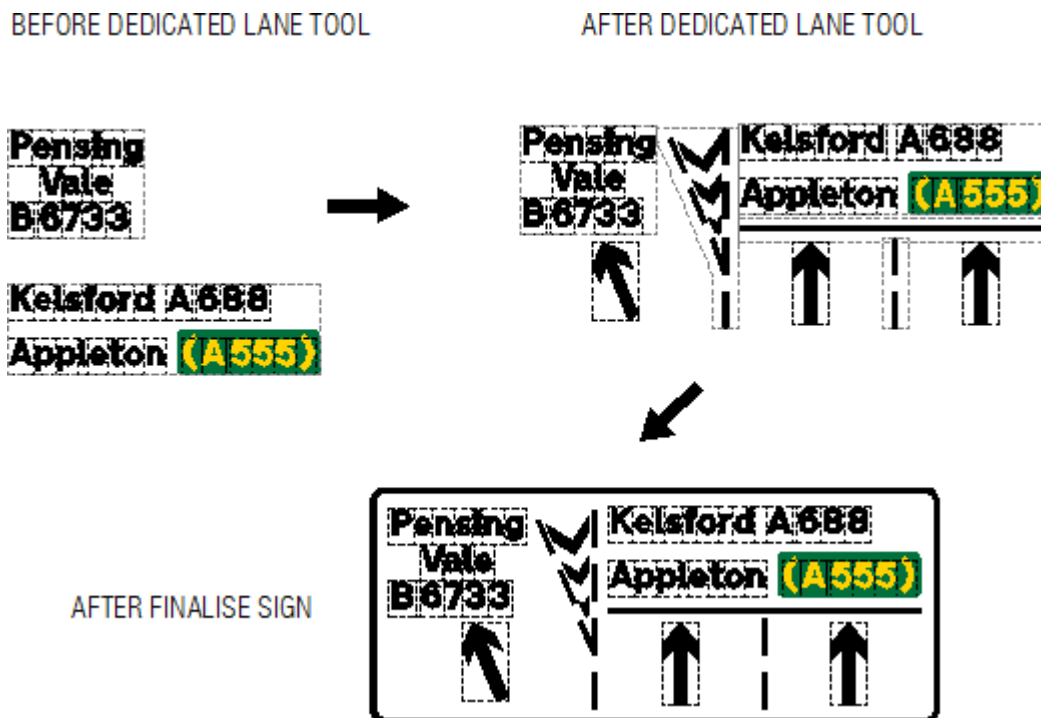
1. Choose the number of sections required
2. Select the destination objects for each section
3. Select the lane arrow configuration for each section

Select the OK button to proceed, the destination objects you have chosen will be aligned and the appropriate arrows, vertical lane lines and horizontal bars will be inserted.

NOTE! You should check the results and re-align objects as required to obtain the best balanced design in line with the guidance provided in Section 6 of Chapter 7

The dedicated lane alignment tool automates most of the alignment and spacing tasks when creating dedicated lane signs

All the user needs to create are the objects (legends, panels, patches and symbols) for each lane or set of lanes, the dedicated lane tool adds the lane arrows, horizontal and vertical bars and takes care of the spacing and alignments.



First select the number of Lane Sections required (a section can contain between one and four lanes)

Then for each section select the destination objects, the dialog will temporarily disappear and you will be prompted to select objects for each section thus:

Command: CATOOLS

Select Destination objects to include in Section 1 Select Entities:

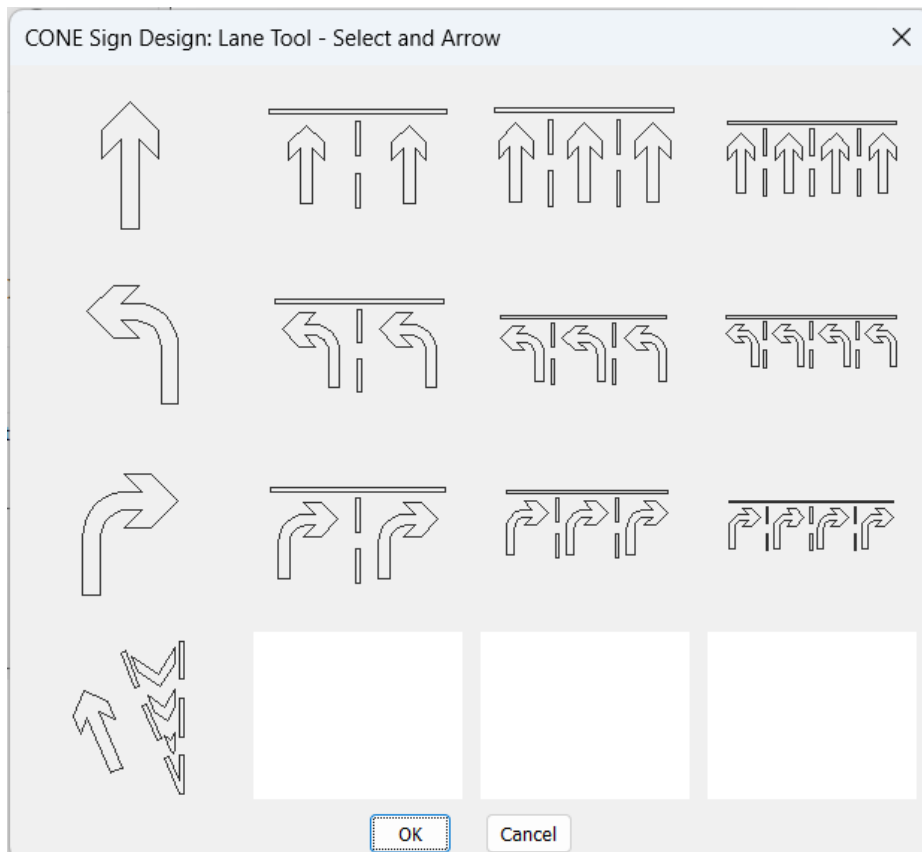
Use normal CAD methods for selection and press enter when finished selecting, the dialog will re-load and the section icon will have changed to confirm that a selection has been made.

You can reselect objects at any time.

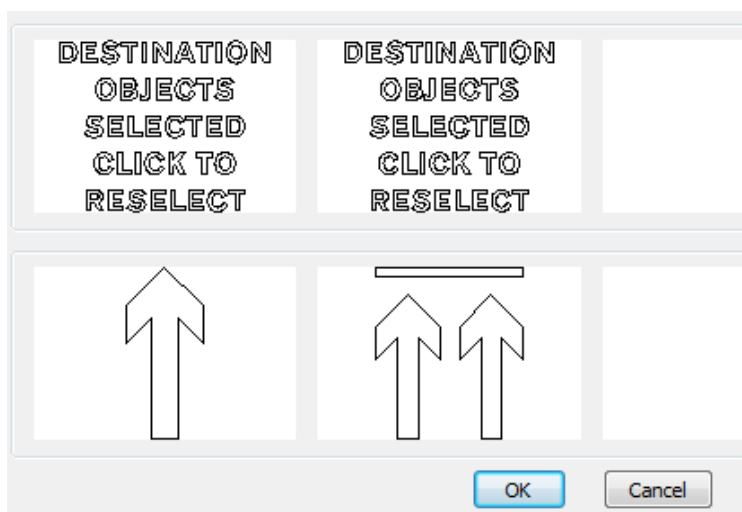
DESTINATION
OBJECTS
SELECTED
CLICK TO
RESELECT

Next choose the lane arrow requirements for each section; click the arrow icon below each section, a sub dialog will be loaded

Select that matches the lane arrow requirements for each section and repeat for each section

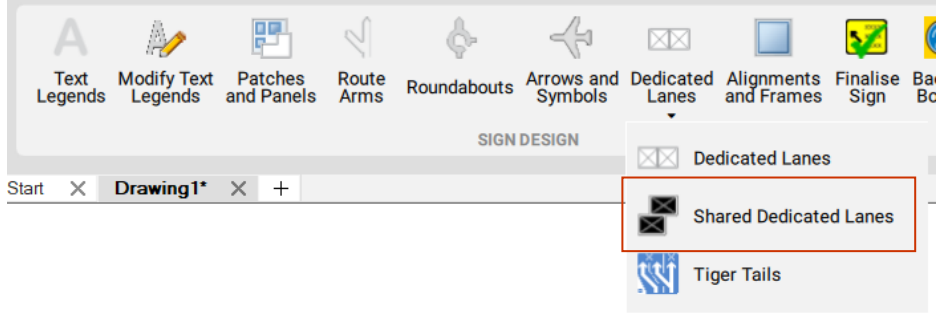
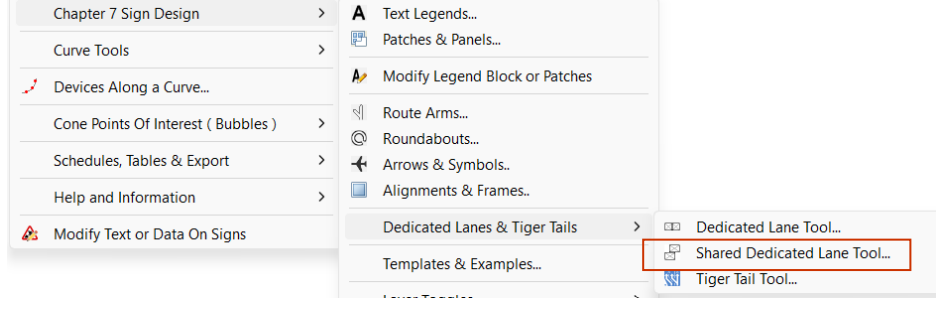
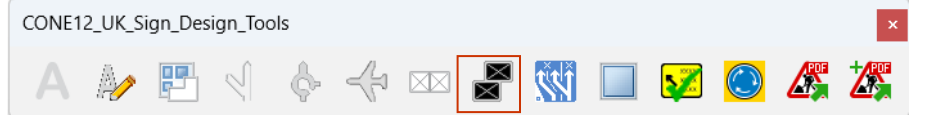


When all section objects and arrows are selected pick the OK button to finish



The original sign objects will be move and the arrows and lines will be added, you should double check that the result is to your requirements and make adjustments as required before finalising the sign

Shared Dedicated Lane Tool

Command: CUKSHAREDDEDICATEDLANES RIBBON: CONE12 Roads_SIGN DESIGN	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_Sign_Design_Tools	

The Shared Dedicated Lane Tool automates most of the alignment and spacing tasks when creating shared dedicated lane signs

All the user needs to do is to create the objects (legends, panels, patches and symbols) for each lane or set of lanes, the tool then adds the lane arrows, horizontal and vertical bars and takes care of the spacing and alignments.

CONE Sign Design: Shared Lane Advance Direction Alignment Tool

Instructions

1. Select the desired Shared Lane Template from the Templates list
2. Pick each of the required Destination Objects buttons in turn to select destinations that have been created using the Sign Design: Text Legend and/or Arrows and Symbols tools
3. Choose the desired options applicable to each template
4. Pick either OK & Reload or OK to proceed. Note OK & Reload will create the chosen output and reload this tool, the destinations will still be available

Templates

- Template A1
- Template A2
- Template B1
- Template B2
- Template C1**
- Template C2
- Template D1
- Template D2
- Template D3
- Template D4

Background Colour of Sign

☒ Dark (Blue or Green)

☐ Light (White or Yellow)

☒ Add Inner Frame?

Additional Left Lane

☐ Do Not Include

☒ Ahead Arrow

☐ Turn Left Arrow

☐ Lane Drop

Optional Junction Number Patch & Mileage

☒ Include Junction Num? 12

☒ Include Mileage?

1/3

1/2

2/3

3/4

1

1 - 1/4

Destination Legend Selection

Destination A OBJECTS

CLICK TO SELECT

Destination B OBJECTS

CLICK TO SELECT

Destination C OBJECTS

CLICK TO SELECT

Destination D OBJECTS

CLICK TO SELECT

Lane Width Rules

☒ The narrowest lane(s) shall not be less than 50% of widest lane(s)

☐ The narrowest lane(s) shall not be less than 75% of widest lane(s)

☐ All lanes to be of equal width

OK & Reload... OK Cancel

Templates

First select the Template that suits your design requirements, the layout images of the template will be displayed and the Destination object image will be updated to suit.

Background Colour

Choose either Dark or Light

Dark signs (Blue or Green) will require Transport Medium Text

Light signs White or Yellow) will require Transport Heavy Text

Add Inner Frame

Select this option to add a inner frame which is useful for alignment purposes

Additional Left Lane?

Templates C1,C2,D1,D2,D3 and D4 support an additional left lane to be added

Include Junction Num?

Select this check box if a Junction number is required and enter the junction number in the edit box

Include Mileage

Select this check box if a Mileage patch is required and select the desired milage from the list

Lane width rules

Select the Lane width rule that matches your requirements

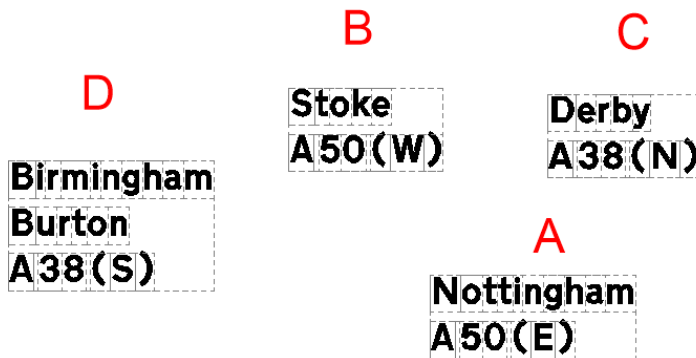
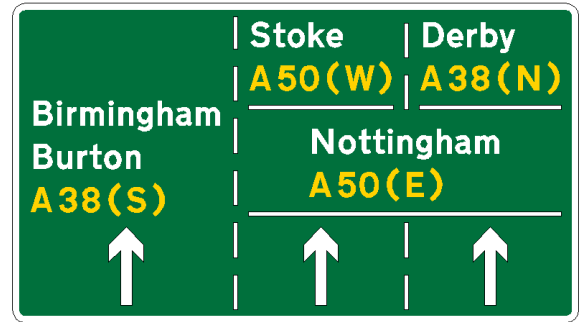
Example:

In order to create this example sign the destinations need to be first created

The four destinations have been created using the Text for Direction Signs - Transport Medium tool

Template C1 with an additional Left lane has been chosen

(No junction number or Mileage patch required)



The above have been created with the **Text for Direction Signs - Transport Medium tool**

Each of the four destinations are then selected by picking the appropriate icon from the main dialog



Select the Destination A object

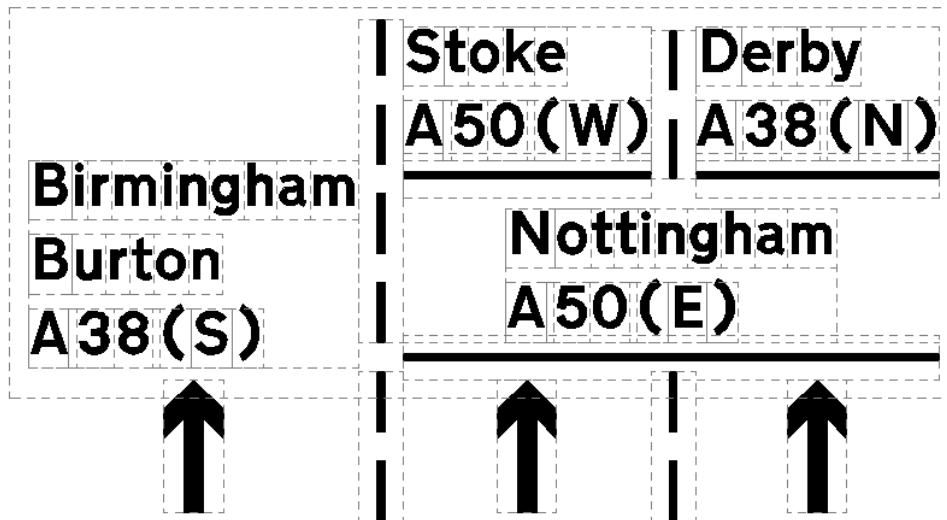
The dialog will change to show



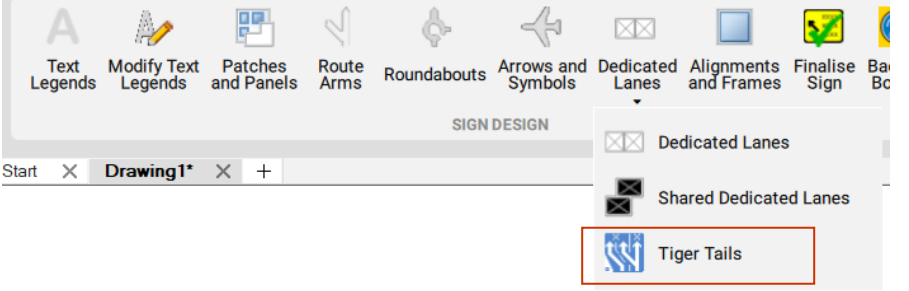
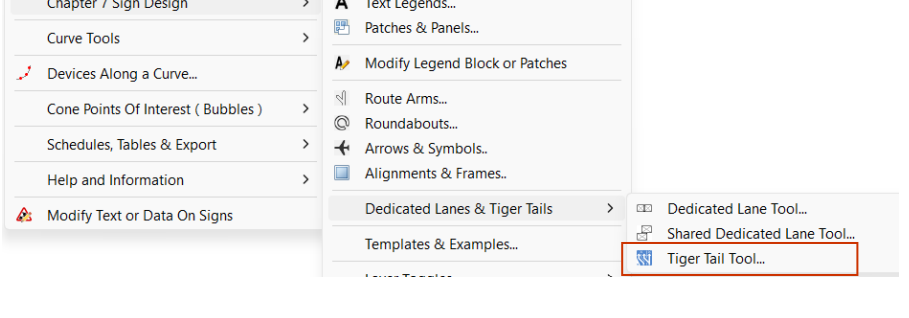
Repeat for the other three destinations

When all four destinations have been selected press the OK button and the tool will align the objects, add the lane arrows and alignment frame

This design is now ready to be **Finalised**

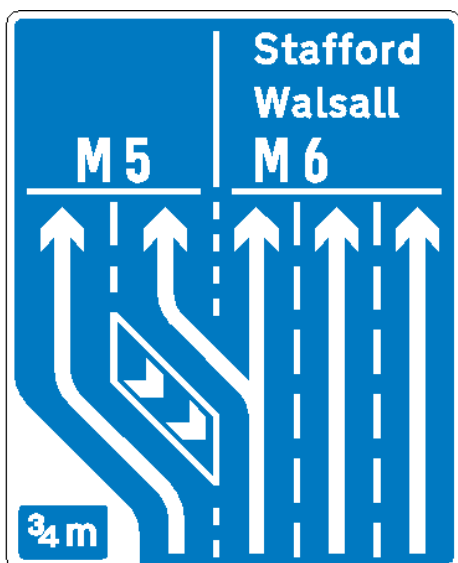


Tiger Tail Tool

Command: CUKTIGERTAILS RIBBON: CONE12 Roads_SIGN DESIGN	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_Sign_Design_Tools	

The Tiger Tail (and Lane Gains) Tool automates most of the alignment and spacing tasks when creating tiger tail or lane gain signs

All the user needs to do is to create the objects (legends, panels, patches and symbols) for each lane or set of lanes, the tool then adds the lane arrows, horizontal and vertical bars and takes care of the spacing and alignments.



CONE Sign Design: Tiger Tail & Lane Gain Signs X

Instructions

1. Select the desired Tiger Tail or Lane Gain Template from the Templates list
2. Pick each of the required Destination Objects buttons in turn to select destinations that have been created using the Sign Design: Text Legend and/or Arrows and Symbols tools
3. Choose the desired options applicable to each template
4. Pick either Quick Preview, OK & Reload or OK to proceed. Note OK & Reload will create the chosen output and reload this tool, the destinations will still be available

Templates

Tiger Tails - 2 Destinations

Tiger Tails - 3 Destinations (2 Shared)

Tiger Tails - 3 Destinations

Tiger Tails - 2 Destinations - Double Diverge

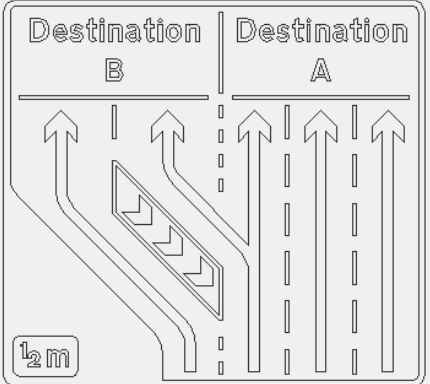
Tiger Tails - 3 Destinations - Double Diverge

Lane Gain Left

Lane Gain Right

Lane Gain Left - Shared Destinations

Lane Gain Right - Shared Destinations



Destination Legend Selection

Destination B

OBJECTS

CLICK TO SELECT

Destination A

OBJECTS

CLICK TO SELECT

Options

Ahead lanes

☐ 1

☒ 2

☐ 3

☐ 4

☐ 5

Distance Patch

☐ None

☒ Mileage

☐ Yds - Single Line

☐ Yds - Two Line

Yds

Background Colour

☒ Blue ☐ Green ☐ White

Min Chevrons

☐ Two ☒ Three

Diverge Lanes

☐ Always Equal Width (When applicable)

Balanced Legends

☒ Balance Legends Vertically (When applicable)

Ref/Label/WD X Hgt

Description

Output Purpose

☒ Working Drawing (Includes TM Diagram Sign Face)

☐ TM Diagram Only (Sign Face)

Quick Preview...
OK & Reload...
OK
Cancel

Templates

First select the Template that suits your design requirements, the layout images of the template will be displayed and the Destination object image will be updated to suit.

Background Colour

Choose either Blue, Green or White

Dark signs (Blue or Green) will require Transport Medium Text

White signs will require Transport Heavy Text

Ahead Lanes

Select this number of lanes going straight ahead (Note the image in the dialog does not change)

Distance Patch (Not applicable to Lane Gain Signs)

Choose whether to include a distance patch at the bottom left or not, pick the appropriate mileage distance from the list or for yardage enter the required distance in the edit box

Diverge Lanes (Not applicable to Lane Gain Signs)

If you have selected a template that includes diverge lanes then you may specify that the diverge lanes are of equal width

Min Chevrons (Not applicable to Lane Gain Signs)

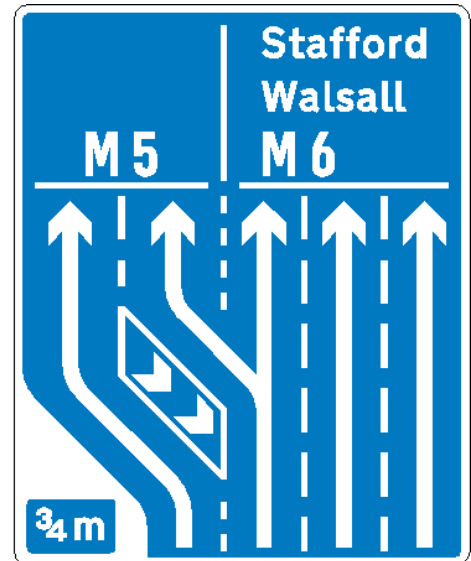
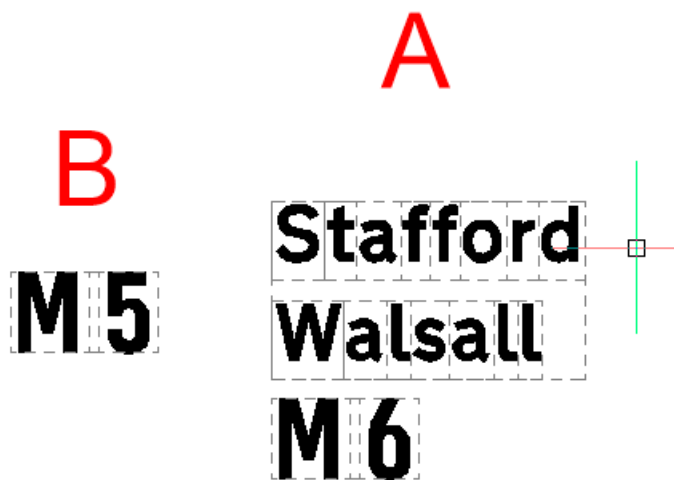
Specify if the minimum chevrons will be Two or Three

Example: Tiger Tail Sign

The two destinations required for this example have been first created using the

Text for Direction Signs - Transport Medium tool

And the **Motorway Route Numbers** tool



Each of the destinations are then selected by picking the appropriate icon from the main dialog



Select the Destination A object. The dialog will change to show that Destination A has been selected

Repeat for other destinations

When all destinations have been choose the **Output Purposes**

Ref/Label/WD X Hgt

Description

Output Purpose

☒ Working Drawing (Includes TM Diagram Sign Face)

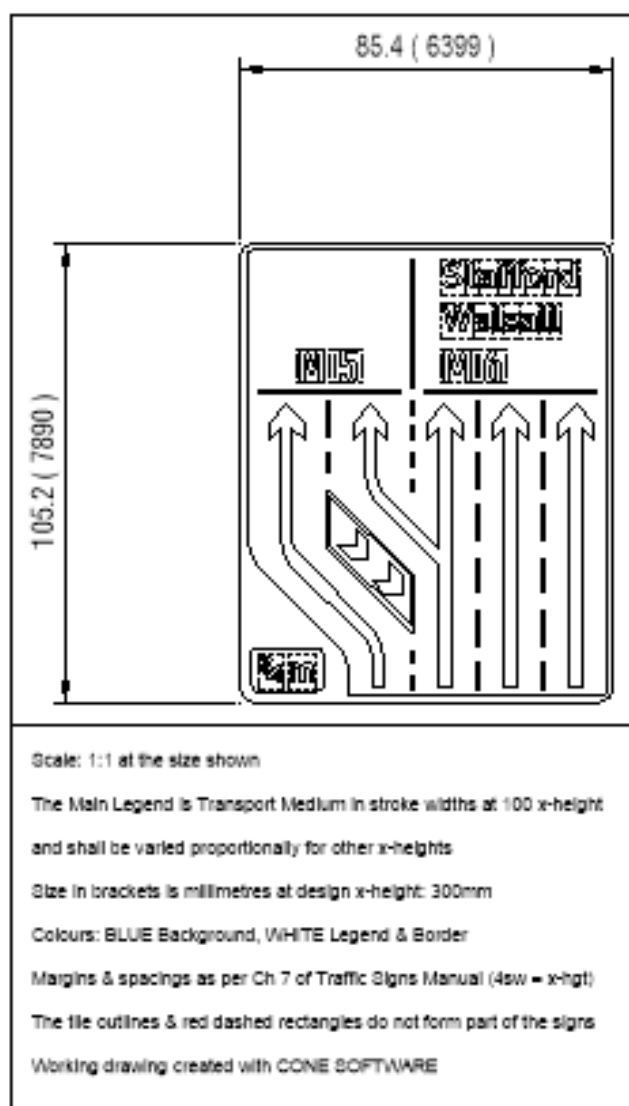
☐ TM Diagram Only (Sign Face)

Choose between **Working Drawing** or the **TM Diagram Only(Sign Face)**

Enter a reference number , description and intended x-Hgt

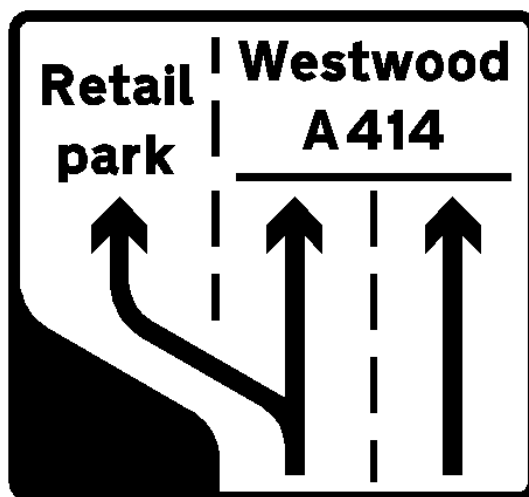
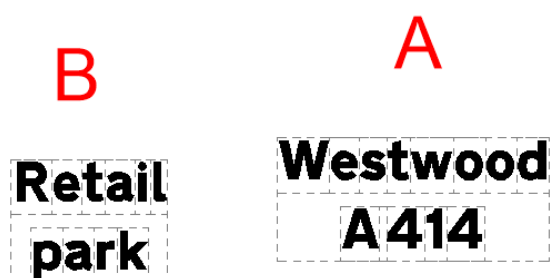
Select the OK button to proceed

Typical Working Drawing



Example Lane Gain Sign

The two destinations required for this example have been first created using the **Text for Direction Signs - Transport Heavy** tool



Each of the destinations are then selected by picking the appropriate icon from the main dialog



Select the Destination A object. The dialog will change to show that Destination A has been selected

Repeat for other destinations

When all destinations have been choose the **Output Purposes**

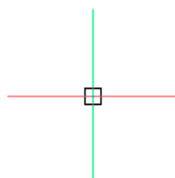
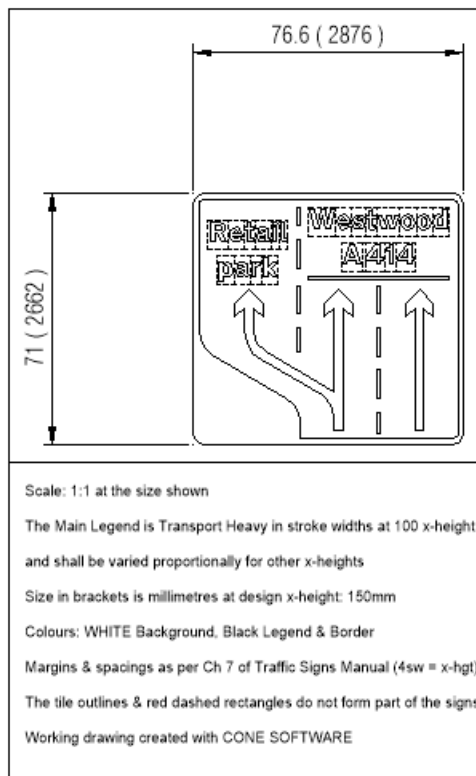
A screenshot of the 'Output Purposes' dialog box. The dialog has several sections. The 'Background Colour' section has three radio buttons: 'Blue', 'Green', and 'White' (which is selected). The 'Min Chevrons' section has two radio buttons: 'Two' (selected) and 'Three'. The 'Diverge Lanes' section has a checked checkbox for 'Always Equal Width (When applicable)'. The 'Balanced Legends' section has a checked checkbox for 'Balance Legends Vertically (When applicable)'. The 'Ref/Label/WD' section has a text box containing 'A REF' and an 'X Hgt' section with a text box containing '150'. The 'Description' section has a text box containing 'Lane Gain Sign'. The 'Output Purpose' section has two radio buttons: 'Working Drawing (Includes TM Diagram Sign Face)' (selected) and 'TM Diagram Only (Sign Face)'.

Choose between **Working Drawing** or the **TM Diagram Only(Sign Face)**

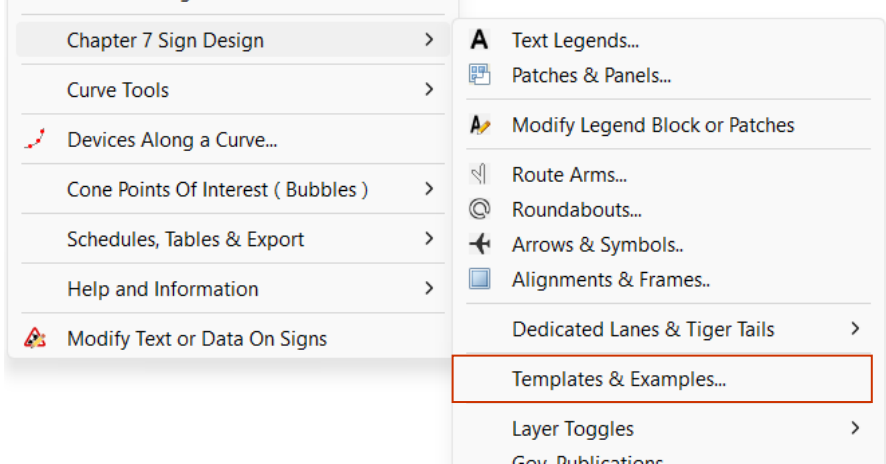
Enter a reference number , description and intended x-Hgt

Select the OK button to proceed

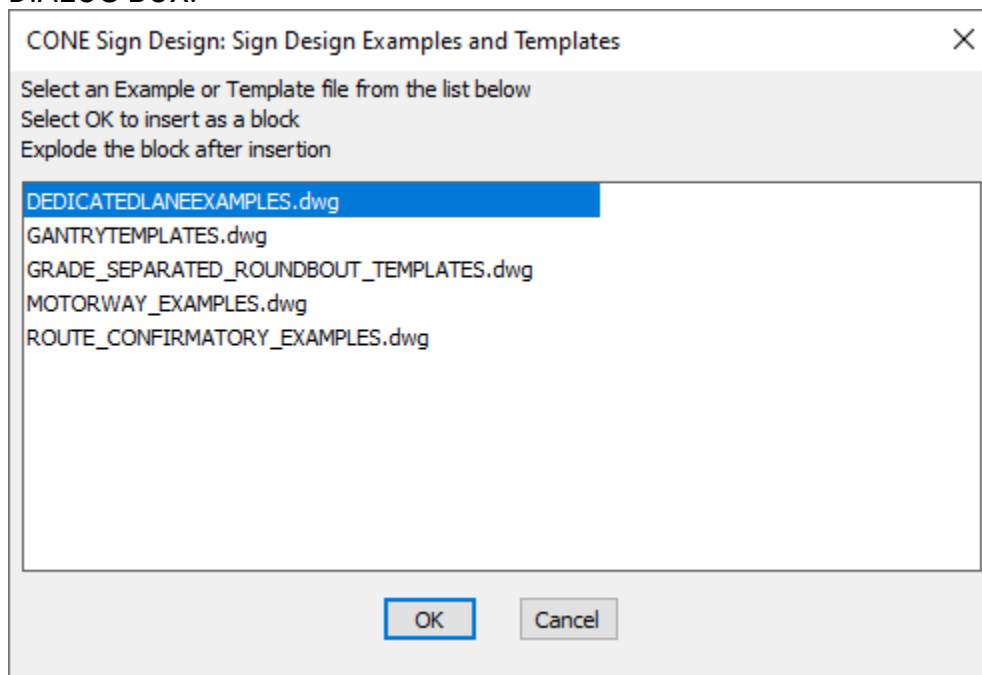
Typical Working Drawing



Templates & Examples

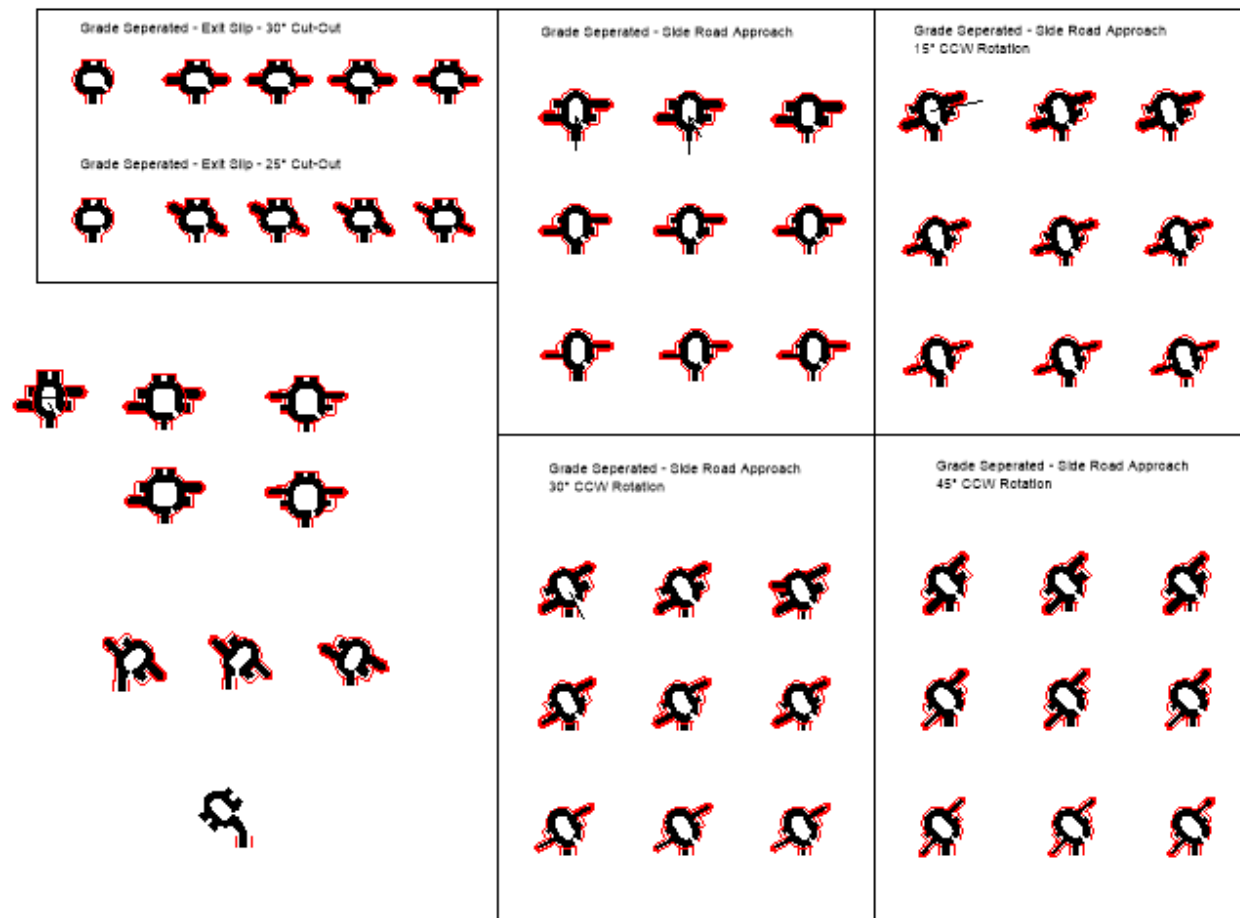
Command: CUKSDESIGNTEMPLATES	
CONE12UKBC Pull Down Menu	

DIALOG BOX:

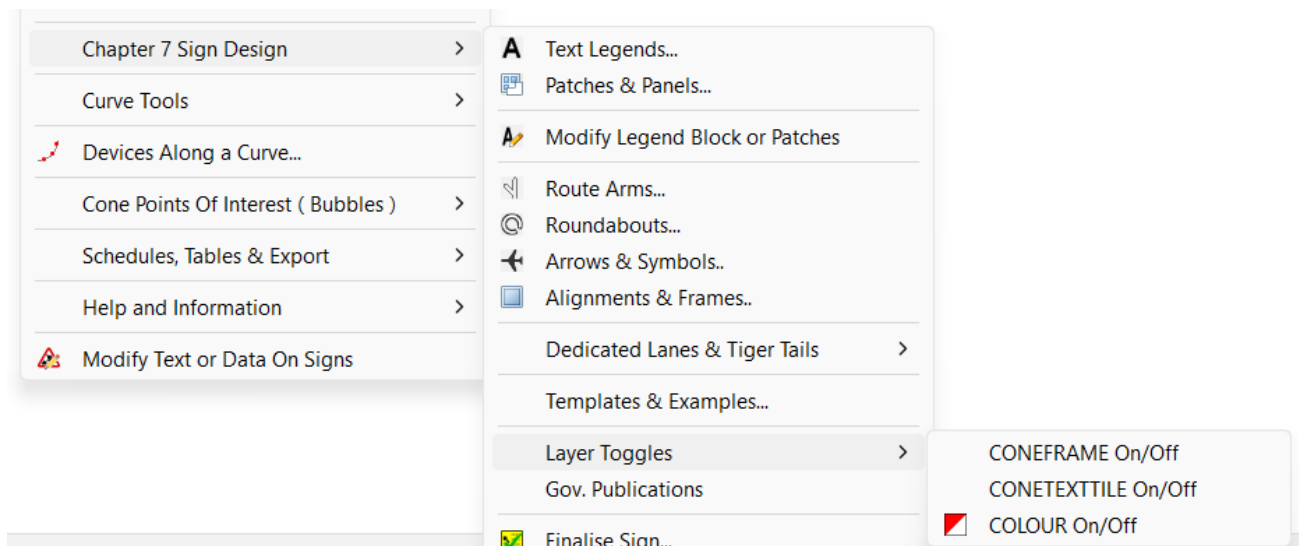


This tool will import a drawing (as a block, explode after insert)
With a range of example templates that you may find useful

Example: GRADE SEPERATED ROUNDABOUT TEMPLATE



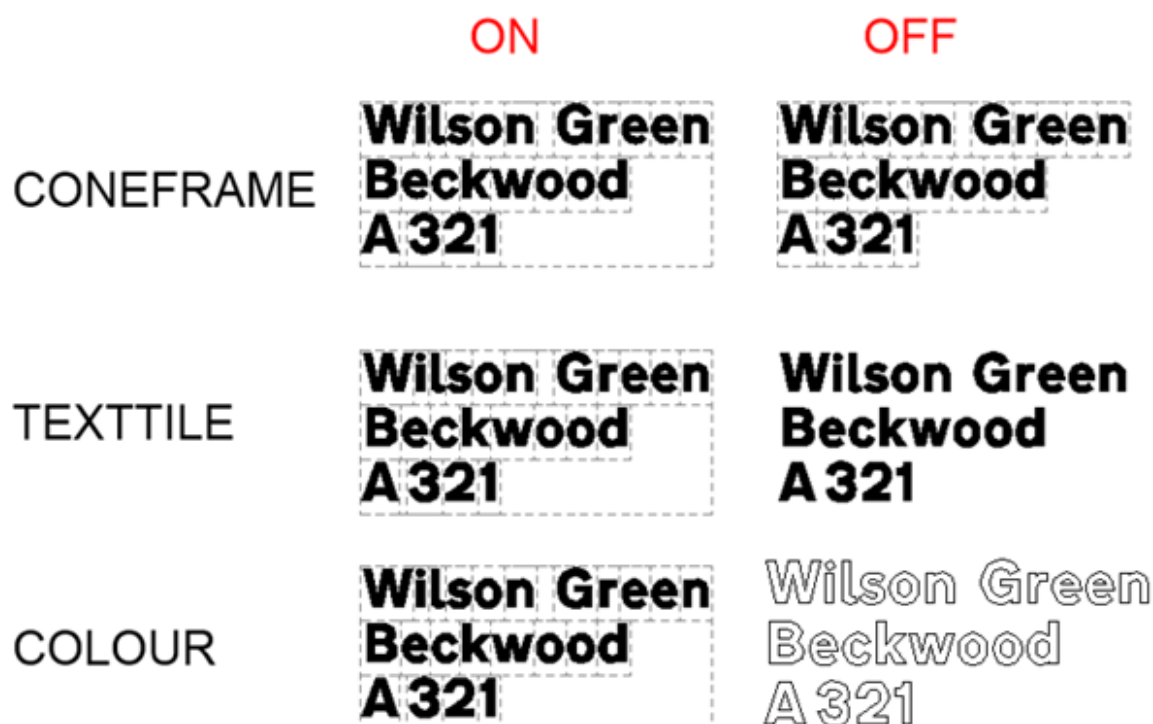
Layer Toggles



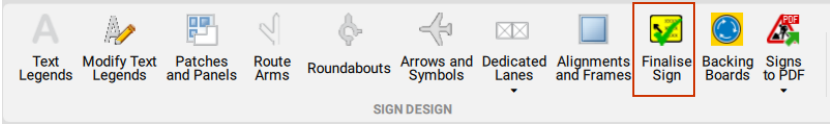
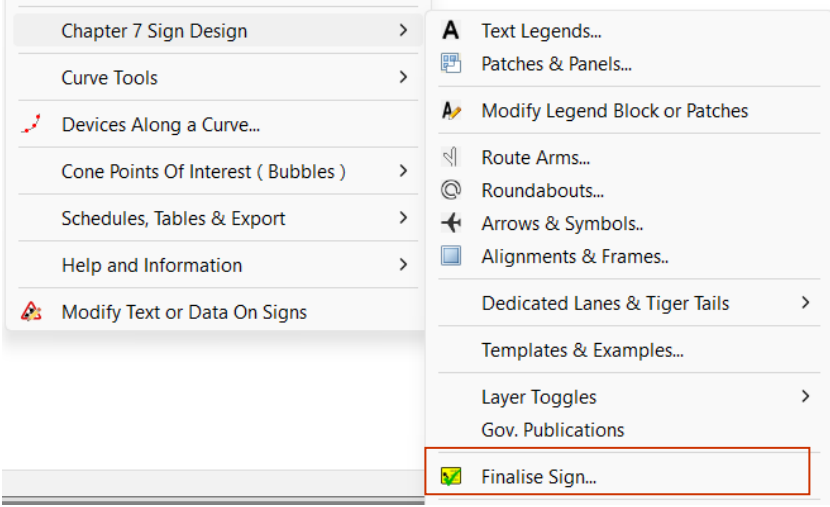
NO DIALOG BOX:

Three layers can be turned ON or OFF using these three options, these functions are only available from the pull-down menu and are provided for user convenience only

It is not necessary to switch the layers OFF. The frames and tiles are not included in the Finalised sign.



Finalise Sign

Command: CUKSCREATE RIBBON: CONE12 Roads_SIGN DESIGN	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_Sign_Design_Tools	

The Finalise Sign Tool adds borders and backgrounds to your sign design objects (legends, panels, symbols, patches, arrows etc)

The tool supports the creation of Single, Double, 3 Stack, 4 Stack and Left and Right Chevron plates

The tool will output either a Working Drawing that includes the Sign Face or the Sign Face only

CONE UK: Sign Design 11: Create Finished Sign

This tool adds borders and backgrounds to selected Sign Design Objects (Text Legends, Arrows, Symbols, Roundabouts, Route Arms etc) and creates a working drawing and/or sign for TM purposes. NOTE! The Sign Design Objects must be inserted on your drawing and arranged accordingly before using this tool

The tool will create both Temporary and Permanent Signs in a range of background colours and will output Single, Flag Type, Double, 3 & 4 Panel Signs

There are many examples in the form of Basic Templates which you can insert into your drawings and experiment with see Chapter 7 Sign Design > Insert Basic Templates

1. Sign Type

☒ Single Panel

☐ Double Panel

☐ Three Panels

☐ Four Panels

☐ Left Chevron

☐ Right Chevron



2. Background Colour

☒ Yellow

☐ Green

☐ Blue

☐ White

☐ Red

☐ Brown

☐ Black

☐ Blue on White

3. Sign Usage, File Name & Sign Data

Output Purpose

☐ Working Drawing (Includes TM Diag. Sign Face)

☒ TM Diag. Only (Sign Face)

Working Drawing Scale

☒ 1:1 - Sizes in Stroke Widths

☐ 1:10 - Sizes in Millimetres

Export TM Diagram?

☐ Yes ☒ No

Export File Name and path

C:\Users\peter\AppData\Roaming\CONE11UK\USER\

Sign Ref / Label

13.9

Sign Description

Schedule 13-9 : Temporary Information

4. Select Panel Objects

Select Panel 1 Objects... ☒

Select Panel 2 Objects... ☐

Select Panel 3 Objects... ☐

Select Panel 4 Objects... ☐

Panel Divider (Stroke Widths)

☒ 1.0 sw ☐ 1.5 sw

5. Justify Panel Objects

☐ Left ☒ Centre ☐ Right

☐ Left ☒ Centre ☐ Right

☐ Left ☒ Centre ☐ Right

☐ Left ☒ Centre ☐ Right

6. Sign Size & X-Height (Adjust as Required)

The WIDTH of the sign is GREATER THAN the HEIGHT by a factor of 1.92

Sign Sizing Method

☒ Variable (The width to height ratio is fixed)

☐ Fixed Plate Width & Height

Width

1488

Height

775

X-Hgt

100

X-hgt Rounding Down (Fixed Plate Method)

☐ No Rounding

☒ To nearest 5mm

☐ To nearest 2.5mm

☐ To nearest 1mm

☐ To nearest 0.5mm

Quick Preview... OK Cancel

1 Sign Type

1. Sign Type

☒ Single Panel

☐ Double Panel

☐ Three Panels

☐ Four Panels

☐ Left Chevron

☐ Right Chevron



Choose the finished sign type, for Single, Left Chevron and Right Chevron only a single set of objects is required, whereas for a Four Panel Stack Sign four separate sets of objects will be required

2 Background Colour

2. Background Colour

☐ Yellow

☒ Green

☐ Blue

☐ White

☐ Red

☐ Brown

☐ Black

☐ Blue on White

Choose the intended background colour.

Note if your final design includes text and you are creating a Yellow or White background sign then any text you select must be Transport Heavy and/or Motorway Black else for all the other colours the text you select must be Transport Medium and/or Motorway White

3. Output purposes

3. Sign Usage, File Name & Sign Data

Output Purpose

☐ Working Drawing (Includes TM Diag. Sign Face)

☒ TM Diag. Only (Sign Face)

Working Drawing Scale

☒ 1:1 - Sizes in Stroke Widths

☐ 1:10 - Sizes in Millimetres

Export TM Diagram?

☐ Yes ☒ No

Export File Name and path

C:\Users\peter\AppData\Roaming\CONE11UK\USER\

Sign Ref / Label

13.9

Sign Description

Schedule 13-9 : Temporary Information

Working Drawing (Includes TM Diag Sign Face): Creates the finished sign from objects you select on screen and adds a manufacturing data table (see below).

Working Drawing Scale : Determines what units are used on the working drawing

If you set the scale to **1:1 Sizes in Stroke Widths** then the working drawing will show dimensions in stroke widths and the scale of the drawing will be 1:1 (in stroke width units) whereas selecting **Sizes in Millimetres** will show dimensions in millimetres and the scale of the drawing will be 1:10

For use in a TM Diagram Only: Creates the finished sign from objects you select on screen and Creates a sign block in you current drawing that you can use in your schemes

Export TM Diagram? (ONLY IF YOU HAVE SELECTED TM DIAGRAM ONLY)

Creates the finished sign from objects you select on screen, creates a sign block that you can use in your schemes and writes a copy as an external block in the "CONE11UK\USER" subfolder of your

personal USER folder, this allows it to be located easily with the Sign/Browse/Insert Tool.

Note: Your personal USER folder can be found by typing the following at the command line and press enter (include the brackets, spaces and quotes)

Command: (getenv "appdata")

A typical response will be: "C:\\Users\\peter\\AppData\\Roaming"

So in this case the full path to the location will be

"C:\\Users\\peter\\AppData\\Roaming\\CONE11UK\\USER"

Sign Ref/Label: Adds a reference to the sign attribute data

Sign Description: Adds a description to the sign attribute data

Both the above will be included in any Sign Schedule that you may create

4. Select Panel Objects and 5 Justify Panel Objects

The screenshot displays two adjacent panels from a software application. Panel 4, titled '4. Select Panel Objects', contains four buttons labeled 'Select Panel 1 Objects...', 'Select Panel 2 Objects...', 'Select Panel 3 Objects...', and 'Select Panel 4 Objects...', each followed by an unchecked checkbox. Below these is a section for 'Panel Divider (Stroke Widths)' with two radio buttons: '1.0 sw' (selected) and '1.5 sw'. A help icon is located at the bottom right of this panel. Panel 5, titled '5. Justify Panel Objects', features a help icon at the top. It contains four groups of radio buttons for justification: the first two groups have 'Left' selected, the third has 'Right' selected, and the fourth has 'Centre' selected. The interface is light gray with white text and standard UI controls.

Example

The screenshot displays two panels of the software interface. Panel 4, titled '4. Select Panel Objects', contains four buttons labeled 'Select Panel 1 Objects...', 'Select Panel 2 Objects...', 'Select Panel 3 Objects...', and 'Select Panel 4 Objects...', each with an adjacent checkbox. Below these is a 'Panel Divider (Stroke Widths)' section with two radio buttons: '1.0 sw' (selected) and '1.5 sw'. Panel 5, titled '5. Justify Panel Objects', features a help icon and three groups of radio buttons for justification: the first group has 'Left' (selected), 'Centre', and 'Right'; the second group has 'Left', 'Centre', and 'Right'; the third group has 'Left', 'Centre' (selected), and 'Right'. To the right of these panels is a preview area titled '1. Sign Type' with radio buttons for 'Single Panel', 'Double Panel', 'Three Panels' (selected), 'Four Panels', 'Left Chevron', and 'Right Chevron'. Next to the preview is a visual representation of a three-panel sign with three rounded rectangular boxes labeled 'Panel 1', 'Panel 2', and 'Panel 3' stacked vertically.

The 4 Select Panel buttons will either be enabled or disabled depending on the **Sign Type** chosen

Example: If you have selected a Three Panel Sign then the Select Panel 1 2 and 3 buttons will be enabled and you need to select separate sets of objects to include in each panel then choose between 1.0 sw or 1.5 sw for the panel divider size.

You also need to select the Justification for each set of panel objects

6. Sign Size & X Height

The screenshot shows a dialog box titled '6. Sign Size & X-Height (Adjust as Required)'. Below the title is the text 'The WIDTH of the sign is GREATER THAN the HEIGHT by a factor of 2.763'. The 'Sign Sizing Method' section has two radio buttons: 'Variable (The width to height ratio is fixed)' (selected) and 'Fixed Plate Width & Height'. To the right of this section is a help icon. Below the radio buttons are two columns of controls. The left column contains three input boxes: 'Width' with the value '0', 'Height' with the value '0', and 'X-Hgt' with the value '100'. The right column is titled 'X-hgt Rounding Down (Fixed Plate Method)' and contains five radio buttons: 'No Rounding', 'To nearest 5mm' (selected), 'To nearest 2.5mm', 'To nearest 1mm', and 'To nearest 0.5mm'.

Sign Sizing Method

Variable is the normal sizing method for Permanent Signs

If you know the required x-height you can enter it here after the sign objects are selected.

Changing this value DOES NOT alter the actual CAD finished sizes, it is used to calculate what the finished size of the sign would be based on the x-height entered, this information is shown in the Width and Height edit boxes and in manufacturing data

Fixed Plate Width & Height

The fixed plate width and height option is useful when creating Temporary Signs

You enter the plate width and height for example 1050 x 750
The tool will then calculate the X height

X-Hgt Rounding Down

You may specify the calculated x-Hgt rounding down values here

Example: Variable and Fixed Plate Width & Height method using the same panel objects

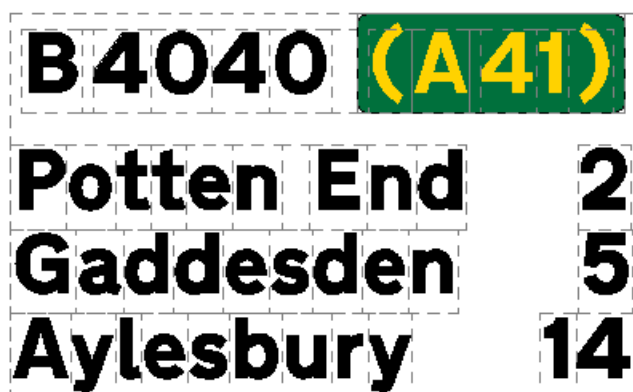


The Variable size method creates the plate around the content using standard Chapter 7 margins
The size of the plate is variable depending on the X height requirements

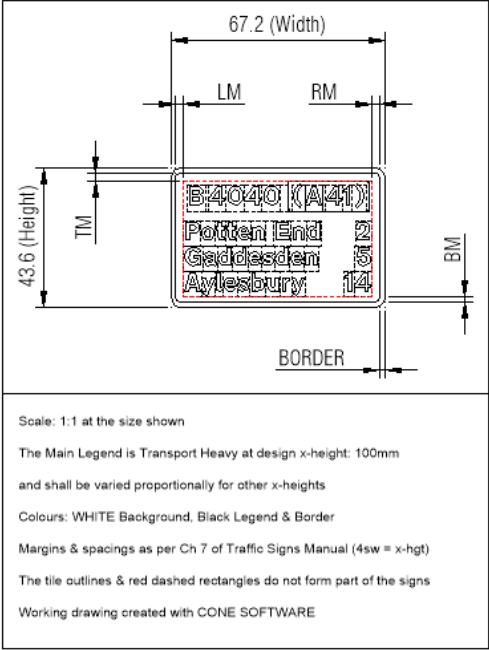
Whereas the Fixed size method best fits the content into the plate size specified

Example Working Drawing Outputs

Single Panel Objects – Background White



Dimension Sizes in Stroke Widths



Single Panel Sign Dimensions		
	Sizes in mm's at Design X-Hgt 100	Sizes in Stroke Widths at X-Hgt 100
Width	1680	67.2
Height	1088	43.6
Border	38	1.5
Left Margin [LM]	63	2.5
Right Margin [RM]	63	2.5
Top Margin [TM]	63	2.5
Bottom Margin [BM]	38	1.5

B4040 (A41)
Potten End 2
Gaddesden 5
Aylesbury 14

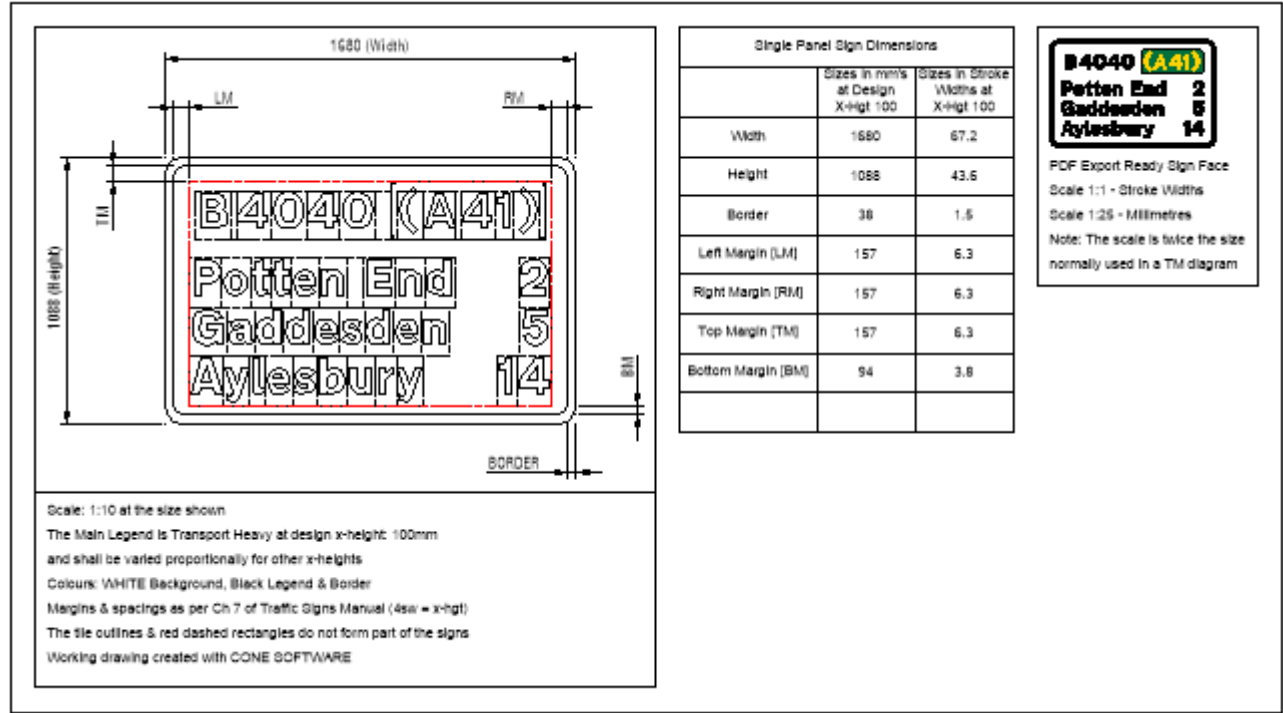
PDF Export Ready Sign Face

Scale 1:2 - Stroke Widths

Scale 1:50 - Millimetres

Note: The scale is the ideal size normally used in a TM diagram

Dimension Sizes in Millimetres



Single Panel Sign Dimensions		
	Sizes in mm's at Design X-Hgt 100	Sizes in Stroke Widths at X-Hgt 100
Width	1680	67.2
Height	1088	43.6
Border	38	1.5
Left Margin [LM]	157	6.3
Right Margin [RM]	157	6.3
Top Margin [TM]	157	6.3
Bottom Margin [BM]	94	3.8

B4040 (A41)
Potten End 2
Gaddesden 5
Aylesbury 14

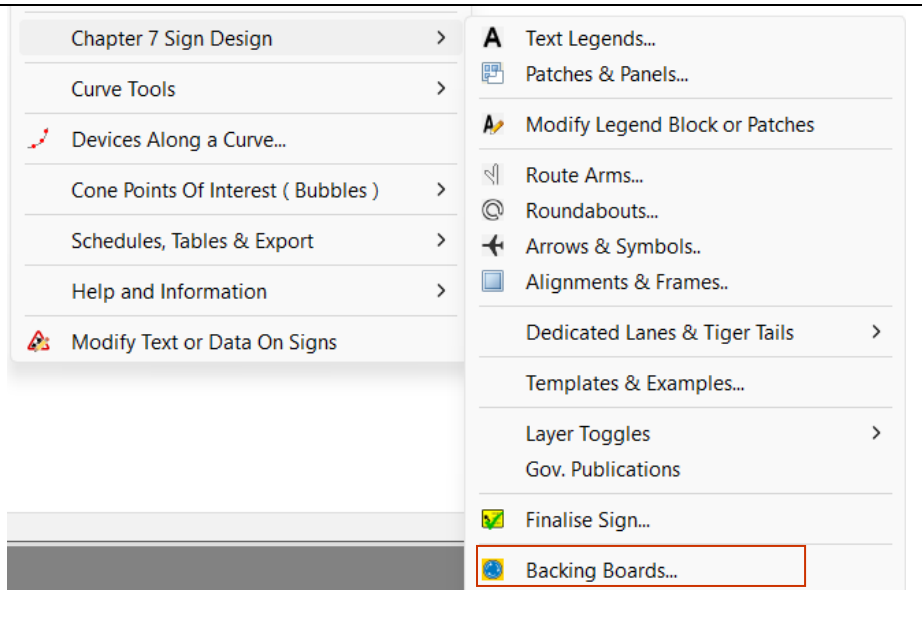
PDF Export Ready Sign Face

Scale 1:1 - Stroke Widths

Scale 1:25 - Millimetres

Note: The scale is twice the size normally used in a TM diagram

Backing Boards

Command: CUKBBOARD RIBBON: CONE12 Roads_SIGN DESIGN	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_Sign_Design_Tools	

CONE UK: Sign Design 11: Create Backing Board

This tool mounts Sign Symbols onto a yellow or grey backing board, the Sign Symbols must be inserted on your drawing before using this tool

[Click here for more info on selecting or creating Sign Symbols](#)

The size of the Backing Board is calculated, and may be increased by entering appropriate values into the Revised Board Width & Height edit boxes

The Horizontal and Vertical Justifications enable Baffles to be created

Information on each option is available via the Help Icons

Examples



Backing Board Colour

☒ Yellow ☐ Grey

Auto arrange?

☒ Auto Arrange ☐ As Selected

If Auto Arrange: Select the sign symbols in order (top to bottom)

Crop (Zero) Margins

☐ Left Margin
☐ Right Margin
☐ Top Margin
☐ Bottom Margin

Select Sign Symbol Objects...

Calculated Minimum Backing Board Size (mm's)

Board Width: 0

Board Height: 0

Corner Radius: 25

Increase Backing Board Size If Req'd

Revised Board Width: 0

Revised Board Height: 0

Horizontal Justification

☒ Centre ☐ Left ☐ Right

Vertical Justification

☒ Centre ☐ Top ☐ Bottom

Backing Board Usage, File Name & Data

Output Purpose

☒ Working Drawing (Includes TM Diagram Sign Face)

☐ TM Diagram Only (Sign Face)

Working Drawing Scale

☒ 1:1 - Sizes in Stroke Widths
☐ 1:10 - Sizes in Millimetres

Export TM Diagram?

Enter File Name and path:

☐ Yes/No ...

Quick Preview... OK Cancel

This tool mounts Sign Symbols onto a Yellow or Grey Backing Board

Sign Symbols are signs that have been converted to symbol format in a way that makes them compatible with other symbols such as Arrows, General and Tourist symbols.

Sign Symbols can be included on Directional Signs (mainly Triangular, Roundels and Supplementary Plates), they are also used when creating signs onto a Backing Board.

Yellow background Backing Boards usually contain Triangular, Roundels and Supplementary Plates.

Grey background Backing Boards usually contain other Directional Signs.

A range of Sign Symbols are available for direct insertion via:

Arrows and Symbols : Sign Symbols For Direction Signs
and

Arrows and Symbols : Sign Symbols For General Usage

Additionally most CONE Signs (there are exceptions) can be converted to Sign Symbols via:

Arrows and Symbols > Convert CONE Signs to Sign Symbols

The key factor to remember when either inserting Sign Symbols or converting Sign Symbols is that the Sign Symbol should be inserted or converted at the intended finished size.

Both of the tools mentioned above (Sign Symbol selection or conversion) include output size options such as height or dia for triangles and roundels and x-height for supplementary plates and other directional signs.

Backing Board Colour

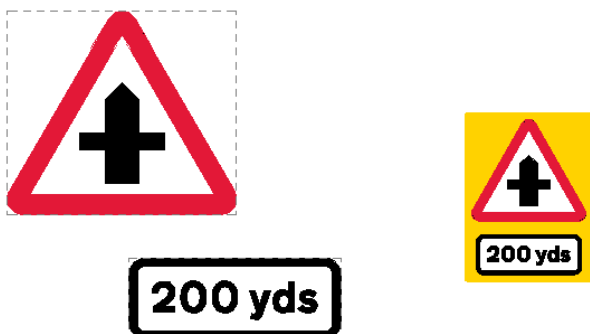
Backing boards can be Yellow or Grey

Auto Arrange

If Auto Arrange is selected then you only need to select symbols in top to bottom order otherwise the symbols need to be arranged with the appropriate spacing by the user.

Example

The two sign symbols were selected in top to bottom order and the tool aligns the symbols with the appropriate gap spacings



Crop (Zero) Margins

The default margins around the Sign Symbol objects are calculated, but you have the option of cropping any of the four margins by selecting the appropriate check boxes:
Left Margin, Right Margin, Top Margin, Bottom Margin

Example All four margins have been cropped



Increase Backing Board Size

You may INCREASE the size of the board by entering values into the Revised Board Width and Height edit boxes. Any increase in width and/or height is added to the margins and the Sign Symbol objects are centre justified vertically and horizontally.

Example: If the calculated Minimum Board Size was 732 x 976 , then you might decide to revise the board size to a more standard size of 750 x 1000

To change the **Corner Radius**, enter a value in mm's into the Corner Radius edit box

Horizontal and Vertical Justification

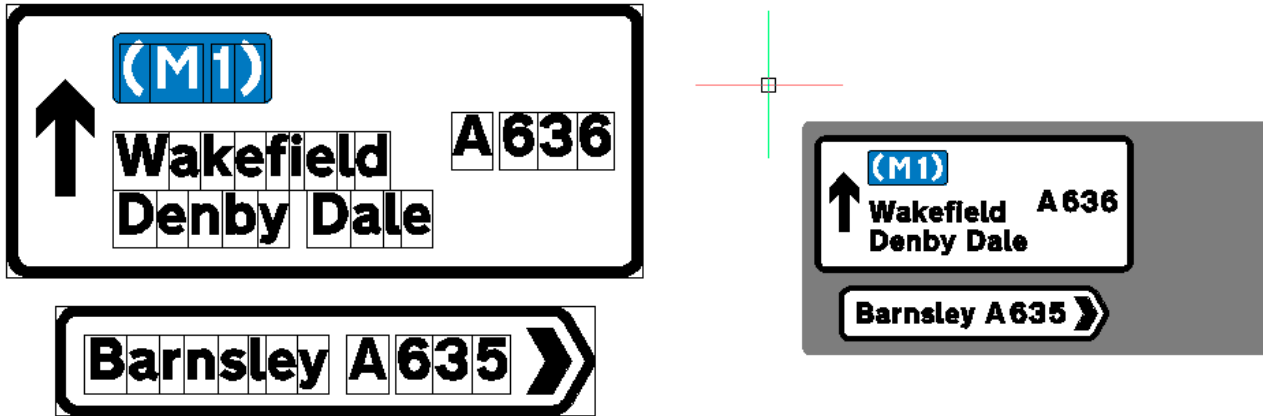
You can choose to change the justification by changing the Horizontal and Vertical Justifications as required.

BAFFLES

You can create a Backing Board with a baffle by increasing revising the widths and/or heights and changing the justification

Example: If the calculated Minimum Board Size was 1468 x 983 , then you might decide to revise the board size to a more standard size of 2000 x 1000 and Horizontally justify left

See diagram for example



Output purpose

Working Drawing (Includes TM Diag Sign Face): Creates the finished sign from objects you select on screen and adds a manufacturing data table (see below).

Working Drawing Scale : Determines what units are used on the working drawing

If you set the scale to **1:1 Sizes in Stroke Widths** then the working drawing will show dimensions in stroke widths and the scale of the drawing will be 1:1 (in stroke width units) whereas selecting **Sizes in Millimetres** will show dimensions in millimetres and the scale of the drawing will be 1:10

TM Diagram Only: Creates the finished sign from objects you select on screen and Creates a sign block in you current drawing that you can use in your schemes

Export TM Diagram? (ONLY IF YOU HAVE SELECTED TM DIAGRAM ONLY)

Creates the finished sign from objects you select on screen, creates a sign block that you can use in your schemes and writes a copy as an external block in the "CONE11UK\USER" subfolder of your personal USER folder, this allows it to be located easily with the Sign/Browse/Insert Tool.

Note: Your personal USER folder can be found by typing the following at the command line and press enter (include the brackets, spaces and quotes)
Command: (getenv "appdata")

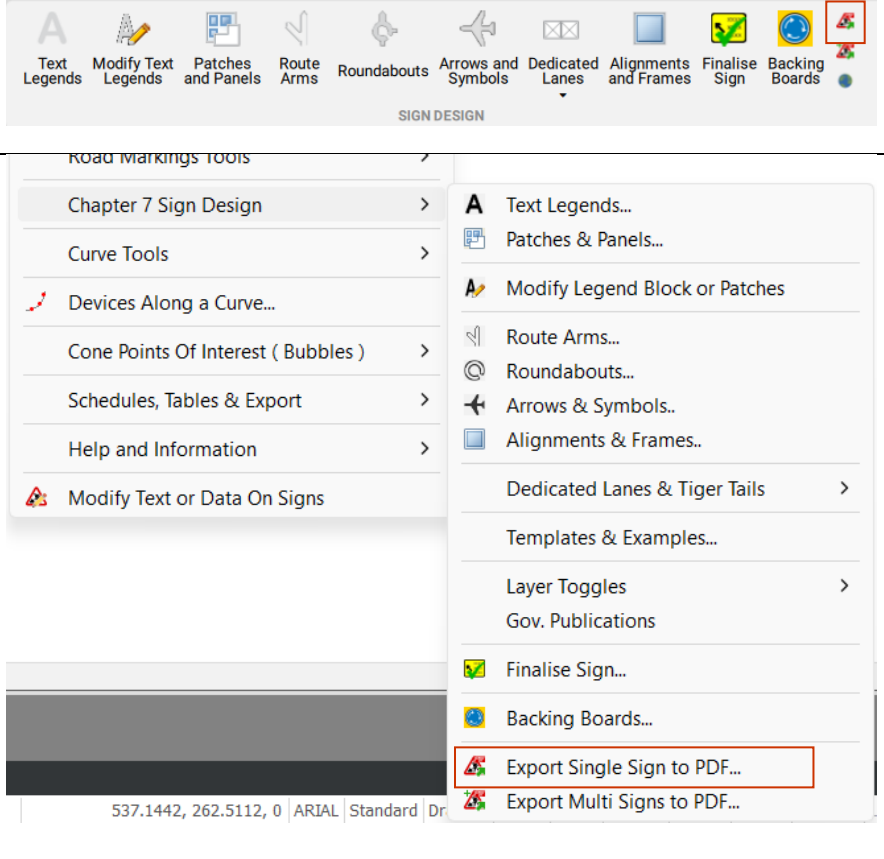
A typical response will be: "C:\\Users\\peter\\AppData\\Roaming"
So in this case the full path to the location will be
"C:\\Users\\peter\\AppData\\Roaming\\CONE11UK\\USER"

Sign Ref/Label: Adds a reference to the sign attribute data

Sign Description: Adds a description to the sign attribute data

Both the above will be included in any Sign Schedule that you may create

Export Single Sign to PDF

Command: CUKSIGN2PDF RIBBON: CONE12 Roads_SIGN DESIGN CONE12UKBC Pull Down Menu	
TOOLBAR Cone12_UK_Sign_Design_tools	

NOTE: THIS TOOL REQUIRES BRICSCAD IT IS NOT SUPPORTED IN AUTOCAD

NO DIALOG BOX:

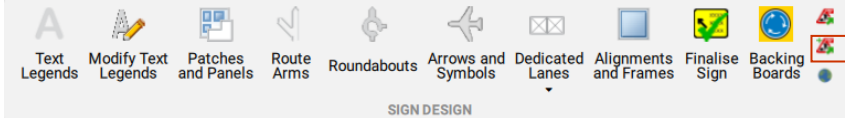
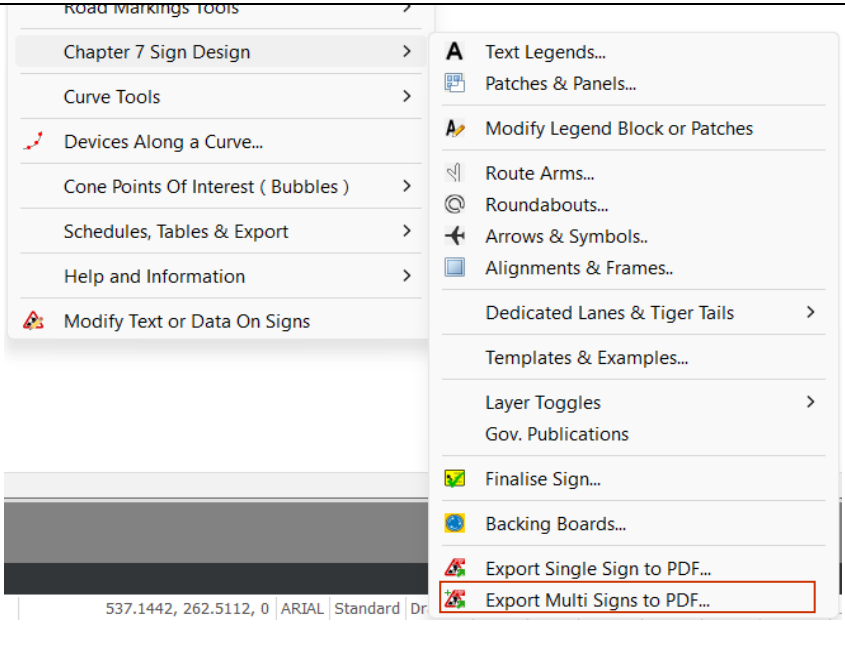
The Convert Sign to PDF tool will ask you to select a single sign on the drawing, this can be any sign inserted by CONE12 either from the standard libraries of signs or one you have designed yourself

It will then display a file save dialog and ask you to enter a filename for the PDF file to be saved.

The program will then create the PDF file and scale the file to be actual size.

This PDF file can then be used to import into sign plotter programs or large format printers that you may have to create the sign itself

Export Multiple Signs to PDF

Command: CUKMULTISIGN2PDF	
RIBBON: CONE12 Roads_SIGN DESIGN CONE12UKBC Pull Down Menu	
TOOLBAR Cone12_UK_Sign_Design_tools	

NOTE: THIS TOOL REQUIRES BRICSCAD IT IS NOT SUPPORTED IN AUTOCAD

Instructions

This tool will export Multiple CONE Version 11 type Signs to PDF to the Output folder specified

1. Pick the Select/Reselect Button and select signs to export
2. Choose the PDF Filename Method
3. Amend the PDF File names as desired (Manually Assign Each Line Method only)
3. Note: Existing PDF file with a matching name will be overwritten
4. If the background colour is not required, Select the [Do NOT export Sign Background] checkbox
5. Select the OK button to proceed

PDF Output folder

C:\Users\peter\Documents\

...

☐ Do NOT export Sign Background

Selected Signs List Data

QTY	BLOCK NAME	REF/LABEL	COLOUR	DESCRIPTION	SIZE	PDF

PDF File Name Method

☒ By Block Name

☐ Auto Generate

☐ Manually Assign

Prefix/Number/Suffix

Prefix

01

Suffix

PDF File Name (Manually Assign)

Delete Current Row

Look at Current Sign...

Initial Select or Reselect Signs...

OK

Cancel

This tool will convert multiple signs to PDF including any sign inserted by CONE12 either from the standard libraries of signs or one you have designed yourself.

These PDF files can then be used to import into sign plotter programs or large format printers that you may have to create the sign itself

CONE: Export selected signs to PDF

Instructions
 This tool will export Multiple CONE Version 11 type Signs to PDF to the Output folder specified
 1. Pick the Select/Reselect Button and select signs to export
 2. Choose the PDF Filename Method
 3. Amend the PDF File names as desired (Manually Assign Each Line Method only)
 3. Note: Existing PDF file with a matching name will be overwritten
 4. If the background colour is not required, Select the [Do NOT export Sign Background] checkbox
 5. Select the OK button to proceed

PDF Output folder
 C:\Users\peter\Documents\ ...

☐ Do NOT export Sign Background

Selected Signs List Data

QTY	BLOCK NAME	REF/LABEL	COLOUR	DESCRIPTION	SIZE	PDF
1	CPT\$11WIZD_607221209531	13.9	WHITE	Schedule 13-9 : Temporary Information	1958 x 1525 @ 100 X-Hgt	CPT\$11WIZD_6072212095313
1	CPT-13-9_6072212120443	13.9	YELLOW	Schedule 13-9 : Temporary Information	1847 x 1313 @ 100 X-hgt	CPT-13-9_6072212120443

PDF File Name Method
☒ By Block Name
☐ Auto Generate
☐ Manually Assign

Prefix/Number/Suffix
 Prefix

Select or Reselect Signs

Select this button and select signs to export

The selected sign names will then displayed in the data list

PDF Output Folder

Pick the 3 little dots button to change where the pdf files will be exported to

Do NOT Export Sign Background

Check this box if you want to export without the colour background

PDF File Name Method

By Block Name

Select this option to use the same name as the block name for the PDF

Auto Generate

Selecting this option will autogenerate pdf files names based on any Prefix, Suffix and numerical sequence you specify

Manually Assign

If this option is selected then you need to pick each line row in turn from the Sign Data list and enter a name for that line in the PDF File Name (Manually Assign) edit box

Delete Current Row

Removes the currently selected line from the Sign Data list
 The program will then create the PDF file and scale the file to be actual size.

Select the OK button to proceed