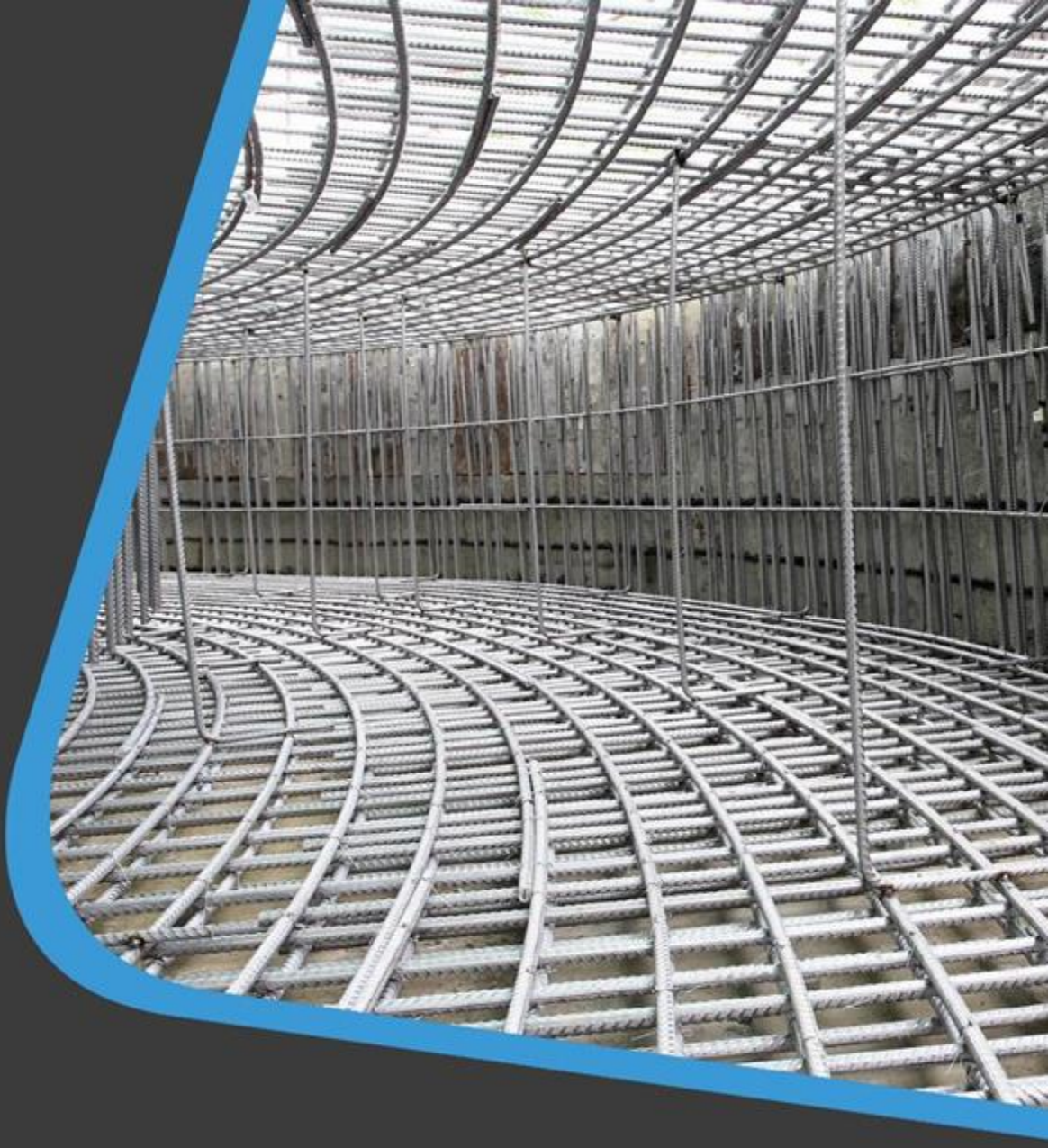

# RebarCAD
## User Guide

CADS
GLOBAL CONSTRUCTION
SOFTWARE AND SERVICES

AUTODESK
Authorised Developer

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# RebarCAD

## VERSION 2026.0

## USER GUIDE

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# RebarCAD

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# 1 Introduction

**Chapter Objectives**

This chapter provides an overview of RebarCAD 2026.0 for AutoCAD 2026 & Architectural Desktop 2026.

## 1.1 Overview

RebarCAD is a program designed to make detailing and listing of reinforcement within the AutoCAD environment accurate and cost effective.

This version of the program has been designed specifically to run under AutoCAD 2026 & Architectural Desktop 2026 for Windows 10 & 11 and makes full use of the many features it offers. Some of the key features that RebarCAD provides include the following:

- Support of standard and non-standard shape codes in accordance with IS 2502;
- Support for detailing in metric and imperial units.
- Extensive special shape code support;
- Extensive bar range types including tapered, staggered and alternate, with corresponding bar run types;
- Extensive bar editing facilities, including bar stretching (with automatic lapping if bar exceeds stock length) and editing via dialog boxes. Double clicking on bar invokes bar property dialog;
- Group Layering Option allowing user-definable layers for all RebarCAD items along with the facility to place rebar on specific layer groups as they are detailed;
- Rebar library for storing standard reinforcement details which can be imported into drawings with automatic bar renumbering as required. Program uses AutoCAD's MDI feature and Design centre extensively for RC entities, i.e Drag and Drop, Copy and Paste etc work across drawings and from Design Centre;
- Label and bar mark format options to allow bar labels to be modified to suit user requirements. Masking of Label is possible.
- Active schedule displayed via a dialog is available at all times;
- Schedule outputs can be customised to individual requirements;
- Full schedule and Bent schedule on Drawing options with special shape code support.
- Schedule data can be output in data form to integrate with rebar fabricator production software applications;
- Bar weight printout facility;

- Partial Take-Off facility.

Commands can be selected from the RebarCAD pop-down menu, toolbar or entered at the AutoCAD command line.

Although RebarCAD can run stand-alone, it has been designed to integrate fully with other CADS Detailing Applications such as CADS Scale & CADS Viewport Manager to provide a complete detailing environment within AutoCAD.

This manual is intended to guide you through the program's features and show where you would use them.

Our CADS UK Technical Support Department staff will be pleased to help you or listen to your suggestions.


| | |
|---|---|
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## 1.2 Installation

For installation procedures, please refer to the “Installer – Getting Started Guide” available on the Online Help page of the website.


**Figure 1.1 Installer**

# 2 Bar Organisation

**Chapter Objectives**

This chapter explains bar organisation in RebarCAD.

When detailing reinforced concrete using RebarCAD there are two main points to consider as you develop the drawing:

1. Using the correct commands to indicate the required rebar arrangement on the drawing.
2. Controlling the input of data to the schedule.

## 2.1 Drawing Bars

The drawing of bar bends is obviously an important part of RebarCAD and this is covered in greater detail in the tutorial examples in Appendixes A and B. This section will give a general idea of the intended use of the most commonly used commands.

There are 2 basic commands within the RebarCAD pop-down menu for drawing bars: DRAW BAR and DRAW RANGE.

### 2.1.1 Draw Bar

The DRAW BAR commands allow you to draw a single view of a bar. For example, consider the section and elevation of a retaining wall shown in Figure 2.1. To draw the shape code 132 in the top of the wall section, you would use a DRAW BAR command as you are only drawing a single view of the bar.

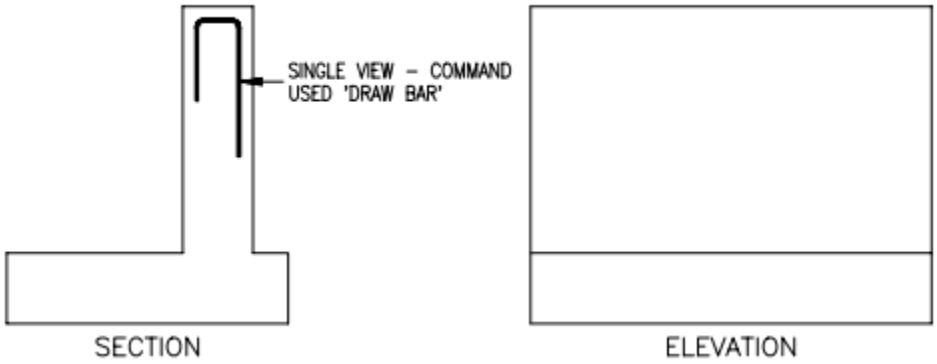



**Figure 2.1 Draw Bar Command**

### 2.1.2 Draw Range

The DRAW RANGE commands allow you to draw a BAR RANGE or a BAR RUN as shown in Figure 2.2.

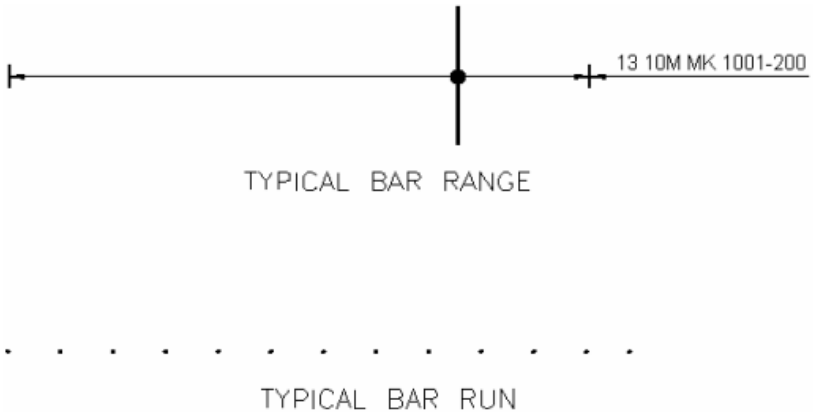



**Figure 2.2 Bar Range and Bar Run Drawing**

For example, consider again the section and elevation of a retaining wall shown in Figure 2.3. If you wished to show the shape code 132 already detailed on the section again on the elevation, you would use a DRAW RANGE command. This would allow you to draw the required view of the bar (known in RebarCAD as an indicator bar) and to specify the start and end of the range line to indicate where the bar occurs.

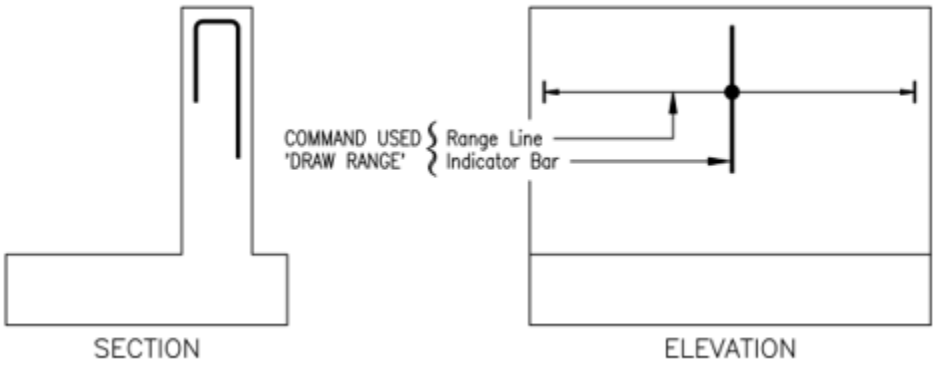



**Figure 2.3 Draw Range Command**

## 2.2 The Bar Set

Each view of a drawn bar forms part of a bar set. A bar set would normally consist of a number of views of the bar to show its location in the structure and a label giving No. off, Grade, Size etc. Each bar set also has a corresponding line in the schedule. For example, take the shape code 132 in the retaining wall in Figure 2.4.

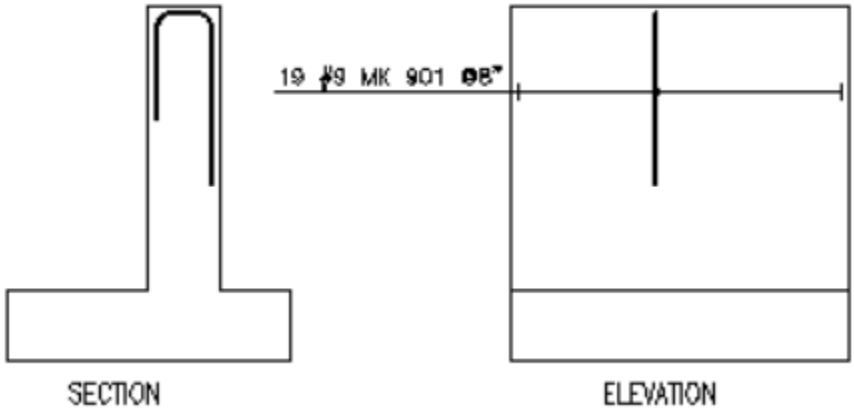



**Figure 2.4 Bar Set**

The shape code 132 is drawn on the section. It is also drawn on the elevation in the form of a range and a bar label is shown. These 3 'views' form the bar set, which also has a corresponding line in the schedule.

NOTE: Only one Bar Label is allowed per Bar Set.

## 2.3 Marks, Views & Sets

Both the 'DRAW BAR' and 'DRAW RANGE' commands are used in conjunction with either of the following sub commands: -

a) NEW MARK

b) Add View

c) NEW SET

These 3 sub commands control the input of data to the schedule.

As a drawing is developed, it is quite common to show the same bar in different views on the drawing. If each time one of these views were drawn, additional bars were added to the schedule, obviously there would be too many bars in the schedule on completion of the drawing. Therefore, commands are required to draw bars in different bar views and 'ADD NEW LINE TO THE SCHEDULE' or 'UPDATE EXISTING LINE'. This is achieved by the correct use of the NEW MARK, Add View and NEW SET options.

### 2.3.1 New Mark

This instructs RebarCAD that the bar view to be drawn is the first of a NEW BAR
SET and allocates the set a New Bar Mark. This will also add a new line to the schedule for this bar set.

### 2.3.2 Add View

This instructs RebarCAD that the bar view to be drawn is another view of an existing BAR SET already on the drawing. This will not add a new line to the schedule but may update the line already present in the schedule for this bar set.

### 2.3.3 New Set

This instructs RebarCAD that the bar view to be drawn is the first of a NEW BAR SET but uses a Bar Mark already in use. (i.e. 2 identical sets of bars with the same Bar Mark). This will also add a new line to the schedule for this bar set.

NOTE: A number of lines in the schedule with the same Bar Mark can be combined into 1 line showing the total number of bars if required.

## 2.4 Bar Views

Most shape codes have a minimum of 4 bar views available for drawing. These are typically SIDE, LEFT, RIGHT & PLAN. The shape code 132 shown in Figure 2.5 is a good example to indicate the views produced by side, left, right & plan options (see also Appendixes A and B).

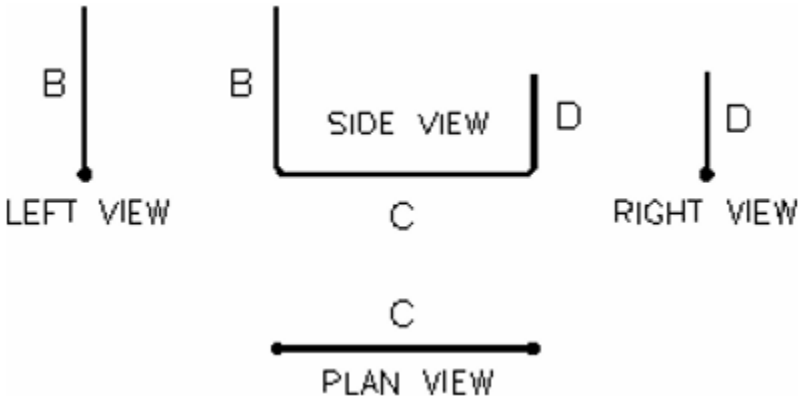



**Figure 2.5 Shape code 132**

### 2.4.1 Side View

The SIDE view of a shape code 132 draws the full shape code. The start point (or insertion point) is the intersection of leg B & C and is indicated by a white dot on the bar slide. The bar can be drawn at any angle or orientation required.

### 2.4.2 Left View

The LEFT view of a shape code 132 will ALWAYS draw LEG B. The start point (or insertion point) is the end indicating leg C as a dot.

### 2.4.3 Right View

The RIGHT view of a shape code 132 will ALWAYS draw LEG D. The start point (or insertion point) is the end indicating leg C as a dot.

### 2.4.4 Plan View

The PLAN view of a shape code 132 will ALWAYS draw LEG C. The start point (or insertion point) is the end indicating leg B as a dot.

## 2.5 Bar Alignments

Bars can be drawn by defining either the OUTER FACE, the INNER FACE or the CENTRE LINE of the bar (see also Appendix A).

### 2.5.1 Outer Alignment

If the bar drawing alignment is set to OUTER, then the dimensions are defined whilst drawing to the outer face of the bar is to be defined.

### 2.5.2 Inner Alignment

If the bar drawing alignment is set to INNER, then the dimensions are defined whilst drawing to the inner face of the bar is to be defined.

### 2.5.3 Centre Alignment

If the bar drawing alignment is set to CENTRE, then the dimensions are defined whilst drawing to the centre line of the bar is to be defined.

NOTE - No matter what alignment is used to generate a bar, the bar dimensions shown in the schedule will be ‘out to out’ except A or G on standard 180-deg and 135-deg hooks, e.g. the inner face of a shape code T1 may be defined on the drawing but its overall dimensions will be shown in the schedule.

## 2.6 Bar Styles

Bars can be drawn in two styles to cater for detailing at different scales etc. (see also Appendix A1).

### 2.6.1 Centre Style

This will draw the centre line only of the bar on a layer in a colour specified by the user in the configuration.

### 2.6.2 Profile Style

This will draw the full profile of the bar on a layer in a colour specified by the user in the configuration.

NOTE - A drawing can have a combination of bar styles and bars can be changed from one style to another using the RebarCAD CHANGE BAR STYLE command.

## 2.7 Bar Manipulation

### 2.7.1 Erase

If you select an RC entity when using AutoCAD's erase command, you will be presented with this dialog.

Selecting Erase Bar View will erase only the drawing details that you have selected. The bar will remain in the schedule.

If you select Erase Bar Set, then not only will your selected entities be removed, but also the bar details in the schedule and all other occurrences of that bar set in the drawing.

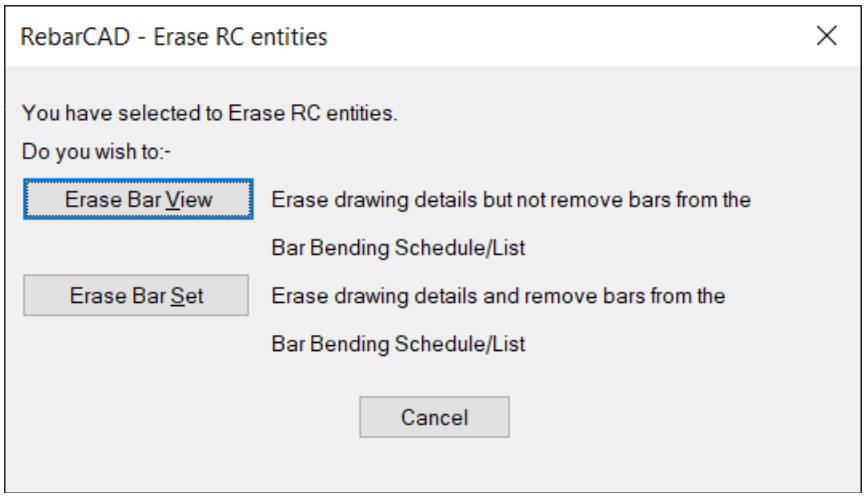



**Figure 2.6 Erase RC entities dialog**

## 2.7.2 Copy

If you select an RC entity when using AutoCAD's copy command, you will be presented with this dialog.

Selecting Copy Bar View will copy only the drawing details that you have selected. No bars will be added to the schedule.

If you select Copy Bar Set, then a new line will be added to the schedule.

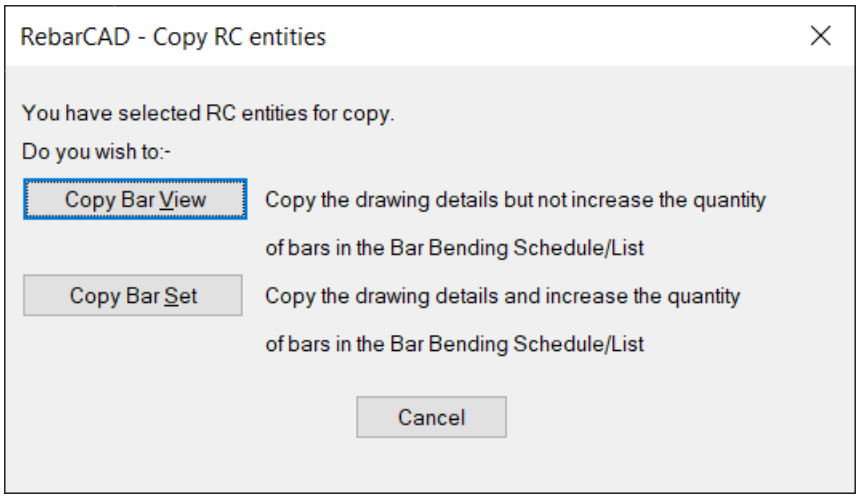



**Figure 2.7 Copy RC entities dialog**

## 2.7.3 Mirror

If you select an RC entity when using AutoCAD's mirror command, you will be presented with this dialog. Selecting Mirror Bar View will mirror only the drawing details that you have selected. No bars will be added to the schedule.

If you select Mirror Bar Set, then a new line will be added to the schedule.

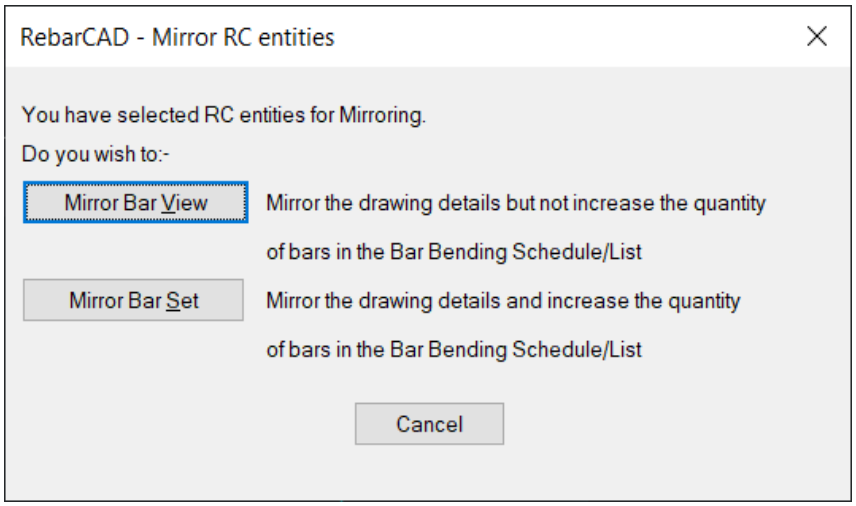



**Figure 2.8 Mirror RC entities dialog**

## 2.7.4 Array

If you select an RC entity when using AutoCAD's array command, you will be presented with this dialog. Selecting Copy Bar View will array only the drawing details that you have selected. No bars will be added to the schedule.

If you select Copy Bar Set, then a new line will be added to the schedule.

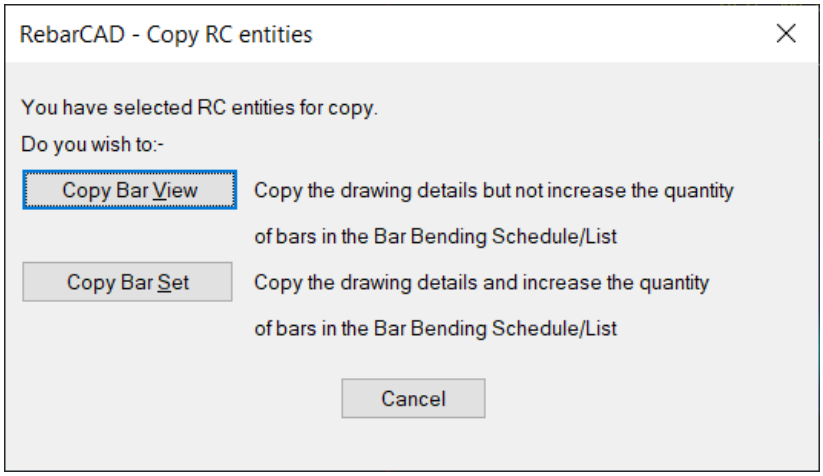



**Figure 2.9 Array RC entities dialog**

# 3 Bar Drawing

**Chapter Objectives**

This chapter describes the tools for bar drawing which are to be found in the RebarCAD pull-down menu in the DRAW BAR and the DRAW RANGE submenu bars.

## 3.1 Bar Drawing Dialog

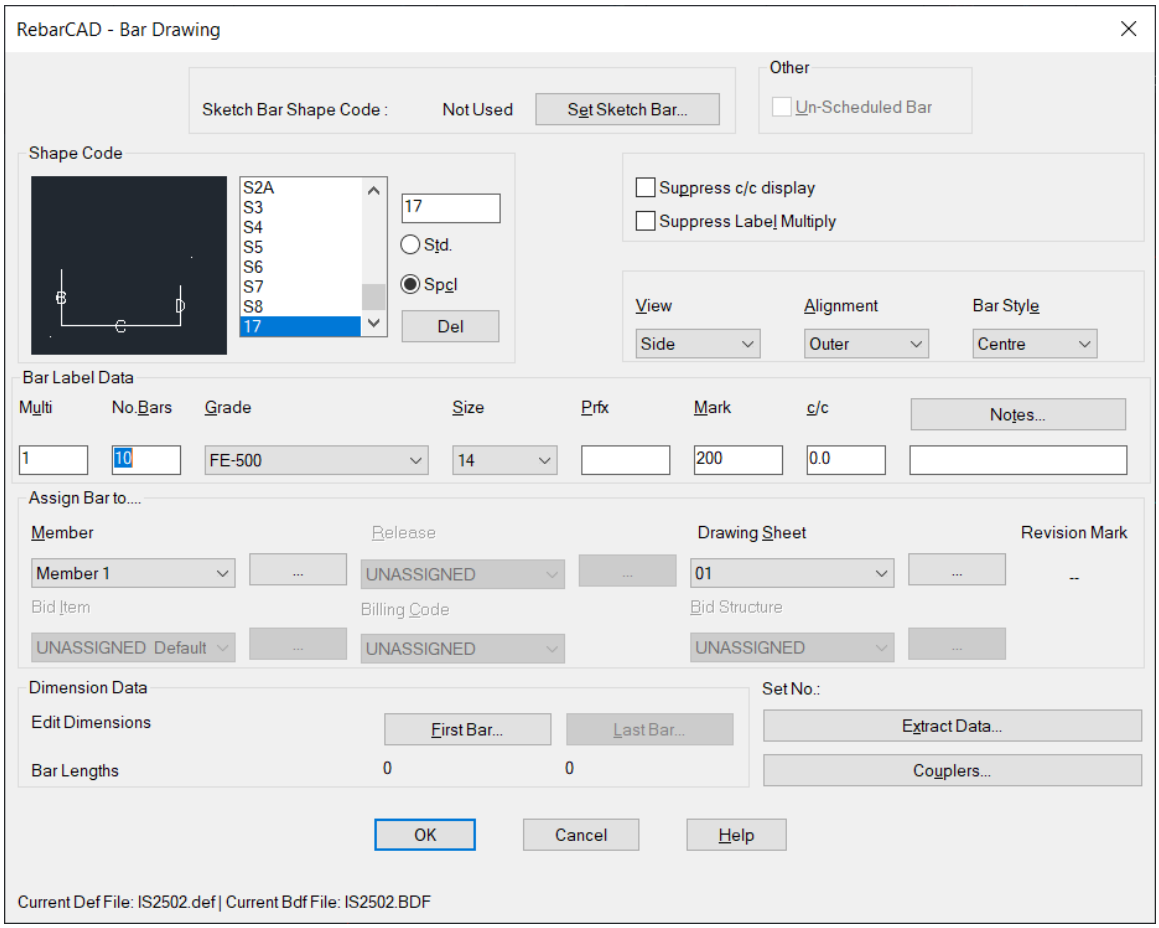



**Figure 4.1 The Bar Drawing Dialog**

The Bar Drawing dialog is the main tool for the selection and input of bending dimensions /data within RebarCAD. There are 3 main ways of inputting bending dimensions /data: -

1. Drawing the required shape code on the drawing.
2. Extracting some or all of the bending dimensions /data from another bar.
3. Inputting all or some of the bending dimensions /data within the Bar Drawing dialog.

A combination of the 3 options may also be used. The options available within the Bar Drawing dialog are as follows:

### 3.1.1 Shape Code

The shape code currently selected is displayed in three ways, a slide showing the shape code, a scrolling list beside it giving the shape code reference and an input field beside it. To select another shape code, either activate the scrolling list and pick the required shape code reference or enter the required shape code reference in the input field and pick the Std button below. If a shape code with that reference exists, it will be selected. If no shape code with that reference exists, you will be asked if you wish to create a shape code with that reference using the Special shape code option. The slide will update to show the shape code selected. The order in which the available shape codes appear in the scrolling list can be altered. If you wish to alter the shape code order, please contact CADS Technical Support Department.

### 3.1.2 Un-scheduled Bar

If activated by picking the box to display a tick in it, the bar drawn will not be added to the schedule. New views of this bar can be drawn, including range views, but these will also not be added to the schedule. If when drawing an Add View or NEW SET of an existing un-scheduled bar the Un-scheduled Bar option is activated, then the drawn bar is created as a un-scheduled New Bar Set with no effect on the existing bar set.

### 3.1.3 View

This specifies the bar view required, there are typically 4 options: -

1. Side
2. Plan
3. Left
4. Right

The Bar View is selected via the pop-up list. Plan, Left and Right views will display a slide indicating the bar leg which this view draws. For more information on Bar Views, see Chapter 2 and Appendix A1. Once you have exited the Bar Drawing dialog, there is still the option to change the Bar View from the side menu before you start to draw the bar.

### 3.1.4 Alignment

This specifies the bar Alignment required, there are 3 options: -

1. Outer - outer face of the bar is to be defined.
2. Centre - centre line of the bar is to be defined.
3. Inner - inner face of the bar is to be specified.

The Bar Alignment is selected via the pop-up list. For more information on Bar Alignments, see Chapter 2 and Appendix A1. Once you exit the Bar Drawing

dialog, there is still an option to change the Bar Alignment from the side menu before you start to draw the bar.

### 3.1.5 Bar Style

This controls the style in which RebarCAD will draw the bar, there are 2 options: -

1. Centre - The centre line of the bar will be drawn.
2. Profile - The full bar profile will be drawn.

If a bar run is being drawn, then 'centre' will draw the run as solid dots. If it is set to 'profile', then the dots will be drawn as hollow circles. For more information on Bar Styles, see Chapter 2 and Appendix A1.

### 3.1.6 Bar Label Data

This consists of 8 fields which, amongst other things, assist in calculating the number of bars required and pass data to the schedule. The fields are as follows: -

**Multi.**

This is a label multiplier.

If a value of 1 is input, then the label will show, for example, 10 601 giving a No. of bars of 10 in the schedule.

If a value of 3 is entered in the Multi. field, the label will show 3x10 601, giving a No. of bars of 30 in the schedule. (See also 'Suppress Label Multiply' later in this section).

The label multiplier also allows invisible multipliers in the bar label. It's objective is to multiply the no. of bars in the bar label for scheduling purposes. This is achieved by entering multipliers in the form 1*2, the outcome of applying multipliers in this format is shown in Figure 3.2 below.

| Multi Input | Bar Drawing dialog No. Bars | No. bars in bar label with suppress label multi NO | No. bars in bar label with suppress label multi Yes | No. bars in the Schedule |
|---|---|---|---|---|
| **1** | 10 | 10 601 | 10 601 | 10 |
| **1*2** | 10 | 10 601 | 10 601 | 20 |
| **2** | 10 | 2x10 601 | 20 601 | 20 |
| **2*2** | 10 | 2x10 601 | 20 601 | 40 |

**Figure 3.2 Label Multiplier Affects**

**No. Bars**

The number of bars required can be input in this field. If left at 0, these will be calculated when a range view is drawn or input at a later date using dialog edit. If the number of bars has not yet been determined, the label will be shown in the form? 601.

**Grade**

This specifies the grade of reinforcement for the bar. The required grade is selected from the pop-down list. (See also Appendix D - Support Files).

**Size**

The required bar size is selected from the options available in the pop-down list. (See also Chapter 8 - Enquiry).

**Prfx**

This input can be used to add an alphanumeric prefix to the bar mark. This will be applied to subsequent bar marks.

If, for instance, bar mark 03 was offered as default, entering AA in the Prfx. field would give a bar mark of AA03. The next new bar mark offered would be mark AA04 with AA entered automatically in the Prfx. field.

Changing the Prfx. option would apply the new prfx. to the current and subsequent bar marks.

**Mark**

The bar mark offered as default is the next highest available. If bar marking is configured to prefix with bar size, the next highest available is offered for the current bar size setting. Other bar marks can be entered. If an entered bar mark is already in use, a warning is given and the previously entered mark is restored. (See also Chapter 8 – Enquiry).

NOTE:

Although RebarCAD allows bar marks to consist of up to 30 characters, certain output file formats only support up to 6 character bar marks.

**c/c**

This is the bar centres input used in range views to calculate the number of bars required. The bar centres, if left at 0, are asked for when doing a range view. (See also 'Suppress c/c display' later in this section).

**Notes**

Notes can be added to the label by picking on the Notes field and typing in the required note or by picking on the Notes Button and selecting a note from the list. (This list can be added to by the user. See Chapter 8 - Label Configuration).

### 3.1.7 Set Release Code

Picking the Set Release Code button accesses the Release Code Selection dialog. To allocate the bar to a release code, pick the required release code from the list and exit the dialog using the OK button. Whilst inside the release code dialog, release codes can be created, edited, made current etc. (See also Chapter 5 – Labelling - Set Release Code).

### 3.1.8 Extract Data

Accesses the Extract Bar Data dialog where various bar data can be extracted from another bar. The Extract Bar Data dialog can be accessed again, if required, to extract other bar data from a different bar.

### 3.1.9 Dimension Data

The First and Last bar buttons allow access to the bar dimension dialog where bar dimensions may be entered prior to drawing the bar view. The Last bar option is only available when drawing tapered ranges to allow dimension data for the first and last bar to be entered.

### 3.1.10 Set Sketch Bar

This accesses the Sketch Bar Selection dialog where a sketch bar view can be activated. If activated, the Bar Drawing Dialog Sketch Shape code prompt is changed from Not Used to display the shape code of the sketch bar view. This option allows the bar view drawn to be of a different shape code than that which is specified in the bar drawing dialog and schedule for the bar set.

### 3.1.11 Suppress c/c Display

If activated by picking the box to display an ‘X’, a label previously displayed 10 601-8” will then display 10 601 and vice versa, i.e. the label c/c are removed or reinstated to the label.

### 3.1.12 Suppress Label Multiply

If activated by picking the box to display an 'X', a label previously displayed
3x10 601 will then display 30 601 and vice versa. (See also 3.1.6 Multi.)

### 3.1.13 Current Release Code

Displays the Release Code to which this bar set is to be allocated.

### 3.1.14 Set No.

This is the number used by RebarCAD to index sets in the schedule. As this number is unique to individual sets, it can be used to manipulate the data. It cannot be altered by the user.

### 3.1.15 Couplers

This allows the attachment of couplers to the bar being drawn. For more information on coupler attachment, see the chapter entitled “Couplers”.

## 3.2 Draw Bar Command

The DRAW BAR commands allow the user to draw a single view of a bar. Off the DRAW BAR menu bar, the following options are available:

### 3.2.1 New Mark

Menu Option Draw Bar -> New Mark

Command Line cads_rc_bars, press enter, M, press enter

Tool Bar 

Instructs RebarCAD that the bar view to be drawn is the first of a NEW BAR SET and allocates the set a New Bar Mark. This will also add a new line in the schedule for this BAR SET.

### 3.2.2 Add View

Menu Option Draw Bar -> New View

Command Line cads_rc_bars, press enter, V, press enter

Tool Bar 

Instructs RebarCAD that the bar view to be drawn is another view of a picked BAR SET already on the drawing. This will not add a new line in the schedule but may update the line already present in the schedule for this BAR SET.

## 3.2.3 New Set

Menu Option Draw Bar -> New Set

Command Line cads_rc_bars, press enter, S, press enter

Tool Bar 

Instructs RebarCAD that the bar view to be drawn is the first of a NEW BAR SET but uses a Bar Mark already in use. (i.e. 2 sets of bars with the same Bar Mark) This will also add a new line in the schedule for this BAR SET.

Note: A number of lines in the schedule with the same Bar Mark can be combined into 1 line showing the total number of bars if required.

# 3.3 Range Drawing

## 3.3.1 Range Options

RebarCAD provides a number of range types for use on different structure types. The range types available are as shown in Figure 3.3.

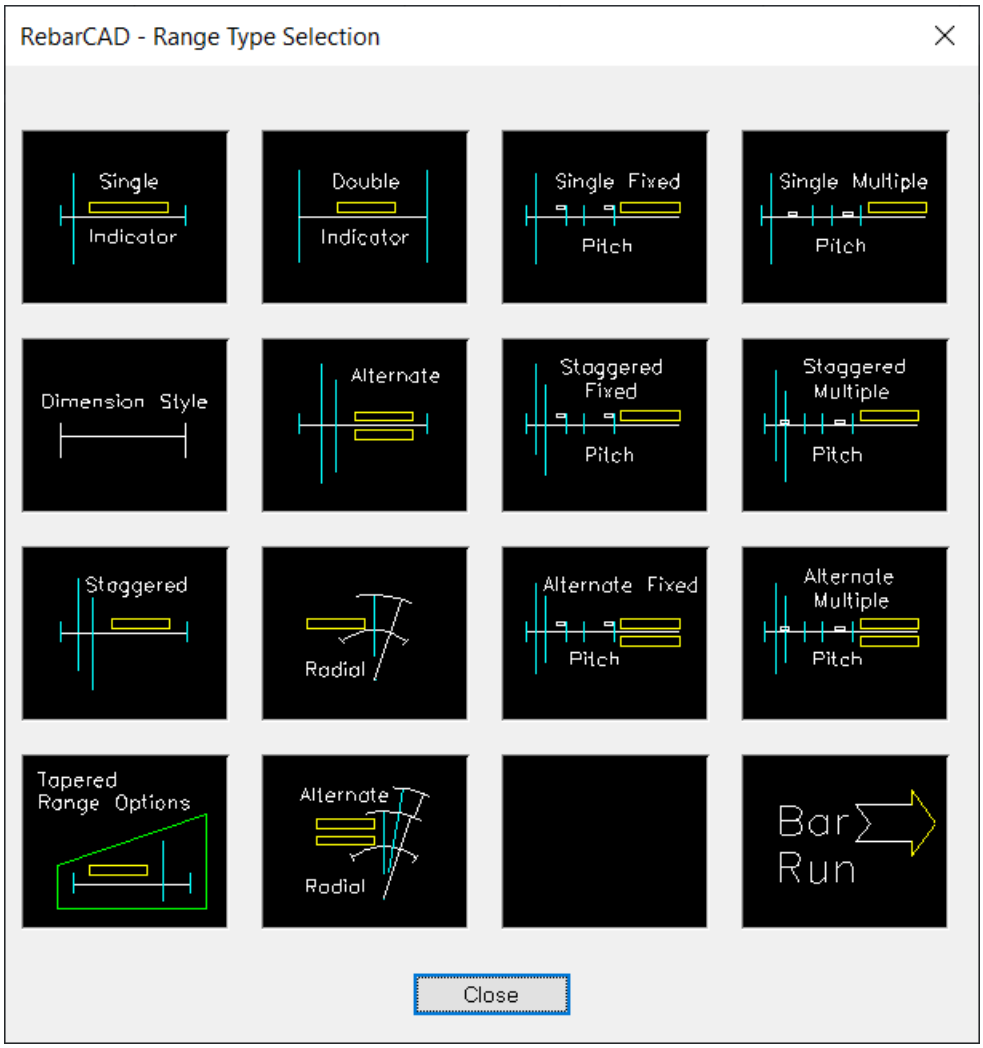
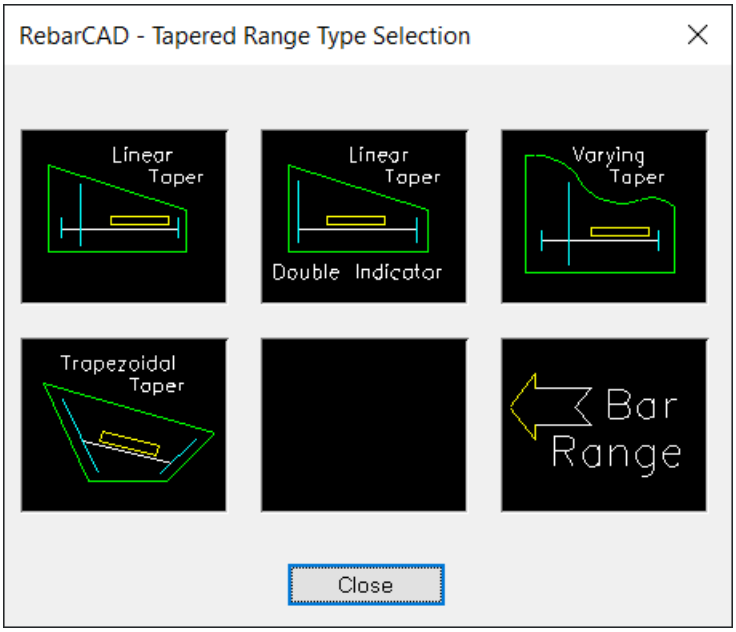



**Figure 3.3**



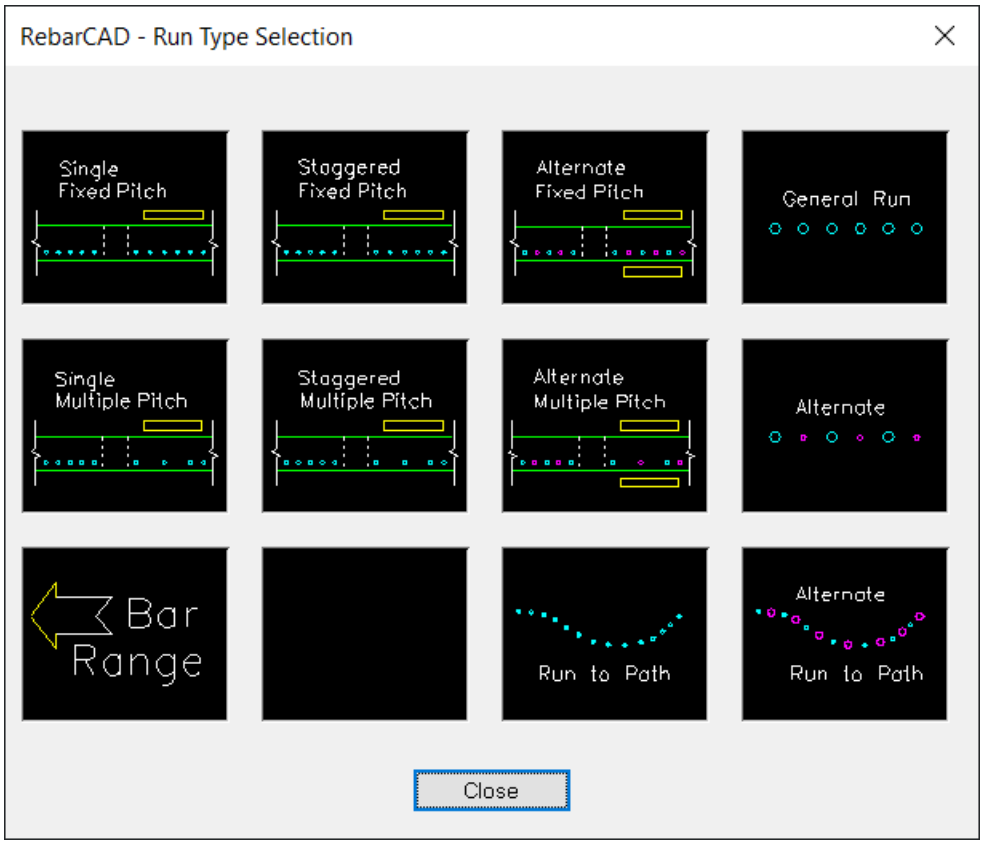




**Figure 3.4 Draw Range Dialogs**

## 3.3.2 Standard Range Types

**Single Indicator**

This range draws a single bar view within one range group. The bar c/c can be entered to calculate the number of bars required or a number of bars can be specified and the c/c will be calculated to suit by RebarCAD.

**Double Indicator**

This range is similar to the Single indicator but a view of the bar is drawn at each end of the range group. The most common use of this range type is when indicating beam stirrups on elevations or plans.

**Dimension Style**

This range is similar to the Single indicator but no view of the bar is drawn. Only a range line is drawn, indicating the extents of the range group. The most common use of this range type is when indicating beam stirrups on elevations or plans where, due to congestion, the range is drawn outside the beam outline.

**Staggered**

This range is similar to the Single indicator but two views of the bar are drawn in a staggered fashion within one range group. The bar label can contain a configurable note to indicate that the bars are placed staggered within the range group. This range type can also be used for alternate bar reversed ranges but the bar label note will have to amended manually.

**Alternate**

This range draws two bars that have different bar marks within one range group. The label for each bar mark can contain configurable notes to indicate that they are alternately placed within the range group.

**Radial**

This range type allows radial ranges to be specified, for instance when detailing circular tank slab bottoms. The bars can be calculated at the inner or outer ends of the bar or along the range line. One bar view can be drawn within one range group and the bar c/c can be specified or a total number of bars entered.

**Alternate Radial**

This range type is similar to the Radial type described earlier but allows alternate bars to be detailed in the range.

**Single Fixed Pitch and Single Multiple Pitch**

These range types are similar to the Single Indicator but allow a number of range groups to be drawn with the number of bars in each group indicated and the label displaying the total number of bars. The Fixed Pitch option assumes that the bar c/c are the same in each range group, whereas the Multiple Pitch option allows the bar c/c to be different in each range group.

**Staggered Fixed Pitch and Staggered Multiple Pitch**

These range types are similar to the Staggered range but allow a number of range groups to be drawn with the number of bars in each group indicated and the label displaying the total number of bars. The Fixed Pitch option assumes that the bar c/c are the same in each range group, whereas the Multiple Pitch option allows the bar c/c to be different in each range group.

**Alternate Fixed Pitch and Alternate Multiple Pitch**

These range types are similar to the Alternate range but they allow a number of range groups to be drawn with the number of bars in each group indicated with the label displaying the total number of bars. The Fixed Pitch option assumes that the bar c/c are the same in each range group, whereas the Multiple Pitch option allows the bar c/c to be different in each range group.

## 3.3.3 Tapered Range Types

**Linear Taper**

This range draws a single bar view within one range group, it then asks for the first and last bars to be drawn or uses the entered data so it can calculate the required tapered dimensions for the bar set. The label produced will give the total number of bars within the range with a configurable suffix relating to the number of bars in the range. The Schedule will display each bar in the range i.e. 601a, 601b, 601c etc. with that bars individual bending data. Tapered ranges can contain bar marks 601a to 601zz giving a maximum of 676 bars in any bar set.

**Linear Taper Double Indicator**

This range is similar to the Single Taper but a view of the bar is drawn at each end of the range group.

**Varying Taper**

This range type draws a single bar view within one range group. It then asks for an entity to be picked to define the boundary of the area to be reinforced with tapering bars. The bars are calculated as if placed at the angle of the indicator bar. The entity picked to define the boundary must be a closed polyline, circle or ellipse. The label produced will give the total number of bars within the range with alphabetical suffix relating to the number of bars in the range. The Schedule will display each bar in the range i.e. 601a, 601b, 601c etc. with that marks individual bending data. Tapered ranges of this type can contain bar marks 601a to 601zz giving a maximum of 676 bars in any bar set.

NOTE: This type of range cannot be edited, you will have to delete the range and redraw it if any of the bar/range data needs amending.

**Trapezoidal Taper**

This range type draws an indicator bar at each end of the range to define the first and last bars in the range. The intermediate bars are calculated as placed in a fan arrangement. The label produced will give the total number of bars within the range with alphabetical suffix relating to the number of bars in the range. The Schedule will display each bar in the range i.e. 01a, 01b, 01c etc. and marks the bar with its individual bending data. Tapered ranges of this type can contain bar marks 01a to 01zz giving a maximum of 676 bars in any bar set.

NOTE: This type of range cannot be edited, you will have to delete the range and redraw it if any of the bar/range data needs amending.

### 3.3.4 Bar Run Range Types

**Run to Path**

Two Run to Path options are available. One details a single bar mark and the other alternate bar marks. The run is defined by picking a pline entity and the bars are calculated from the pline length and placed along the pline.

Each of the above range types has a corresponding Run type which can be used in conjunction with the range.

NOTE: The two run to path ranges cannot be edited, you will have to delete these range types and redraw it if any of the bar/range data needs amending.

## 3.4 Draw Range Commands

The DRAW RANGE commands allow the user to draw a range or run view of a bar. Off the DRAW RANGE menu bar there are the following options:

### 3.4.1 New MARK

Menu Option Draw Range -> New MARK

Command Line cads_rc_range, press enter, M, press enter

Tool Bar 

Instructs RebarCAD that the range to be drawn is the first of a NEW BAR SET and allocates the set a New Bar Mark. This will also add a new line in the Schedule for this BAR SET.

### 3.4.2 Add View

Menu Option Draw Range -> Add View

Command Line cads_rc_range, press enter, V, press enter

Tool Bar 

Instructs RebarCAD that the range to be drawn is another view of a picked BAR SET already on the drawing. This will not add a new line in the Schedule but may update the line already present in the Schedule for this BAR SET.

### 3.4.3 New SET

Menu Option Draw Range -> New SET

Command Line cads_rc_range, press enter, S, press enter

Tool Bar 

Instructs RebarCAD that the range to be drawn is the first of a NEW BAR SET but uses a Bar Mark already in use (i.e. 2 sets of bars with the same Bar Mark). This will also add a new line in the Schedule for this BAR SET. NOTE: A number of lines in the Schedule with the same Bar Mark can be combined into 1 line showing the total number of bars if required.

## 3.5 Utilities to Assist in Bar & Range Drawing

### 3.5.1 CADS Input Application

The CADS Input Application consists of a number of Extra Snaps and a Lap Bar facility to aid in the drawing of bar views and ranges. They are available from the side menu and RebarCAD SNAPS toolbar during bar and range drawing operations, they do not replace AutoCAD's snaps which are still available for use in the normal fashion.

### 3.5.2 Extra Snaps

These commands are additional to the standard AutoCAD object snaps. Although similar to the object snaps, they expand them by allowing a point to be specified relative to an existing object

or point. The Extra Snaps can be particularly useful when placing bars to an outline where no cover lines are present as bars can be placed relative to the outline itself.

**Relative**

Toolbar 

Allows you to specify a point, using a rectangular co-ordinate, relative to a picked point. Typically, you may wish to place a bar with 2” cover from the corner of an outline. Therefore, the bar can be placed RELATIVE to the INTERSECTION at the corner of the outline and given relative co-ordinates, for example, of 2”,2”. When entering the co-ordinate offset do not use the normal @ (relative distance) symbol, as this is implied automatically.

**Polar**

Toolbar 

This is equivalent to Relative except it expects a polar co-ordinate entered at the appropriate prompt in the form of a distance and an angle for the offset.

**Midpoint**

Toolbar 

This allows you to snap to a point midway between two picked points.

**Datum**

Toolbar 

Enables you to set a point which can be used repeatedly for specifying relative points. In effect, it allows a second origin (Datum) to be set on the drawing. The datum point is selected the first time the command is used during an editing session. Each time you wish to define points relative to this datum you must select the Datum option from the side menu. If you subsequently wish to change the datum, select the Datum option from the side menu and enter R for Reset at the prompt.

**Along**

Toolbar 

Enables you to snap to a point at a specified distance along a line or to a point along a line by entering a division factor. For instance, if you specify a division factor of 3, the snap will be at the third point along the line from the nearest end of the line picked.

**Divide**

Enables you to snap to a point along a line by entering a division factor. For instance, if you specify a division factor of 3, the snap will be at the third point along the line from the nearest end of the line picked.

**Intersection**

This snap will locate the projected intersection point of two lines which do not actually intersect. Note that you can also select two segments within the same polyline and obtain their intersection point.

**Inters of Perps**

This snap finds the intersection point of the perpendiculars from two lines. The perpendiculars spring from the points at which the two lines are picked. AutoCAD's OSNAPS can be used to pick particular end, mid or intersection points on the lines for precision. Unfortunately, you cannot use the other Extra Snaps such as Along in this instance, as AutoLisp does not allow re-entrant calls.

## 3.5.3 Lap Bar

Toolbar 

The Lap Bar function can be used to place or calculate bars which lap onto existing bars. The lap length offered as a default is that relating to the smallest diameter of either the bar being drawn or the bar being lapped to. Lap information is defined in the bar types file. Users wishing to modify or add to the default lap data may contact CADS Technical Support Department.

## 3.5.4 Tolerance Bar Leg

Toolbar 

The Tolerance option can be picked prior to defining an individual bar leg dimension during the drawing of the bar view. Picking Tolerance will apply the relevant tolerance to the leg dimension. Tolerance values can be modified to suit project criteria, users wishing to modify the default tolerance data may contact CADS Technical Support Department.

## 3.5.5 Label Aligning Options

Toolbar  Align Horizontal

Toolbar  Align Vertical

Picking one of the above options when prompted to place a bar label will align the bar label either vertically or horizontally with an existing bar label.

# 4 Labelling

**Chapter Objectives**

This chapter describes the Labelling section of RebarCAD, which is primarily concerned with the Labelling/Notation of reinforcing bars and Release Code control.

## 4.1 Labelling

The tools for labelling and release code control are to be found off the RebarCAD pull down menu Labelling menu bar where there are the following options:

### 4.1.1 Label Bar

Menu Option Labelling -> Label Bar

Command Line cads_rc_lbar

Toolbar 

Allows a Bar Label to be placed on the drawing for a bar set not yet labelled. Placement of bar labels is aided by side menu options to align vertically or horizontally with existing labels or to stack labels to form columns.

NOTE: If a bar set is already labelled a message to this effect is given and the command cancelled. Only one bar label is allowed per bar set.

### 4.1.2 New Label

Menu Option Labelling -> New Label

Command Line cads_rc_newlabel

Toolbar 

Allows the creation of a new set of bars (and hence adds new line in the Schedule for this set) in the form of a Bar Label only. On selecting the command, a dialog giving information regarding this

command is activated. Further views of this bar set can be generated using the ‘Add View' commands as required.

### 4.1.3 Masking a Label

**Mask Text**

To create a mask for set of selected labels, use this command.

Menu Option Labelling -> Mask Text Command Line cads_rc_mask

Toolbar 

Allows the creation of a new Mask object behind the label such that the entities behind label are hidden behind the mask object so that plotting is clear for congested bars.

**Mask All**

To create mask for all labels in the drawing, use this command.

Menu Option Labelling -> Mask All

Command Line (command “cads_rc_mask” “A” “All” “ “)

Toolbar 

**Un Mask All**

To Un mask for all labels in the drawing, use this command.

Menu Option Labelling ->Un Mask All

Command Line (command “cads_rc_mask” “D” “All” “ “)

Toolbar 

**Bar Ref. '08'**

Menu Option Labelling -> Bar Ref ‘08’

Command Line cads_rc_barref

Toolbar 

The Bar Reference command is used to position call offs showing the bar mark of the picked bar/bars. They can be used for calling off bar runs etc. as shown in Figure 4.4.


**Figure 4.4 Bar Run with Bar References Added**

You can add bar references to individual bars or several at a time. To add bar refs. to an individual bar, select a bar on the initial prompt and then place the bar ref. as required. To add bar refs. to several bars, press enter on the initial prompt, set the angle and then select the bars to be labelled. Then pick two points to indicate the position and alignment of the bar refs.

These Bar References are linked to the relevant bar set and therefore any change in bar mark automatically updates the bar references. Any Bar Reference can be repositioned using AutoCAD move as required.

The bar references can be selected when prompted to 'Pick a Bar Set' when using the Add View or New Set functions.

## 4.1.4 Tick & Tag

Menu Option Labelling -> Tick and Tag

Command Line cads_rc_autotag

Toolbar 

The Tick & Tag command is used to position call offs showing the bar mark of the picked bars beside an arrow indicating the bar ends. Tick & Tag can be used to indicate the bar ends of bars detailed on top of each other with laps etc. as shown in Figure 4.5.


**Figure 4.5 Tick and Tag**

You can tick & tag all the bars on one face of the structure using the 'crossing' window selection method.

## 4.1.5 Leader 1 (Leader with Arrow)

Menu Option Labelling -> Leader 1

Command Line cads_rc_leader1

Toolbar 

This Leader command is not the AutoCAD leader command, it is a command written within RebarCAD and is only available when RebarCAD is loaded. Its advantages over AutoCAD Leader are as follows:

1. Can be configured to underline text or to start at the end of text.
2. Automatically finishes the leader to a picked text item to ensure consistency across the drawing.
3. Can automatically find the correct label for a picked bar set.
4. Can stack leaders for labels in columns.
5. Configuration for layer, arrow length, arrow width and block name.

## 4.1.6 Leader 2 (Leader with Dot)

Menu Option Labelling -> Leader 2

Command Line cads_rc_leader2

Toolbar 

This Leader command is not the AutoCAD Leader command. It is a command written within RebarCAD and is only available when RebarCAD is loaded. Its advantages over AutoCAD Leader are as follows:

1. Can be configured to underline text or to start at the end of text.
2. Automatically finishes the leader to a picked text item to ensure consistency across the drawing.
3. Can automatically find the correct label for a picked bar set.
4. Can stack leaders for labels in columns.
5. Configuration for layer, dot X & Y scale factors and block name.

## 4.1.7 Leader 3 (Leader with no end block)

Menu Option Labelling -> Leader 3

Command Line cads_rc_leader3

Toolbar Not Applicable

This Leader command is not the AutoCAD Leader command. It is a command written within RebarCAD and is only available when RebarCAD is loaded. Its advantages over AutoCAD Leader are as follows:

1. Can be configured to underline text or to start at the end of text.
2. Automatically finishes the leader to a picked text item to ensure consistency across the drawing.
3. Can automatically find the correct label for a picked bar set.
4. Can stack leaders for labels in columns.
5. Configuration for layer, X & Y scale factors and block name.

## 4.1.8 Tag to Line

Menu Option Labelling -> More -> Tag to Line

Command Line cads_rc_tag2line

Toolbar Not Applicable

This command is similar to Tick & Tag but it can be used to align a number of Tick & Tags to a common base line. Tag to Line can be used for sloping sections as shown in Figure 4.6.

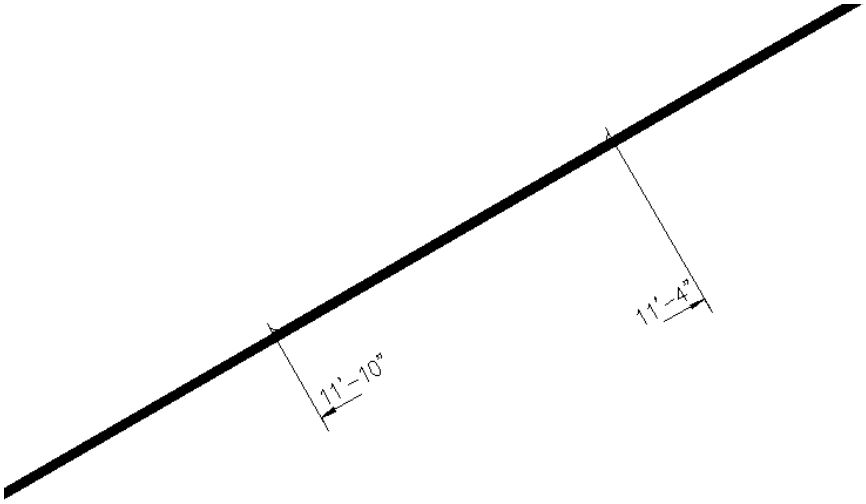


**Figure 4.6 Tag to Line**

## 4.1.9 Next Bar Mark

Menu Option Labelling -> More -> Next Bar Mark

Command Line cads_rc_nbmark

Toolbar 

The Next Bar Mark command will display the next available bar mark for use calculated from the highest bar mark in use for the last bar size detailed. For example, if bar mark 1087 was in use but bar mark 1042 was not in use, the Next Bar Mark command will prompt bar mark 1088, as it assumes 1087 and below are in use. This command does not search for all bar marks not in use and therefore will not prompt bar mark 1042.

## 4.1.10 Tools & Symbols

Menu Option RebarCAD->Tools -> Tools and Symbols

Command Line cads_rc_tools

Toolbar 

This activates a dialog where a number of useful tools to aid general drafting can be picked. The options are as shown in Figure 4.8.

1. Grid Generator
2. Grid Balloons
3. Line Breaks
4. Pipe Ends
5. Section Markers and Section Marker Config.
6. Arrow Tip
7. Level and Elevation symbols
8. Standard Text
9. Standard Hatch Patterns
10. Elevation Symbol

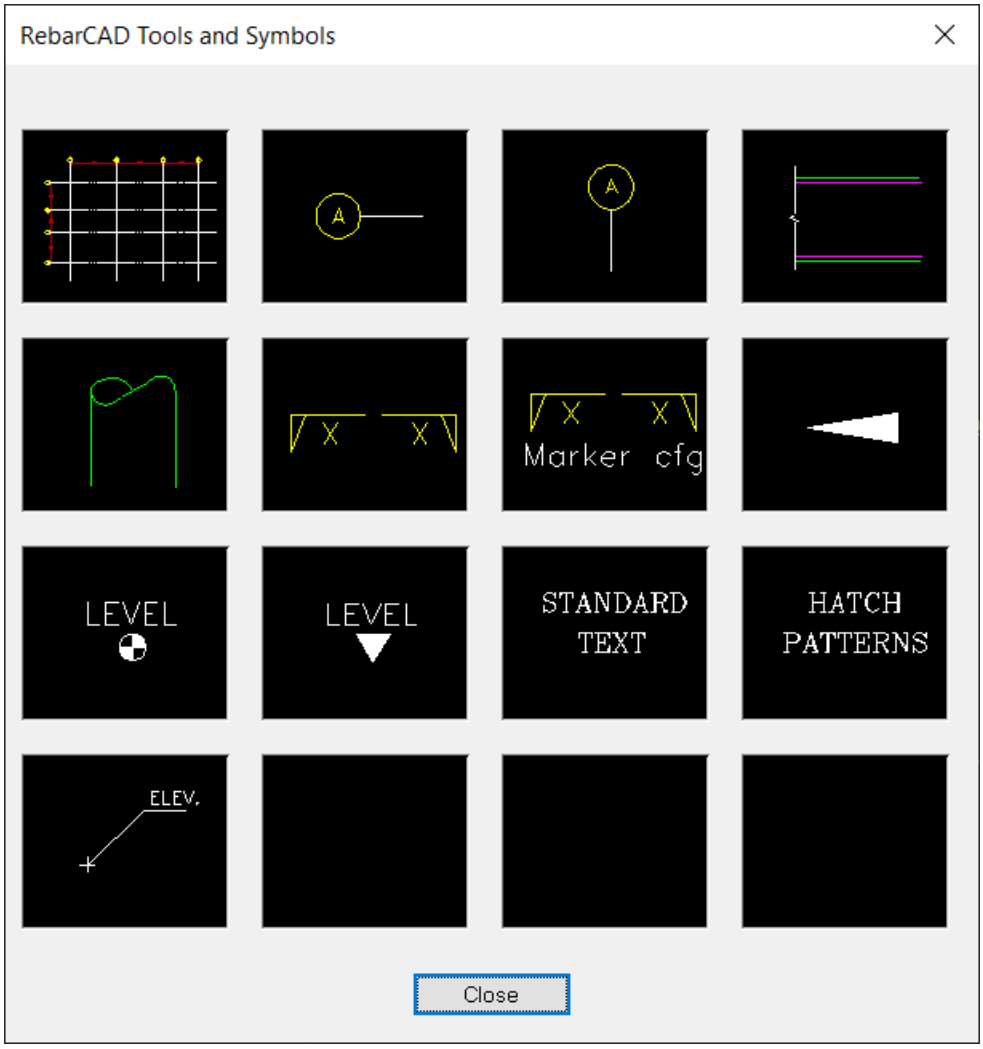



**Figure 4.8 Tools and Symbols Dialog**

# 5 Bar Editing

**Chapter Objectives**

This chapter describes the EDITING section of RebarCAD, which is primarily concerned with the editing of reinforcement.

The tools for EDITING are to be found off the RebarCAD pull down menu EDITING menu bar, where there are the following options:

## 5.1 Stretch Edit

Menu Option Editing -> Stretch Edit

Command Line cads_rc_stretch

Toolbar 

The Stretch Edit command allows bar views to be stretched in a similar fashion to AutoCAD stretch. Any bar view can be stretched, including ranges and runs, with all relevant views being updated automatically. If AutoCAD stretch is used on a bar, it will have no effect (if the entire bar view was in the stretch window, it will be moved as any entity would) but non RebarCAD entities will stretch as normal.

RebarCAD is arranged so that you are asked by default if you would like to allocate new bar marks to any bar sets which are stretched where other sets of the same bar mark exist outside of the stretch.

If Yes is entered, then new bar marks will be allocated to the stretched bar sets.

If No is entered, then all bar sets of that bar mark will be updated to the new stretched dimensions.

There are some limitations to the use of the Stretch Edit command on certain range/run types and these are listed as follows:

### 5.1.1 Radial Range Types

The Stretch Edit command does not support Radial range types. If the included angle of a Radial range needs to be altered, then the existing range has to be deleted and a new range drawn in its place to the new parameters.

### 5.1.2 Varying and Trapezoidal Tapered Ranges

The Stretch Edit command does not support Varying and Trapezoidal Tapered range types. If the area covered by either of these range types alters, then the existing range has to be deleted and a new range drawn in its place to the new parameters.

### 5.1.3 Run To Path and Alternate Run To Path

The Stretch Edit command does not support the Run To Path or Alternate Run To Path options. If the path along which the bar run is placed alters, then the existing run must be deleted and a new run drawn to the new path.

### 5.1.4 Linear Tapered Range Types

Although the Stretch Edit command allows stretching of these range types, it must be noted that any step increment applied to the range will be re-set to zero by the stretch. It is then necessary to re-apply the step increment to the range.

NOTE - If a Linear Tapered range with a step increment applied requires stretch editing and the Schedule has been issued, then it is advisable to delete the whole bar set and replace it with a new bar set. This is because the editing will remove the step and therefore increase the number of lines required for that tapered range in the Schedule. This may cause the tapered range to be repositioned in the Schedule onto a new page.

NOTE - The RebarCAD Stretch Edit command also stretches non RebarCAD entities as if stretched using AutoCAD stretch.

NOTE – If you want to stretch the bar lengths in a single indicator linear tapered range you will have to edit the first and last bar dimensions using the bar label edit command, see Chapter 6.3.

## 5.2 Bar/Label Edit

Menu Option Editing -> Bar Label Edit

Command Line cads_rc_dlg_edit

Toolbar 

Left mouse button double – clicking on a RebarCAD entity will also call this command.

Activates the Edit Bar Label Data dialog where all bar details are displayed. All active fields displayed are available for editing.

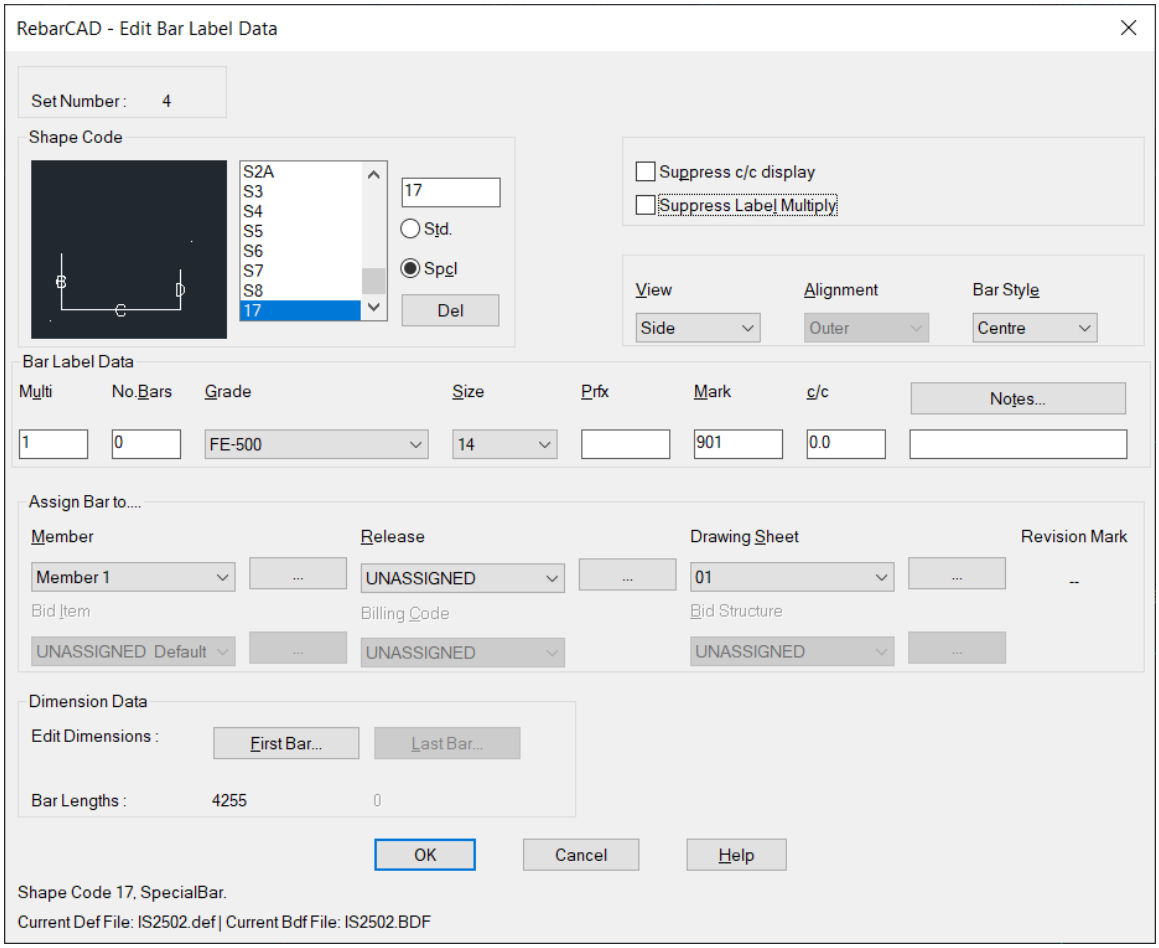



**Figure 5.3:1 Edit Bar Label Data Dialog**

The 'Edit Bar Label' data dialog allows the user to change or add data to an existing bar set. The options available within the dialog are as follows:

### 5.2.1 Shape Code

A slide of the current shape code is displayed, the shape code can be changed by selecting another from the scrolling list or entering the required shape code in the input field. Changing this will cause all views of that bar to be updated. The orientation of existing bar views may be drawn differently from the original, so some use of rotate in AutoCAD may be required.

### 5.2.2 View, Alignment & Bar Style

These options are greyed out and so cannot be changed from within the dialog. They only show the picked bars View, Alignment and Bar style. You can edit these settings for a particular view by using the Change Bar Style and Change Bar View commands described later in this chapter.

### 5.2.3 Bar Label Data

This consists of 8 fields which, amongst other things, assist in calculating the No. of bars required and pass data to the Schedule. The fields are as follows (See also 'Chapter 3 - Bar Drawing').

**Multi.**

This is a label multiplier.

If a value of 1 is input then the label will show for example 10 601, giving a No. of bars of 10 in the Schedule.

If a value of 3 is entered in the Multi. field, the label will show 3x10 601, giving a No. of bars of 30 in the Schedule. (See also 'Suppress Label Multiply' later in this section)

The label multiplier also allows invisible multipliers in the bar label. Its objective is to multiply the no. of bars in the bar label for scheduling purposes. This is achieved by entering multipliers in the form 1*2. The outcome of applying multipliers in this format is shown in Figure 5.3.3:1.

| Multi Input | Bar Drawing dialog No. Bars | No. bars in bar label with suppress label multi NO | No. bars in bar label with suppress label multi Yes | No. bars in the Schedule |
|---|---|---|---|---|
| **1** | 10 | 10 601 | 10 601 | 10 |
| **1*2** | 10 | 10 601 | 10 601 | 20 |
| **2** | 10 | 2x10 601 | 20 601 | 20 |
| **2*2** | 10 | 2x10 601 | 20 601 | 40 |

**Figure 5.3.3:1 Label Multiplier Affects**

(See also the chapter “Bar Drawing”)

**No. Bars**

The number of bars required can be input in this field.

If it is left at 0, this will be calculated when a range view is drawn.

If the number of bars has not yet been determined, the label will be shown in the form? 601.

If the number of bars has already been calculated by specifying the c/c on a range, editing the number of bars will force the c/c value to display the average c/c. (See also “Suppress c/c Display” in this section).

**Grade**

This specifies the grade of reinforcement for the bar, the required grade is selected from the pop-down list. All views of the bar are re-drawn to the new grade. The Schedule is updated and, where necessary, bending data set to minimum values if the change in grade means existing values are too small. (See also Chapter 8 - Enquiry).

**Size**

The required bar size is selected from the options available in the pop-down list. All views of the bar are re-drawn to the new size. The Schedule is updated and, where necessary, bending data is set to minimum values if the size is increased and if existing values are too small for the new size. (See also Chapter 8 - Enquiry).

**Prfx**

This input can be used to add/edit an alphanumeric bar mark prefix. If, for instance, bar mark 603 was to be edited by entering AA in the Prfx. Field, a new bar mark of AA603 would be allocated to the bar.

**Mark**

The bar mark can be altered by picking on the bar mark field and typing in the new bar mark.

If the entered bar mark is not in use, the set is allocated the new mark and the bar label, bar refs., ticks, tags and Schedule are updated accordingly.

If the entered bar mark is in use, a warning is given along with an option to change this set to the entered bar mark.

If NO is entered, the dialog is displayed again and another bar mark can be entered or the cancel button picked to exit with no change.

If YES is entered to the change to at the entered bar mark prompt, a further warning may be given if there is a change in shape code. Continuing will update this set to the entered bar mark. The orientation of existing bar views may be drawn differently from the original, so some use of rotate in AutoCAD may be required. (See also Chapter 8 - Enquiry).

NOTE

Although RebarCAD allows bar marks to consist of up to 30 characters, certain output file formats only support up to 6 character bar marks.

**c/c**

This is the bar centres used in range views to calculate the number of bars required. The bar centres can be altered by picking on the c/c field and typing in the required c/c. If the bar has a range view, the no. of bars will be recalculated to the new c/c's. (See also Suppress c/c display' later in this section).

**Notes**

Notes can be added to the label by picking on the Notes field and typing in the required note or by picking on the Notes Button and selecting a note from the list provided. (This list can be added to by the user - see also Chapter 8 - Enquiry).

By picking on the Notes Button you are also offered four extra notes fields, all with a standard notes option, that appear below the standard notes.

## 5.2.4 Suppress c/c Display

If toggled by picking the box to display an X, a label which previously displayed 12 601-8” will then display 12 601 and vice versa.

If the bar c/c are suppressed, then the no. of bars value will remain constant and the c/c value adjusted to maintain the no. of bars for any alteration to range length via stretch bars.

If the c/c are not suppressed then the c/c will remain constant with the no. of bars altered to suit any change in range length via stretch bars.

## 5.2.5 Suppress Label Multiply

If activated by picking the box to display an X, a label which previously displayed 3x10 601will then display 30 601 and vice versa. (See also 5.3.3 Multi.)

### 5.2.6 First Bar

Picking on the first bar button accesses the 'Dimension Entry' dialog. Here, existing dimensions of the bar can be altered or missing dimensions added. The scaled diagram will be updated to indicate any alterations. Upon leaving the dialog via the OK button and leaving the 'Edit Bar Label' Data dialog via the OK button, the Schedule and all the bar views will be updated to the new dimensions.
If there is more than one set of this bar mark, upon leaving the 'Edit Bar Label' Data dialog an option to create a new bar mark for this set is offered.

If YES is replied, then this set can be given a new bar mark,

If NO is replied, then all sets of this bar mark are updated to the new dimensions entered.

### 5.2.7 Last Bar

This is only available if the set is a tapered bar set. It offers the same features as the 'First Bar' option.

### 5.2.8 Release Code

The release code that this bar is allocated to is displayed. The bar can be allocated to a different release code by activating the pop-down list and then picking the required release code from the list which shows all the release codes created on this drawing.

## 5.3 Range Edit

Menu Option Editing -> Range Edit

Command Line cads_rc_redit

Toolbar 

Left mouse button double – clicking on a RebarCAD entity will also call this command.

Activates the Edit Range dialog where all the range data for that bar set can be accessed.

NOTE - To access the range data, the range line or bar run of the bar set must be picked. If a bar view or label is picked, then the command will display the Edit Bar Label Data dialog as if the Bar Label Edit command had been picked.

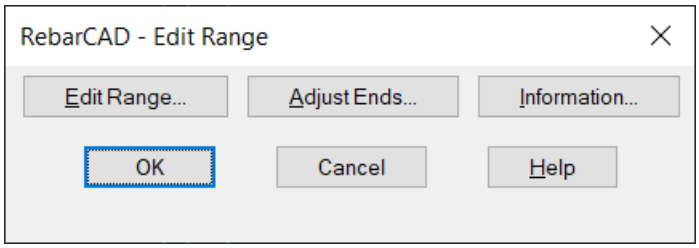



**Figure 5.4:1 Edit Range Dialog**

The Edit Range dialog allows you to edit the range data of a bar set. It also allows the bar dimensions of tapered bar ranges to be edited. The options available within the dialog are as follows:

## 5.3.1 Information

This displays the RebarCAD Entity Information dialog which shows the range type, bar marks, grade and size etc. of the bar set picked.

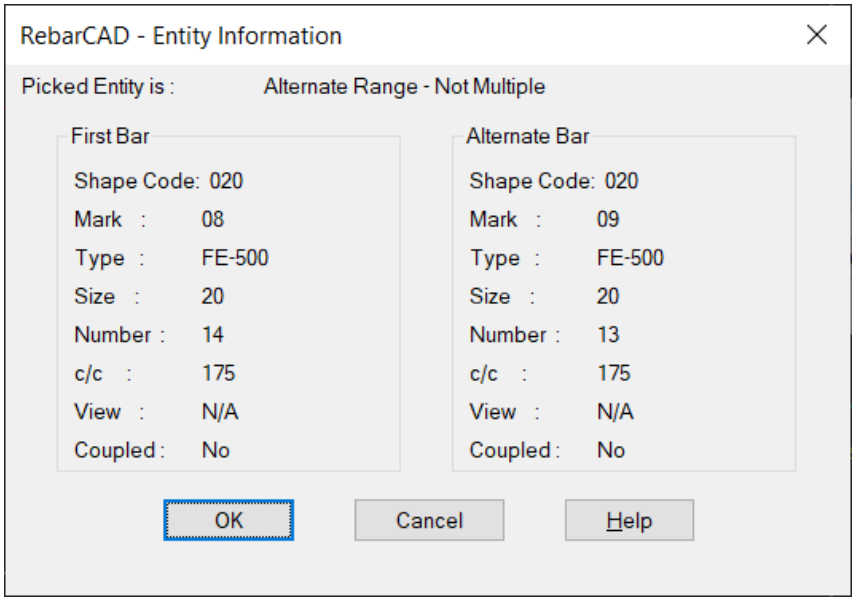



**Figure 5.4.1:1 Entity Information Dialog**

## 5.3.2 Adjust Ends

This option allows ranges to be skewed so that the number of bars is calculated along the skewed range length rather than the drawn range line length. The skew option is activated by picking the Adjust Ends option. You will then be asked to pick angles to which the range end markers will be re-drawn. An example of skewing a bar range can be found in Appendix B, along with a method for skewing the range end markers whilst maintaining the drawn range line length as the length from which the number of bars is calculated.

## 5.3.3 Edit Range

This option will display the RebarCAD Range Edit or the RebarCAD Multiple Range Edit dialog, depending upon the range type picked for editing.

## 5.3.4 RebarCAD Range Edit

The RebarCAD Range Edit dialog is displayed for range types, except multiple ranges, which display the RebarCAD Multiple Range Edit dialog described later in this section.

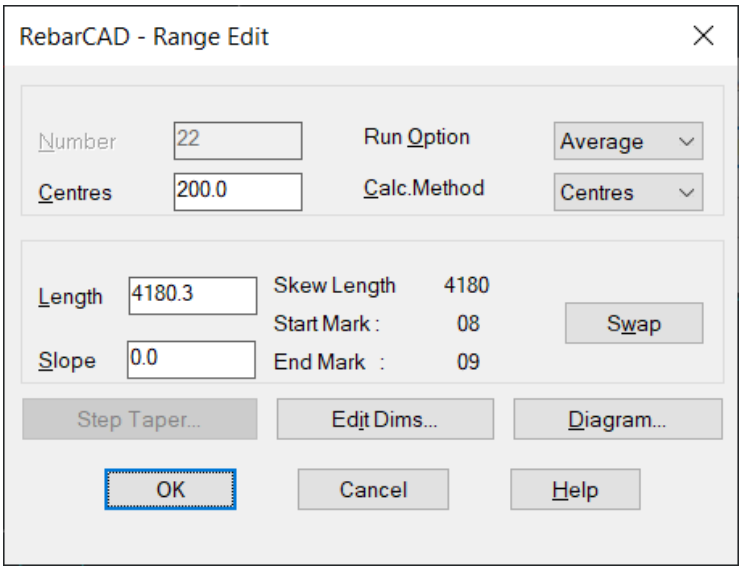



**Figure 5.4.4:1 Range Edit Dialog**

The Range Edit dialog has the following options available:

**Number**

This is the number of bars in the range. The display is greyed out if the Calc. Method is set to Centres, which means that the number of bars is automatically calculated from the Centres and Length values. If you wish to manually adjust the number of bars, then the Calc. Method must be set to Number first.

**Centres**

This is the maximum bar c/c's upon which the number of bars calculation is being based upon. Editing this value will re-calculate the number of bars required in the range.

**Run Option**

This controls how any bar run views of the bar range are to be drawn. If set to Average, then any bar runs will be drawn with the bars at average c/c spacing. If set to Runout, then any bar runs

will be shown with the bars drawn at the specified c/c spacing with the last spacing being the runout c/c value.

**Calc. Method**

This controls how the number of bars required in the range is being calculated. If set to Centres, then the number of bars is being calculated from the Centres value. If set to Number, then the number of bars can be entered with the Centres being adjusted to suit the number of bars over the range length.

**Length**

This is the length of the drawn range line and it is used in calculating the number of bars in the range. If the Skew Length beside it differs from the Length, then the Skew Length is used to calculate the number of bars in the range.

**Skew Length**

If a bar range has had the end markers adjusted to produce a skew range, then the skew length is shown here. If the Skew Length is reported as being the same as the Length, then the range has not been skewed.

**Slope**

If the range picked was drawn as a foreshortened view, then the slope angle it represents will be reported as a value other than zero. Entering a slope value of 0.1 will always set the Skew Length to that of the Length. This allows ranges to have the end markers skewed but the bar number calculation still based on the drawn range line length.

**Step Taper**

This option is available if the range picked was a Linear Tapered range. It accesses the Step Taper dialog where a step increment can be applied to rationalise the number of bar suffixes in the range. An example of applying a step increment to a bar range can be found in Appendix B.

**Edit Dims**

This option allows you to edit the bending data of a bar in the range. If the range picked was a tapered range, then all the bar data is shown in the form of a mini Schedule. To edit a particular bar's bending data, the line for that bar can be double clicked. Its data will then be displayed to allow editing with no effect on the other bars' dimensions.

**Diagram**

This will display help diagrams indicating the calculation process of sloping and skewed bar ranges.

## 5.3.5 RebarCAD Multiple Range Edit - Group List

The RebarCAD Multiple Range Edit - Group List dialog is displayed if the range picked was a multiple range type.

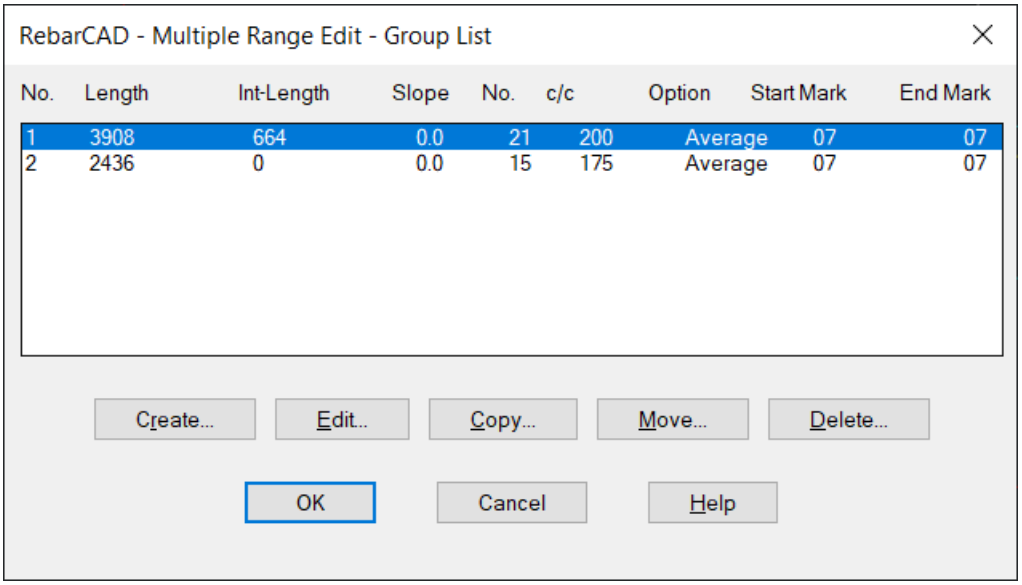



**Figure 5.4.5:1 Multiple Range Edit - Group List Dialog**

The Multiple Range Edit - Group List dialog displays the range information of each range group in the picked range in the form of a spreadsheet.

The Multiple Range Edit - Group List dialog has the following options:

**Create**

This option allows a new group to be created in the range. A blank Multiple Range Edit dialog will be displayed where the required group data can be entered. On exiting the dialog, you will be asked to allocate this new group a group number so that it can be added to the range.

**Edit**

This option will display the Multiple Range Edit dialog for the group highlighted in the group list.

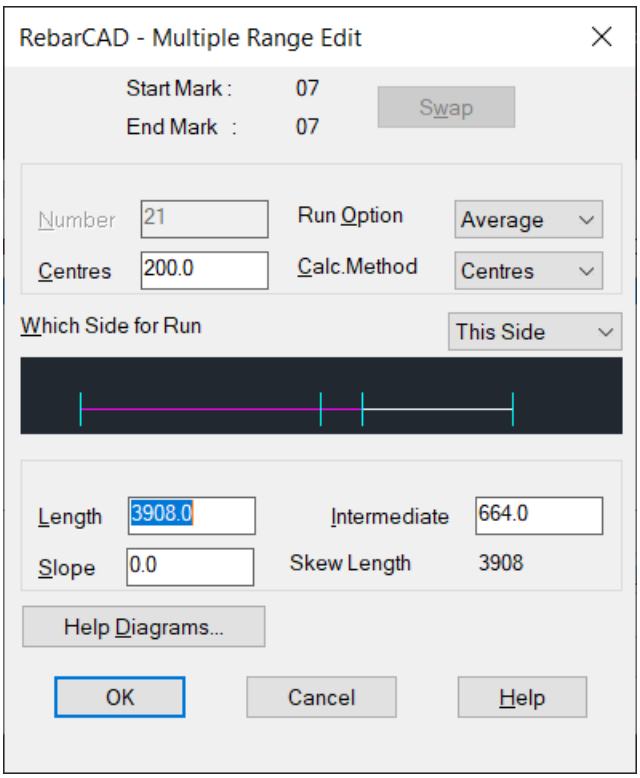



**Figure 5.4.5:2 Multiple Range Edit Dialog**

The Multiple Range Edit dialog has the following options:

**Start Mark - End Mark**

This option refers to Alternate range types. Using the Swap button, you can change the bar mark of the first bar in the group.

**Number**

This is the number of bars in the range. The display is greyed out if the Calc. Method is set to Centres, which means that the number of bars is automatically calculated from the Centres and Length values. If you wish to manually adjust the number of bars, then the Calc. Method must be set to Number first.

**Centres**

This is the maximum bar c/c's upon which the number of bars calculation is being based. Editing this value will re-calculate the number of bars required in the range group.

**Run Option**

This controls how any bar run views of the range group are to be drawn. If set to Average, then any bar runs will be drawn with the bars at average c/c spacing. If set to Runout, then any bar

runs will be shown with the bars drawn at the specified c/c spacing with the last spacing being the runout c/c value.

**Calc. Method**

This controls how the number of bars required in the range group is being calculated. If set to Centres, then the number of bars is being calculated from the Centres value. If set to Number, then the number of bars can be entered with the Centres being adjusted to suit the number of bars over the range length.

**Which Side for Run**

This allows any bar run views of the range to be re-drawn on the other side of the line drawn to specify the bar run.

**Length**

This is the length of the drawn range line for the group and it is used in calculating the number of bars in the range. If the Skew Length beside it differs from the Length, then the Skew Length is used to calculate the number of bars in the range.

**Intermediate**

This is the distance from the end of the current range group to the start point of the next range group.

**Skew Length**

If range group has had the end markers adjusted to produce a skew range, then the skew length is shown here. If the Skew Length is reported as being the same as the Length, then the range group has not been skewed.

**Slope**

If the range picked was drawn as a foreshortened view, then the slope angle the group represents will be reported as a value other than zero. Entering a slope value of 0.1 will always set the Skew Length to that of the Length. This allows ranges to have the end markers skewed but the bar number calculation still based on the drawn range line length.

**Help Diagrams**

This will display help diagrams indicating the calculation process of sloping and skewed bar ranges.

**Copy**

This option will copy the currently highlighted group in the group list to a group number you specify.

**Move**

This option will move the currently highlighted group in the group list to a group number you specify.

**Delete**

This option will delete the currently highlighted group in the group list.

## 5.4 View / Set Toggles

Activates a sub-menu with the following options:

### 5.4.1 Change SET to View

Menu Option Editing->View/SET Toggles->Change SET To View

Command Line cads_rc_SET2view

Toolbar 

This command will change a Bar Set to a Bar View of another set. The line in the Schedule for the set to be changed to a bar view will be erased, along with its bar label, if present.

NOTE - Both sets must be of the same bar mark.

### 5.4.2 Change View to SET

Menu Option Editing->View/SET Toggles->Change View To SET

Command Line cads_rc_view2SET

Toolbar 

This command will change a Bar View to Bar Set. This will add a new line to the Schedule for the New Set and allow a label to be placed on the drawing for the New Set.

## 5.5 Change Bar Style

Menu Option Editing->More->Change Bar Style

Command Line cads_rc_cbstyle

Toolbar 

This command is used to toggle bars from centre line to profile and vice versa. More than one bar view can be selected at a time and any selection can consist of a mixture of centre and profile.

## 5.6 Change Bar View

Menu Option Editing->More->Change Bar View

Command Line cads_rc_cview

Toolbar 

This command is used to change the view of a picked bar. For instance, it can be used to change a side view of a bar to a plan view etc.

NOTE - If the required view is not drawn, it means that not all of the bar bending data required to draw the view has been input.

## 5.7 Add Entity To View

Menu Option Editing->More->Add Entity to View

Command Line cads_rc_addview

Toolbar 

This command can be used to link non-RebarCAD entities to views. It could be used, for example, to create custom range lines to attach to a bar view.

## 5.8 Add Text To View

Menu Option Editing->More->Add Text to View

Command Line cads_rc_addtext

Toolbar 

This command can be used to attach text to a picked bar or label. The text automatically inherits the 'bar label' layer, height, font etc. and when entered, the bar label placement tools are available to align vertically, horizontally or stacked.

## 5.9 Redraw RC EntMore->Redraw RC entity

Command Line cads_rc_redraw

Toolbar 

This command is used to force RebarCAD to re-draw the picked items as if newly created. If you have changed the RebarCAD configuration this command can be used to redraw the RebarCAD entities with the new settings.

# 6 Group Layering Option (GLO)

**Chapter Objectives**

This chapter describes the Group Layering Option, which can be used to differentiate between reinforcement in the top or bottom of a slab or either face of a wall by easily placing bars, ranges and bar labels etc. on various associated AutoCAD layers.

The benefit of the GLO is that the drawing can be readily presented to show only the top bars or even just the bars in the T2 layer. For example, if you set up the GLO in the appropriate manner, you also have the opportunity of using alternative line styles. If your normal practice is to use broken lines for top bars and solid for bottom, then this can be easily achieved.

## 6.1 Setting Up the Layers

A full description of this procedure is given later in this section but a brief outline is shown here for the sake of clarity. There are two steps to defining the layer groups. One is to name the layers and define their line type and colour attributes and the other is to name the groups and assign the layers to each RebarCAD entity. A description of each RebarCAD entity is also given later in this section.

The layers are named in a file called RC-LAY.TXT, which is used to set up all the RebarCAD layers and is normally kept in the ??\CADS-RC\PARAMS directory. The groups are defined in a special file called RCGRPLAY.GLO also in the ??\CADS-RC\PARAMS directory. Both of these files are default files supplied with RebarCAD. If you intend to change them to suit your own requirements, then you are strongly advised to copy them first to another directory and modify the new files rather than the default files. RebarCAD can be pointed to the new files by altering the Group Layer File and Layer Define File settings in the Miscellaneous configuration options. This will avoid the new files being overwritten by any updates to RebarCAD you install subsequently. Also, by using alternative paths or filenames for these two files, you can set up different GLO arrangements for different projects. The configuration can then be changed to point to the appropriate files depending on the project.

To make any changes act as defaults for subsequent drawings, set the Write Prototype Settings option to YES in the Miscellaneous Configuration, so that a new configuration file is written to the hard disk.

## 6.2 Using the Group Layering Option

By default, RebarCAD uses the standard layers as set up in the Configuration options. To use the Group Layering Option, you must set the GROUP LAYERING OPTION to YES in the Miscellaneous configuration. Once that is done, you will be prompted to 'Pick required group layer or to Ignore' near the start of each function, from the screen menu, which draws a RebarCAD entity.

The layer groups defined are listed on the side menu with three standard options at the bottom of the menu. We advise you to maintain these options on any GLO files you create.

These standard options are: Ignore, All and None. Ignore can be selected in response to the 'Pick required group layer or I to Ignore' prompt, and will place the entities drawn on the standard layers as if the GLO was not in use. The All and None prompts are for use with the GLO control facilities described later.

After the first GLO selection of an editing session, a similar prompt appears in subsequent RC entity functions, this time with the previous layer group offered as a default. The layer groups are defined using a code number which appears in the default brackets rather than the group name. If you want to use a different group, then select the group name from the side menu, although you can type in the appropriate group number if you prefer.

The Ignore option places the entities on the standard default layers. Not those specified in the GLO. This option has to be selected each time you wish to use the default layers. Consequently, if you wish to draw a number of RC entities on the default layers, you are advised to turn the Group Layering Option OFF in the Miscellaneous configuration.

The tools for GROUP LAYERING CONTROL are to be found off the RebarCAD pull down menu GROUP LAYERING menu bar where there are the following options:

### 6.2.1 Show Group

Menu Option Group Layering -> Show Group

Command Line cads_rc_show_glo

Toolbar 

This command allows you to turn on a group by picking it from the side menu.
You can use this command to turn on as many groups as you wish.

## 6.2.2 Show Group ONLY

Menu Option Group Layering -> Show Group ONLY

Command Line cads_rc_show_one_glo

Toolbar 

This command will show only the group picked from the side menu. Any other groups will be turned off. This is useful for preparing a drawing for plotting where you only require the picked layer to be plotted.

## 6.2.3 Show All Groups

Menu Option Group Layering -> Show All Groups

Command Line cads_rc_show_glo A

Toolbar 

This command turns on all the group layers.

## 6.2.4 Suppress Group

Menu Option Group Layering -> Suppress Group

Command Line cads_rc_!show_glo

Toolbar 

This command turns off the group picked from the side menu.

## 6.2.5 Suppress Group ONLY

Menu Option Group Layering -> Suppress Group ONLY

Command Line cads_rc_!show_one_glo

Toolbar 

This command turns off the group picked from the side menu and turns all other groups on.

### 6.2.6 Suppress All Groups

Menu Option Group Layering -> Suppress All Groups

Command Line cads_rc_show_glo N

Toolbar 

This command turns all the groups off.

### 6.2.7 Change to Other Group

Menu Option Group Layering -> Change to other Group

Command Line cads_rc_change_glo

Toolbar 

This command allows you to change RC entities on one group layer to another group layer. It simply requires you to select the RC entities you wish to change and then pick the group you wish to change them to from the side menu. RebarCAD will redraw the selected items on their new group layer.

## 6.3 Group Layering and Non - RC Entities

The GLO facilities are designed to work specifically with bar views and their associated components. However, there is no reason why any object cannot be drawn on one of the group layers so that it can be turned on or off with the group. At present, other RebarCAD objects such as outlines are drawn according to their configured layers and the GLO does not over-ride these settings. If you want such objects on one of the group layers, then you will need to change the object's layer.

## 6.4 Group Layering Option

The Group Layering Option (GLO) allows bars and other RC entities to be assigned to groups of layers so that it is easy to manipulate details showing reinforcement in various locations such as top or bottom faces of a slab.

The method of using the GLO is described earlier in this manual. The following sections tell you how to set the layers and groups and also define each RebarCAD entity. To help you by illustrating the principles, an example is included later in this chapter.

## 6.5 RC Entities

RebarCAD entities are drawing objects which relate in some manner to the bar sets RebarCAD uses to display its details. Most of them are linked to the bar database.

Once the group layering option is activated, whenever a RebarCAD entity has to be drawn, you must assign it to one of the defined group layers. If several entities are to be drawn within the one command, you will only be asked once and all the entities will be assigned as appropriate.

The following entities are recognised by RebarCAD and are used in its layer assignment and GLO set up files.

| | | |
|---|---|---|
| Rebars | - | the reinforcing bar plot line |
| Bar run | - | the bars (bar dots) drawn in section |
| Ticks | - | the tick marker indicating the end of a bar |
| Label | - | the text label describing the bar set |
| Range line | - | the line between end markers in a range |
| Range intermid | - | the range line between groups in a multiple range |
| RC leader | - | the line from the range or bar to the label |
| End marker | - | the symbol marking the limits of a range group |
| Bar ref | - | the bar mark text normally used with runs |
| Range refs | - | the range text used with multiple range groups |
| Range dots | - | the range/bar line intersection markers |
| Tags | - | the symbols pointing to the mark text at bar ends |
| Tag text | - | the bar mark text used at bar ends |
| Tension symbol | - | coupler tension symbol |

| | | |
|---|---|---|
| Compression symbol | - | compression symbol coupler |
| Thread symbol | - | coupler thread symbol |
| Coupler TXT | - | coupler label text |

Rebars can also have a colour assigned to allow alternative pen thicknesses when drawing its plot line or its profile.

Profile colour - the colour for the correct profile pen.

Centre colour - the colour for the correct centre plot line pen.

## 6.6 Naming the layers

rclay.txt. This file is installed in the ??\CADS-RC\PARAMS directory and is updated each time a later version of the program is installed. Because of this, you are advised to make a copy, unless you are happy with the defaults and either rename it or place it in another directory. If you do this, you should alter the path to the new file in the Miscellaneous Configuration. This can be found from the Miscellaneous Configuration option on the Enquiry menu and it is changed by entering the full path and name for the new file in the dialog entry labelled Layer definition path.

If you then set the Write prototype setting to YES, this will be come the default layer file for all subsequent drawings.

The structure of the file is very simple and requires you to enter the data on three consecutive lines for each layer. Comments can also be added by preceding them with a ';' (semi-colon).

The first of the lines gives the layer name. Any valid name may be used.

The second line contains the linetype assigned to that layer.

The third line contains the colour or colour number assigned to that layer, e.g.:

```
Thickbars       ; this is a comment
CONTINUOUS
CYAN
```

There is nothing to prevent you from using the existing default layers, but when layer groups are turned off, other details using the layers will be turned off also. It is, therefore, better to assign layers specifically for the RebarCAD entities. You don't need a layer for each entity, as most of

them can share a layer. It really depends on whether their linetype and pen thickness (colour) is the same.

Rebars are handled slightly differently in that there is an option to show them as a plot line or profile. This does not rely on layers but the line colour and the group definition file has keywords to handle this independently. It is recommended that you set the layer definition to that required for the centre line.

## 6.7 Defining the Layer Groups

The layer groups are defined in a file called rcgrplay.glo also in the ??\CADS-RC\PARAMS directory. The order in which this file is laid out determines the order of the groups in the side menu which appears when RebarCAD needs to know which group to assign entities to. As supplied, you can define up to 19 groups, although if you need more and your display can accommodate them, the Group Layering Option section of the cads.mnu menu file can be edited to suit.

The syntax of the GLO file is quite simple:

Anything following a ';' is a comment

```
; this is a comment
```

Menu items appear between [square brackets] and must be the only item on the line apart from a subsequent comment.

```
[menu item]     ; optional comment
```

Each group name is a menu item and is immediately followed by the entity assignments (list of entities and their layers). The entity assignments contain the entity name followed by an = sign and then the layer name as defined in the layer definition file described above. The names are not case sensitive, but must match the names defined in the layer definition file.

```
Rebars = 0-70 ; optional comment
```

The example in the next section shows typical entries. You do not have to assign all the RC entities as any not assigned will be placed on their default layers.

The GLO works by mapping the menu items it finds in this file to a template within the cads.mnu file, which need not be edited unless you want more than 19 groups. This template allocates a number to each line of the side menu which matches the order of the menu items in the GLO file. The first menu item should not be altered, as this provides the standard 'Cancel' facility.

As the program reads the GLO file it creates the menu items and allocates them to the 'line no.' in the cads.mnu. If the menu items are followed by an entity name then the item is recognised as a group name. Empty brackets show as a blank line on the side menu.

This process is repeated until the end of the file is reached. In the GLO file supplied the last three menu items on lines 21, 22 and 23 are:

[ Ignore]

[ All]

[ None]

These have corresponding actions in the cads.mnu and if you wish to remove them or add more group option lines, then you can edit the cads.mnu accordingly. The AutoCAD Reference Manual gives details of .mnu files but you are advised not to edit them unless you are reasonably familiar with them.

## 6.8 Group Layering Option Definition Example

The earlier explanations are necessarily rather technical, so this simple example is offered as a guide to setting up your own GLO. In this example it is assumed that you wish to have additional groups for starters and nibs/upstands.

Load the rc-lay.txt file into a text editor such as WordPad or EDIT, which is supplied with recent versions of DOS. Be careful if you are using a word processor as these sometimes add invisible control characters which can cause problems.

You are advised not to edit the original file, so immediately save it under a new name such as my-lay.txt. You may also wish to specify a new directory at the same time. Most editors have a 'save as' facility which will rename the current document so that you can no longer accidentally overwrite the original.

To keep things simple, each group will use one layer for the bar type entities and another for the text and range line types. It does not matter what layer names they are given, provided they are not duplicated, but it is wise to use sensible ones.

In this example, the bar layer for the starters group will be called BarStr and the text layer TxtStr and for the nibs group BarNib and TxtNib respectively.

In both cases the bars will be continuous line types of cyan colour. By default, in RebarCAD, cyan maps to a 0.7mm pen. The text layers will be continuous, white, which has a default mapping to a 0.25mm pen.

To set this up, you should add the new layer names and attributes to the bottom of the file thus:

BarStr

CONTINUOUS

CYAN

TxtStr

CONTINUOUS

WHITE

BarNib

CONTINUOUS

CYAN

TxtNib

CONTINUOUS

WHITE

You should now save this file.

The next step is to define the layer groups. The easiest way to do this is to load the supplied rcgrplay.glo file and save it under a new name, say myglo.glo, in whichever directory you choose. So that you can easily check that you are using the correct GLO file in future, you are advised to delete most of the original comments and substitute your own, e.g.:

; extra starter and nib layer groups for project xyz.

Assuming that you do not wish to alter the existing layer groups, go to the end of the file and find the first empty [] after the existing layer definitions. In the file supplied there will be a line number commented beside the bracket, e.g.:

```
[]        ; 132
```

Leave the [Ignore], [Add] and [None] items at the bottom, as these will be retained. Inside the brackets add the group name you want to appear on the side menu for the starter bars group and a comment, if you wish e.g.:

[Starters] ; 132 special group layer for starter bars

Insert a line for the entity definitions, which must follow this name. To save a lot of typing, copy the preceding group definition (from the Rebars = BarGen entity, just below the group name [ General], to the last entity Coupler TXT=TXTGEN)

to the inserted line. You now only need to alter the layer names i.e. change each instance of BarGen to BarStr and TxtGen to TxtStr.

Repeat this procedure for the bar nib group. In this case the name could be

[ Nibs] (note leading spaces are used to adjust the text laterally in the side menu) and the layers should be changed to BarNib and TxtNib respectively.

You might like to add a separator to the next menu item [____] to finish off the list. The end of the GLO file should now look something like that shown in Figure 7.1 - GLO File.

If you need to add more groups, before extending the menu, you could remove the various prompt items at the top of the list and separators, all of which do nothing other than aid clarity.

You should now save this file.

Now the file editing is complete you will need to alter the RebarCAD configuration to read the new files you have created. This can be done by starting AutoCAD, either with a new or existing drawing, and loading RebarCAD. Once it is loaded, select the Miscellaneous configuration option Enquiry menu. This will display a dialog which has entries for both the layer and GLO definition files. Change the entries to give the full path, including file name and extension for both files. The example below shows the default settings.

Group layering path ??\CADS-RC\PARAMS\rcgrplay.glo

Layer definition path ??\CADS-RC\PARAMS \rc-lay.txt

RebarCAD will now be able to find the files when it needs them. Before leaving the dialog you should set the Group Layering Option to ON in order to invoke it, otherwise the normal default layering will be used. If you want to keep these settings for subsequent drawings, then set the

Write configuration setting entry to YES before selecting OK to exit from the dialog. This will write the configuration to disk to be loaded into RebarCAD on subsequent occasions.

If you now return to the drawing and select one of the options to draw a new bar or range, the first prompt will be 'Pick required Group Layer or 'I' to Ignore' : and the side menu will show you the new groups.

Selecting the group will then assign all the entities to the appropriate layers. For instance, if you pick Starters, then the bars will go on layer BarStr and the labels on layer TxtStr. Subsequently the group you pick will be the default until you choose another.

This all there is to setting up the Group Layering Option. If you have any difficulties contact our CADS Technical Support Department.

```
[ G.L.O]                ; 1 top line Ctrl-C's out of command
[--------]              ; 2 remember side menus only have 8 characters, usually.
[ T1/N1]                ; 3 group name
Rebars      = BarT1     ; Bars T1 layer
Centre colour  = Cyan   ; Bar plot line colour
Profile colour = White  ; Bar profile colour
Bar run     = BarT1     ; "
Bar section = BarT1
Ticks       = BarT1
Label       = TxtT1     ; labels T1 layer
Range Line  = TxtT1
End Marker  = TxtT1
Bar Refs    = TxtT1
Range Refs  = TxtT1
Range Dots  = TxtT1
Range Intermid = TxtT1  ; Lines between range lines in mutliple ranges
RC Leader   = TxtT1
Tags        = TxtT1
Tags Text   = TxtT1
Tension Symbol=BarT1
Compression Symbol=BarT1
Thread Symbol=BarT1
Coupler Txt =TxtT1
Unscheduledbar= BarT1
[ T2/N2]                ; 4 group name
Rebars      = BarT2     ; Bars T2 layer
Centre colour  = Cyan   ; Bar plot line colour
Profile colour = White  ; Bar profile colour
Bar run     = BarT2     ; "
Bar section = BarT2
Ticks       = BarT2
Label       = TxtT2     ; labels T2 layer
Range Line  = TxtT2
End Marker  = TxtT2
Bar Refs    = TxtT2
Range Refs  = TxtT2
Range Dots  = TxtT2
Range Intermid = TxtT2  ; Lines between range lines in mutliple ranges
RC Leader   = TxtT2
```

**Figure 6.8:1 GLO File**

# 7 Outlines

**Chapter Objectives**

The RebarCAD Outline tools, which supply a range of parametric shapes to automatically provide cover lines, correct line types and dimensions, are described in this chapter.

## 7.1 General Description

The RebarCAD Outline tools provide a range of parametric shapes which automatically provide cover lines, correct line types and also dimensions, if required. Also provided is a Freehand Outline option which allows a line to be drawn with a cover line beside it to a defined cover dimension.

Although RebarCAD provides tools to assist in the production of outlines for reinforcement details, there is no requirement for the outlines to be produced within the CADS environment.

RebarCAD can be used on outline drawings produced within or imported into AutoCAD. Where no cover lines exist, reinforcement can be placed relative to outlines using a range of extra snaps provided within RebarCAD (See chapter 3 section 3.5.1).

The Outlines menu also allows access to any RebarCAD Detailers, if installed.

The tools for Outlines are to be found in the RebarCAD pull-down menu in the Outlines menu bar.

### 7.1.1 Beam Sect/Elev

Menu Option Outlines -> Beam Sect/Elev..

Command Line cads_rc_sections, press enter, B, press enter

### 7.1.2 Column Sect/Elev

Menu Option Outlines -> Column Sect/Elev..

Command Line cads_rc_sections,press enter, C, press enter

Accesses a dialog where the required column section/elevation outline can be selected from the options displayed.

### 7.1.3 Slab Sections

Menu Option Outlines -> Slab Sections

Command Line cads_rc_sections, press enter, S, press enter

Accesses a dialog where the required slab section outline can be selected from the options displayed.

### 7.1.4 Miscellaneous

Menu Option Outlines -> Miscellaneous

Command Line cads_rc_sections, press enter, O, press enter

Accesses a dialog where the following outline options are available: -

1. Pad Base in plan and elevation
2. Staircase in plan and elevation
3. Retaining Wall in section
4. Beam intersection

NOTE - Some of these options display subsequent dialogs where a number of orientations may be displayed. Once the final selection has been made, prompts for dimensions will be displayed. In some cases, the outlines have quite a few dimension inputs which it can be impossible to remember from the previous slides. Picking VSLIDE from the side menu or the toolbar, displays the relevant slide so that dimension entry is easier.

## 7.2 Freehand Outline

Menu Option Outlines -> Freehand Outline

Command Line cads_rc_wall

Toolbar

Useful though the above outline shapes may be, there will be many instances when they are not appropriate. This is where the Freehand Outline option on the Outlines menu comes into its own. It enables you to draw an outline and parallel cover line in one operation.

You use it exactly like the normal AutoCAD LINE command, by picking point to point and then pressing ENTER to finish or C to close the line. The difference comes at the beginning of the command where the function needs to know the cover offset. If you draw the line from left to right, then a positive cover places the cover line below the outline. Conversely, a negative value places the cover line above.

As the outline may be drawn by reference to some existing construction, you can toggle the first line so that, the outline, the cover line or mid-way point between 8-2

them lies along the selected points. To do this, you move the cursor to the appropriate edge of the screen, or the centre, at the Toggle alignment prompt. You will see the pair of lines move according to the cursor position and you can press the pick button when the required alignment is shown.

You can then continue picking points to form the line which will maintain the same relative alignment for the remaining segments. As stated above, ENTER or Close will terminate the line.

## 7.3 Detailers

Menu Option Outlines -> Detailers

Command Line cads_rc_macros

Detailers are a series of additional programs that allow complete parametric reinforcement details of structural elements to be created.

The Detailers option from the Outlines menu enables you to access them. It displays a list of installed Detailers.

From then on what you do depends on the Detailer in question. Each Detailer is described in the Productivity Tools Manual. The manual covers each detailer's scope, how to use it, and the details it produces. When it has finished its task, you will be returned to your drawing. If you choose to have the Detailer draw a detail immediately, then you may need to place the detail on the drawing before proceeding further.

All details produced are fully compatible with the RebarCAD bar database and bar editing functions.

# 8 Configuration

**Chapter Objectives**

This chapter describes the Configuration section. The Configuration can be found off the RebarCAD pull down menu Configuration menu bar.

The Utilities menu bar has the following options:

## 8.1 Configuration Centre

Menu Option RebarCAD -> Configuration

Command Line cads_rc_config

Toolbar 

Accesses the RebarCAD Configuration Centre dialog as shown in Figure 8.1:1.

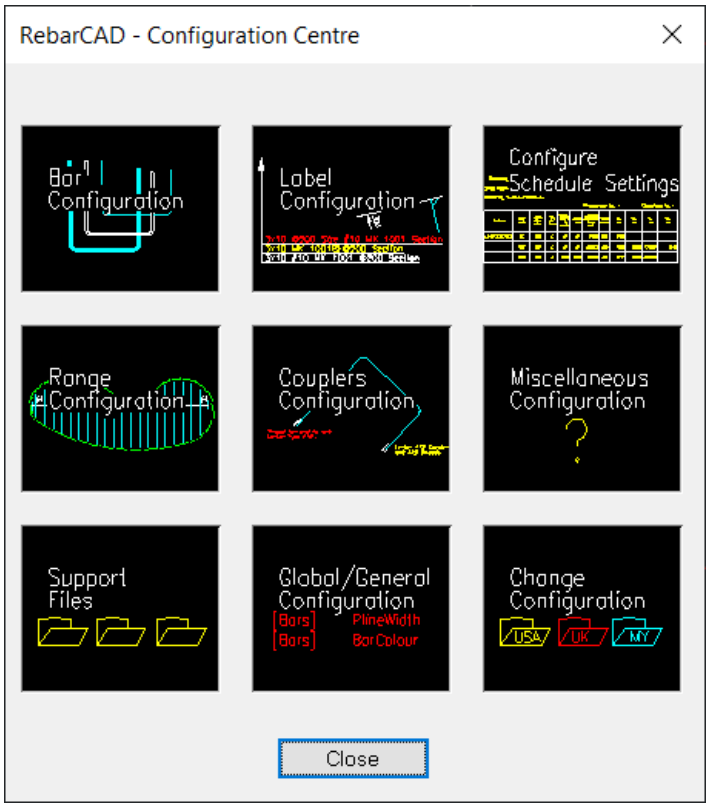



**Figure 8.1:1 RebarCAD Configuration Centre Dialog.**

From the RebarCAD Configuration Centre dialog the following configuration options are available.

# 8.2 Bar Configuration

The 'Bar Configuration' dialog contains the configuration for the reinforcing bars and part of the ranges.

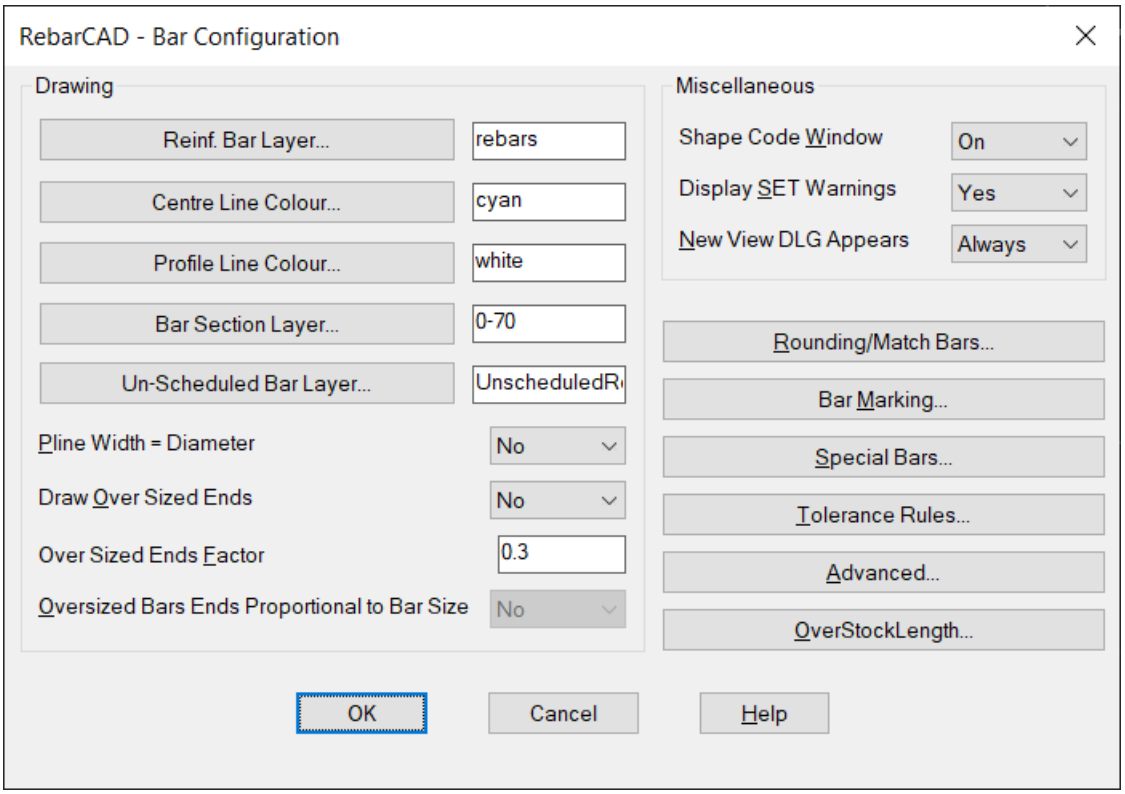



**Figure 8.2:1 Bar Configuration Dialog**

The options shown in the dialog are as follows: -

## 8.2.1 Reinf. Bar Layer

This is the colour the bar will be drawn if set to centre line mode when the Group Layering Option is OFF. The required colour can be typed into the field or the Centre Line Colour Button can be picked to invoke the standard AutoCAD colour selection dialog where the required colour can be picked from the colour palette.

## 8.2.2 Profile Line Colour

This is the colour the bar will be drawn if set to profile mode when the Group Layering Option is OFF. The required colour can be typed into the field or the Profile Line Colour Button can be picked to invoke the standard AutoCAD colour selection dialog where the required colour can be picked from the colour palette.

### 8.2.3 Bar Section Layer

This is the layer on which bar runs are placed when the Group Layering Option is OFF. The required layer can be typed into the field or the Bar Section Layer Button can be picked to invoke a layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

### 8.2.4 Pline Width = Diameter

If set to ‘Yes’, then bars will be drawn as plines with a width equal to the bar diameter.

### 8.2.5 Draw Over Sized Ends & Over Sized End Factor

If draw Over Sized Ends is set to NO, the donuts drawn at the end of bars to indicate the presence of another bar leg are drawn to the exact bar diameter. When set to Yes the donuts are scaled up by the factor defined in the Over Sized Ends Factor field.

### 8.2.6 Shape Code Window

Set to 'On' if the shape code diagram is required when picking the insertion/dimensions of a bar.

### 8.2.7 Display SET Warnings

This option not required in this version.

### 8.2.8 New View DLG Appears

If you require the 'Bar Drawing' dialog to appear every time a new bar view is picked, then set to 'Always'; otherwise set to 'Never'.

## 8.2.9 Rounding / Match Bars

Accesses the Rounding/Match Bars Config as shown in Figure 8.2.9:1.

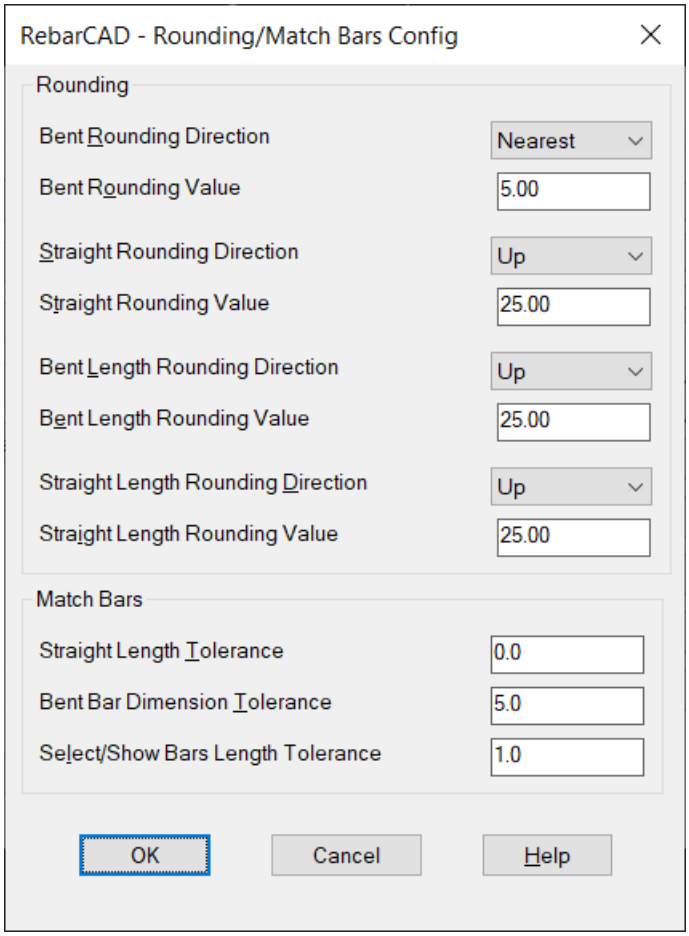



**Figure 8.2.9:1 Rounding/Match Bars Config Dialog**

The options shown in the dialog are as follows: -

**Bent Rounding Direction**

Defines the Schedule rounding direction (Up, Down or Nearest) applied to the bending dimensions of all bent bars and special bars.

**Bent Rounding Value**

Defines the Schedule numerical rounding value applied to the bending dimensions of all bent bars and special bars.

**Straight Rounding Direction**

Defines the Schedule rounding direction (Up, Down or Nearest) applied to the bending dimensions of all straight bars.

**Straight Rounding Value**

Defines the Schedule numerical rounding value applied to the bending dimensions of all straight bars.

**Bent Length Rounding Direction**

Defines the Schedule rounding direction (Up, Down or Nearest) applied to the bar length of all bent bars and special bars.

**Bent Length Rounding Value**

Defines the Schedule numerical rounding value applied to the bar length of all bent bars and special bars.

**Straight Length Rounding Direction**

Defines the Schedule rounding direction (Up, Down or Nearest) applied to the bar length of all straight bars.

**Straight Length Rounding Value**

Defines the Schedule numerical rounding value applied to the bar length of all straight bars.

**Straight Length Tolerance**

A tolerance value which will be used by the Match Bars function when processing straight bars may be entered. Straight bars with a difference in bar length less than or equal to the entered Straight Length Tolerance will be offered for bar mark matching.

**Select/Show bars Length Tolerance**

A tolerance value which will be used by the Select/Show Bars function when processing bars may be entered. Bars whose difference in bar length is less than or equal to the entered Select/Show Tolerance will be offered for bar mark matching.

## 8.2.10 Bar Marking

Accesses the Bar Marking Configuration dialog as shown in Figure 8.2.10:1.

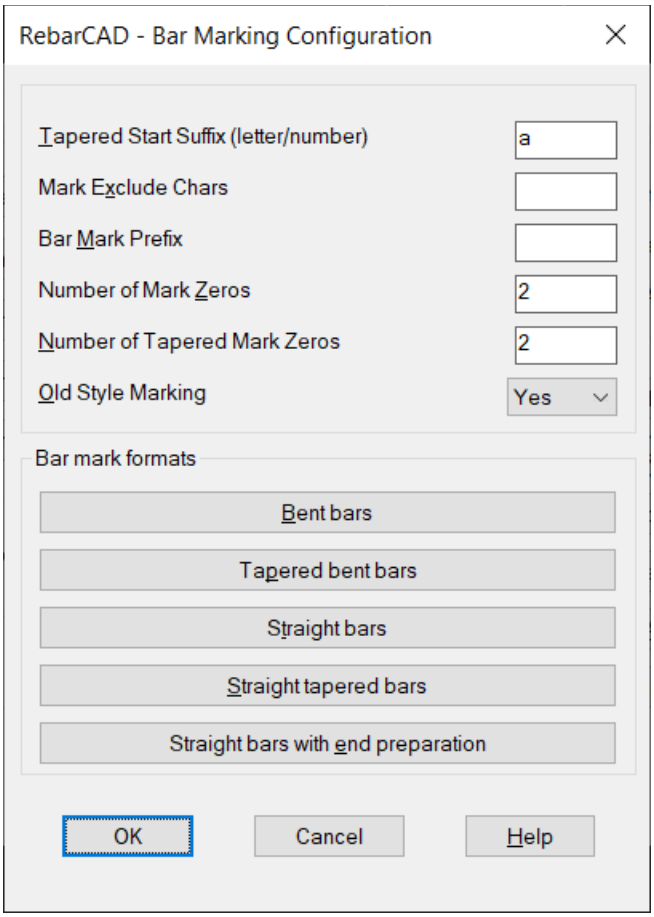



**Figure 8.2.10:1 Bar Marking Configuration Dialog**

The options shown in the dialog are as follows: -

**Tapered Start Suffix**

Enter the alpha or numerical suffix to be applied to the first bar in a tapered range.

**Mark Exclude Characters**

Enter any characters which may be present in any of the variables used in bar mark formats which are not to be included in the actual bar mark, e.g. If a bar mark format included prefixing with the bar size and the bar sizes were in the form 10M, 12M, 16M etc., bar marks would be in the form 10M01, 10M02 etc. Entering M in the Mark Exclude Chars would give bar marks 1001, 1002 etc. by excluding M from the bar mark system.

### Bar Mark Prefix

Enter any prefix which is to be automatically applied to all bar marks.

### Number of Mark Zeros

Entering 2 will give two digit bar marks such as 01, 02 etc., entering 3 will give three digit bar marks such as 001, 002 etc. and so on.

Number of Tapered Mark Zeros

Entering 2 will give tapered bar ranges two digit bar marks such as 01a, 02b etc., entering 3 will give three digit bar marks such as 001a, 002b etc. and so on.

### Old Style Marking

This option is used when bar mark formats are set to prefix the bar mark with the bar size. When Old Style Marking is set to No and the bar mark format includes prefix with bar size, the bar marks are in the form 1001, 1002, 1201, 1003, 1202 e.g. each size begins with mark 01. When set to Yes and the bar mark format includes prefix with bar size, the bar marks are in the form 1001, 1002, 1203, 1004, 1205 e.g. bar marks are concurrent across bar sizes.

### Bent, Tapered Bent, Straight and Straight Tapered Bar Mark Formats

Different Bar Mark Formats can be defined for these four bar type categories. Each format is defined via a Text Formatting dialog as shown in Figure 8.2.10:2.

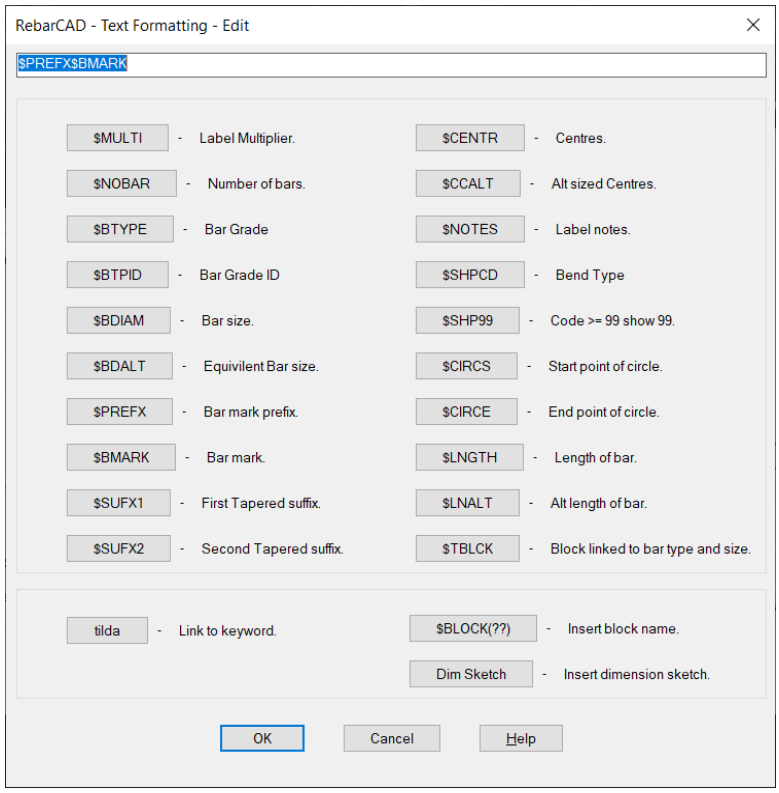



**Figure 8.2.10:2 Bar Mark Format Dialog**

For more information on setting up specific bar mark formats, please contact CADS Technical Support Department.

## 8.2.11 Special Bars

Accesses the RebarCAD Special Bar Configuration Dialog as shown in Figure 8.2.11:1.

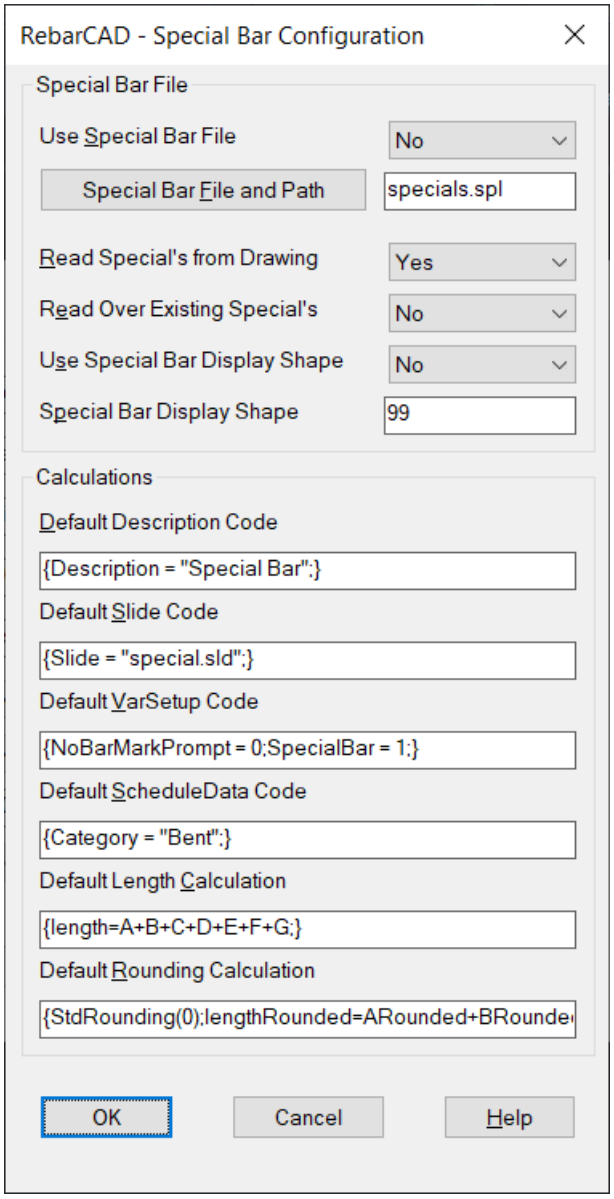



**Figure 8.2.11:1 Special Bar Configuration Dialog**

For information on how to define the Special Bar Configuration items, please contact CADS Technical Support Department.

**Tolerance Rules**

Not Applicable to this version.

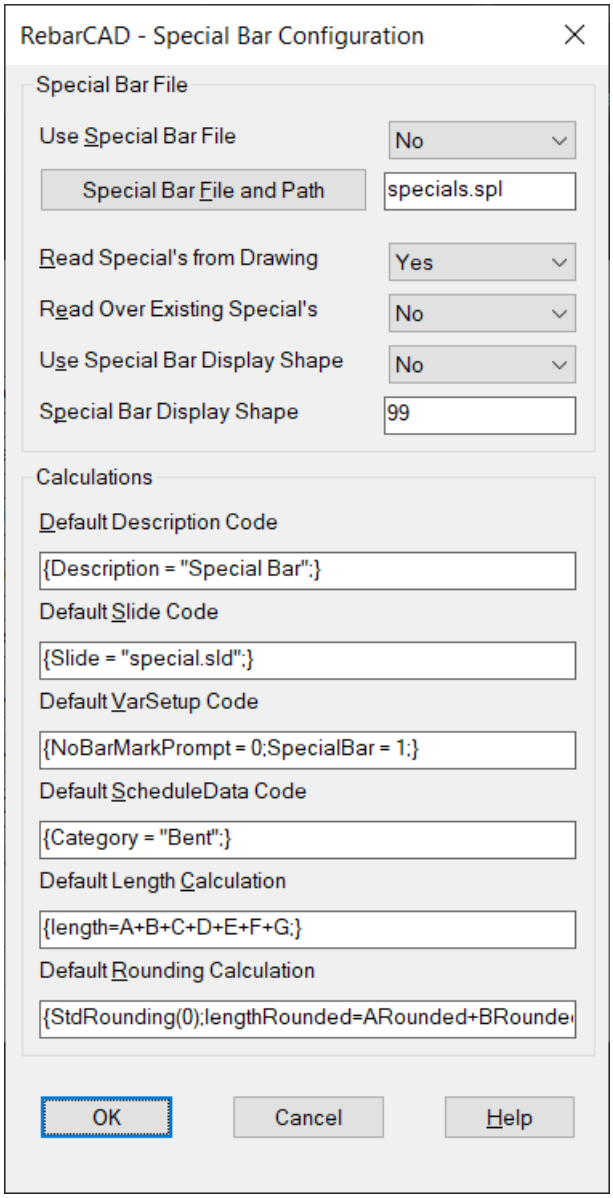



**Figure 8.2.11:2 Advanced Bar Configuration Options**

Accesses the Advanced Bar Configuration Dialog as shown in Figure 8.2.11:2.

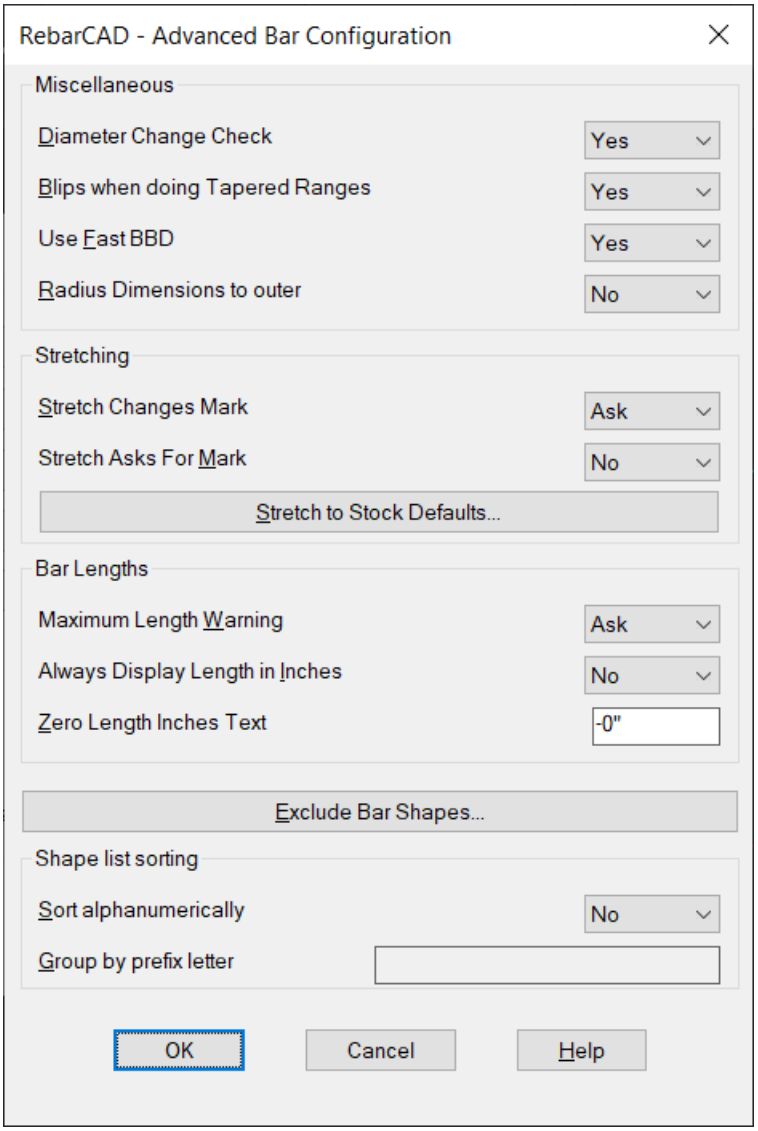



**Figure 8.2.11:3 RebarCAD Advanced Bar Configuration Dialog**

The options shown in the dialog are as follows: -

**Diameter Change Check**

When an existing bar is edited and the bar diameter or bar grade is changed, if Diameter Change Check is set to Yes, a dialog warning is displayed as a reminder to check that current lap lengths are adequate for the new bar diameter/grade.

**Blips when doing Tapered Ranges**

When set to Yes, the endpoints of all bars within a Varying Taper Range are indicated by AutoCAD Blips.

**Use Fast BBD**

The Bar Bending Data (BBD) file is processed many times and for this reason it has been built into RebarCAD as compiled code rather than Interpreted code (file). RebarCAD checks the size of the Bar Bending Data (BBD) configured. If the file is the same size as the size that is recorded in the executable, then the internal compiled BBD is run. If the file size is different, then the configured BBD

File is interpreted. The user can force the BBD File to be interpreted by

configuring 'Use Fast BBD' to No in the Bar configuration. The default is YES for speed.

**Radius Dimensions To Outer**

Standard shape codes with radius dimensions can be Scheduled with the radius to the inside or outside face of the bar. When set to No, the radius dimension is that to the inside face of the bar.

Stretch Changes Mark

This option controls how the Stretch Edit function reacts if there are other sets of a bar which are undergoing a stretch. The options are: -

- Yes - If other sets exist, the bar undergoing the stretch is automatically assigned a new bar mark, leaving the existing sets un-altered.
- No - If other sets exist, they will be updated to the new dimensions of the bar undergoing the stretch.
- Ask - If other sets exist, the program will ask if the bar undergoing the stretch is to be assigned a new bar mark.

**Stretch Asks For Mark**

This option works in conjunction with the Stretch Changes Mark option above and relates to the allocation of new bar marks. The options are: -

- Yes - When new bar marks are being allocated, the user is asked to confirm each new bar mark.
- No - New bar marks are automatically assigned using the next available bar mark in the sequence.

**Stretch to Stock Defaults**

Accesses the RebarCAD Stretch to Stock Defaults dialog as shown in Figure 8.5.11:3. These are the default settings used by the Stretch to Stock function.

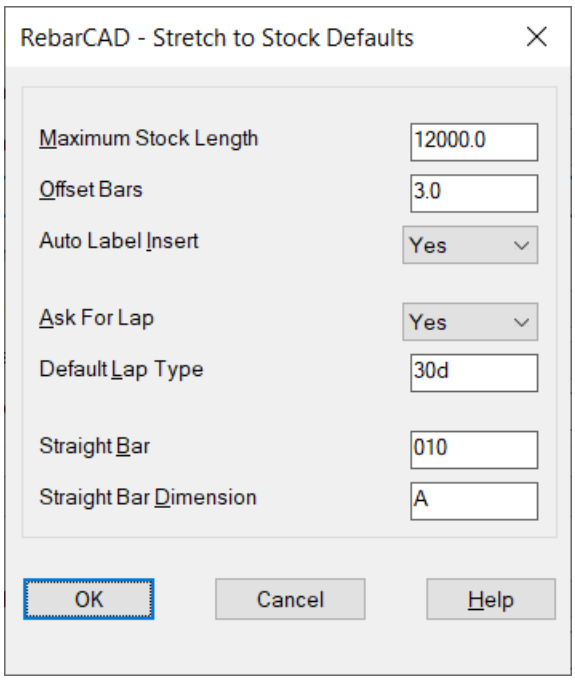



**Figure 8.2.11:4 Stretch to Stock Defaults Dialog**

The options shown in the dialog are as follows: -

**Maximum Stock Length**

This is the maximum bar length to be used, when the stretched bar would exceed this length additional bars are added with laps to complete the reinforcement detail.

**Offset Bars**

This is the plotted distance which lapping bars are offset to make the lap visible on the drawing.

**Auto Label Insert**

When set to Yes, as each additional lapped bar is detailed placement of the associated bar label is offered. The bar to which the label relates is highlighted to assist in correct placement of the bar label.

**Ask For Lap**

When set to Yes, the user is asked to confirm/enter the required lap length to be used. When set to No, the default lap value is used.

**Default Lap Type**

Enter the required default lap type.

**Straight Bar**

Enter the shape code defined in the bdf file for straight bars.

Straight Bar Dimension Enter the straight bar dimension.

**Maximum Length Warning**

RebarCAD allows a maximum bar length to be set. If this length is exceeded, the outcome is controlled by the Maximum Length Warning setting. The options are as follows: -

1. Ask - If the maximum bar length is exceeded, a dialog is displayed allowing the user to either detail the bar as drawn or abort the bar drawing operation.
2. Print- If the maximum bar length is exceeded, a warning is printed on the command line.
3. Abort - If the maximum bar length is exceeded, the bar drawing operation is aborted.

**Always Display Length Inches**

This option is only relevant when detailing in feet and inch units. When set to Yes, bar dimensions which are exact feet values will display the inch value of 0. When set to No, the inch value will not be shown.

**Zero Length Inches Text**

Used when Always Display Length Inches is set to Yes. The text entered will be used for zero inch values, e.g. 0” would give 5’0” whereas -0” would give 5’-0”.

**Exclude Bar Shapes**

Accesses the RebarCAD Select Bar Shapes to be Excluded dialog as shown in Figure 8.2.11:4.

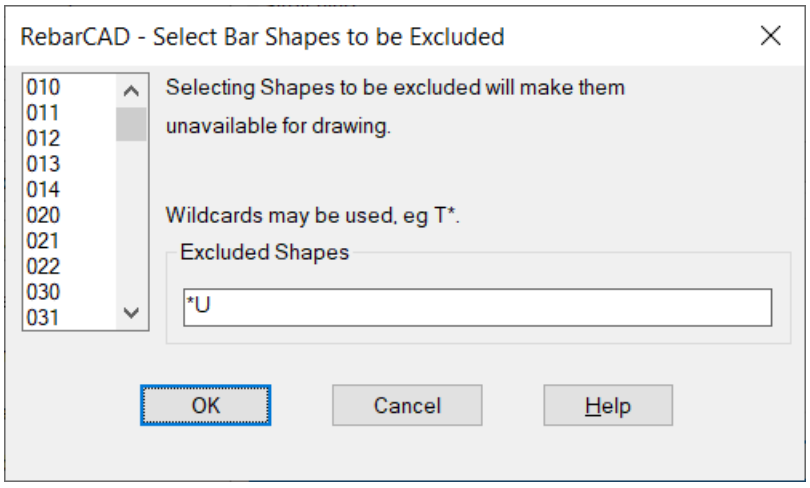



**Figure 8.2.11:5 Select Bar Shapes to be Excluded Dialog**

Selecting with a double click a shape code from the shape code list will add that shape to the Exclude Shapes field and remove those shape codes from the bar drawing and bar editing dialog. If a shape code is deleted from the Exclude shapes field, it will become available for use in the Bar Drawing and Bar Editing dialog.

## 8.3 Label Configuration

The 'Label Configuration' dialog contains the configurations for all labelling and annotation options.

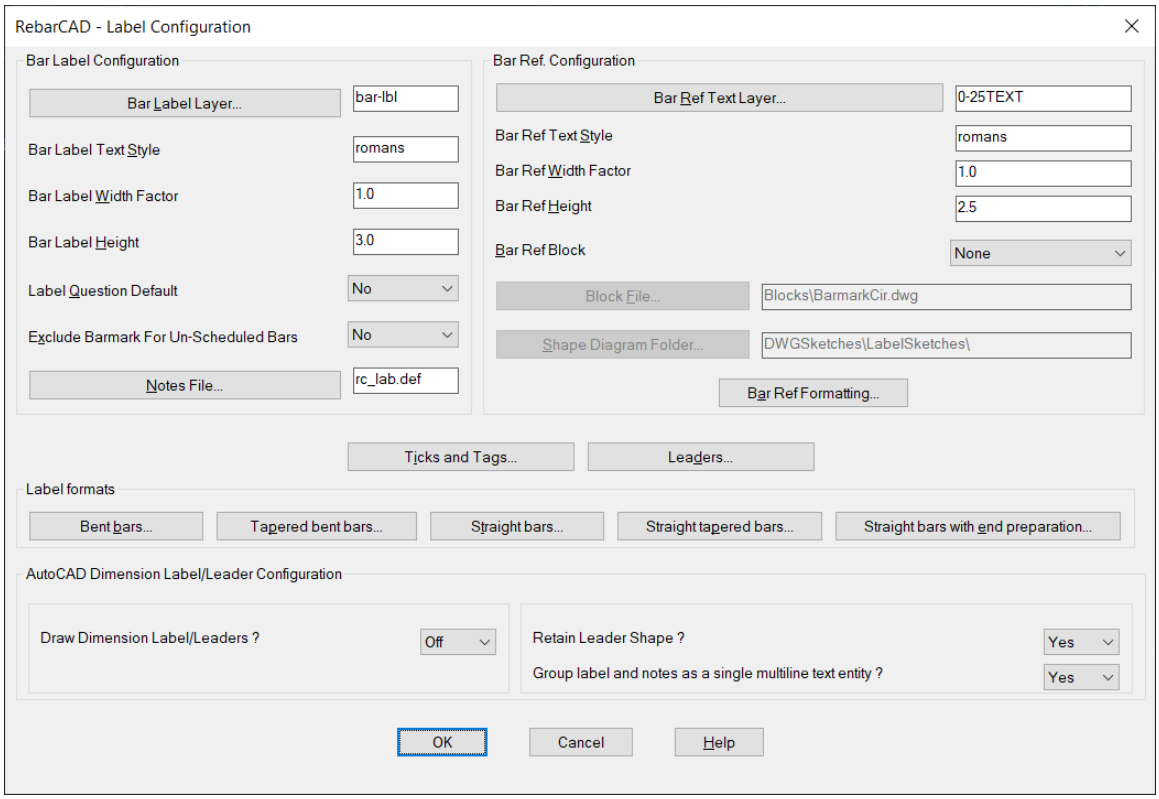



**Figure 8.3:1 Label Configuration Dialog**

The options shown in the dialog are as follows: -

### 8.3.1 Bar Label Layer

This is the layer on which the Bar Labels are drawn when the Group Laying

Option is OFF. The required layer can be typed into the field or the Bar Label Layer button can be picked to invoke a standard layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

### 8.3.2 Bar Label Text Style

This is the text style used for Bar Labels.

### 8.3.3 Bar Label Width Factor

This is the width factor applied to Bar Label text.

### 8.3.4 Bar Label Height

This is the height of the Bar Label text in plotted mm/inches.

### 8.3.5 Label Question Default

This is the default offered at the 'Label Bar' prompt. The options are as follows:

'Yes' - The prompt will display 'Label Bar <Yes>'

'No' - The prompt will display 'Label Bar <No>'

'None' - The bar must be labelled to complete the bar / range drawing function.

### 8.3.6 Notes File

This is the standard notes File Name and Path. The file name and path can be typed into the field or the Notes File button picked and the required file selected from a standard file selection dialog.

A default notes file ??\CADS_RC\PARAMS\RC_LAB.DEF is supplied, this file can be copied and used to create your own notes file.

### 8.3.7 Bent, Straight and Tapered Label Formats

The Label Format options allows you to control the layout and contents of Bent, Straight and Tapered Bar Labels. It is accessed by picking the Label Format button. The current label format is displayed inside the RebarCAD Text Formatting - Edit dialog as shown in Figure 8.6.7:1.

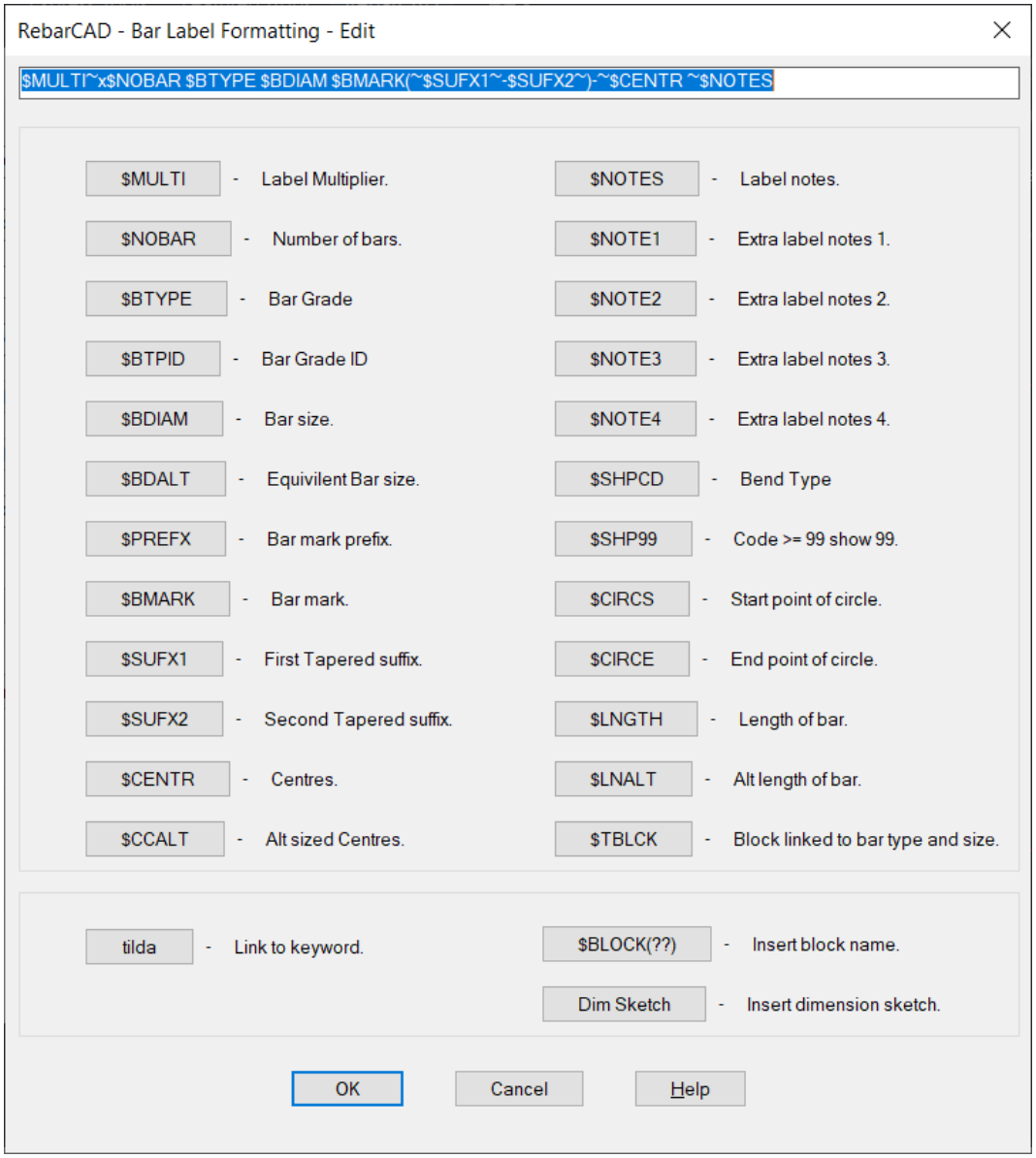



**Figure 8.3.7:1 Label Format Dialog**

For more information on setting up specific bar label formats, please contact CADS Technical Support Department.

## 8.3.8 Bar Reference Text Layer

This is the layer on which the Bar Ref's are drawn when the Group Laying Option is OFF. The required layer can be typed into the field or the Bar Ref. Layer button can be picked to invoke a standard layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

### 8.3.9 Bar Ref. Text Style

This is the text style used for Bar Ref's.

### 8.3.10 Bar Ref. Width Factor

This is the width factor applied to Bar Ref. text.

### 8.3.11 Bar Ref. Height

This is the height of the Bar Ref. text in plotted mm/inches.

### 8.3.12 Bar Ref. Formatting

The Bar Ref. Formatting options allow you to control the layout and contents of Bar Ref's. Accessed by picking the Bar Ref. Formatting button the current format is displayed inside the RebarCAD Text Formatting - Edit dialog as shown in Figure 8.3.12:1.

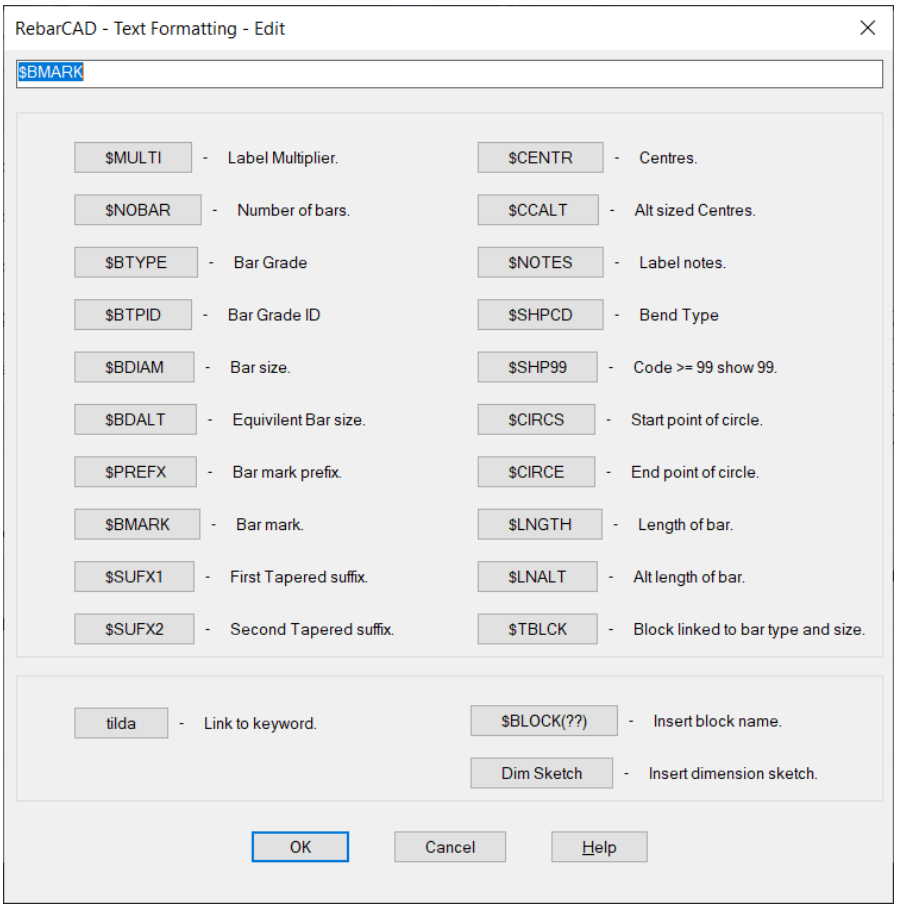



**Figure 8.3.12:1 Bar Reference Format Dialog**

For more information on setting up specific bar reference formats please contact CADS Technical Support Department.

## 8.3.13 Tick & Tag Configuration

The Tick & Tag configuration is available by picking the Ticks and Tags button inside the RebarCAD Label Configuration dialog. This accesses the RebarCAD Tick & Tag Configuration dialog, as shown in Figure 8.6.13:1.

Clicking on a slide will display a description of that configuration item in the top left corner of the dialog. The configuration items are as follows:

**Offset from bar end to tail start**

Enter required distance in plotted mm/inches. A negative value forces the tail past the bar end the entered distance. A positive distance will stop the tail the entered distance short of the bar.

**Offset from bar end to tail top**

Enter required distance in plotted mm/inches.

**Offset from bar end to arrow tip**

Enter required distance in plotted mm/inches.

**Width of arrow head**

Enter required width in plotted mm/inches.

**Length of arrow head**

Enter required length in plotted mm/inches.

**Length of arrow tail**

Enter required length in plotted mm/inches.

**Height of Bar Mark text**

Enter required height in plotted mm/inches.

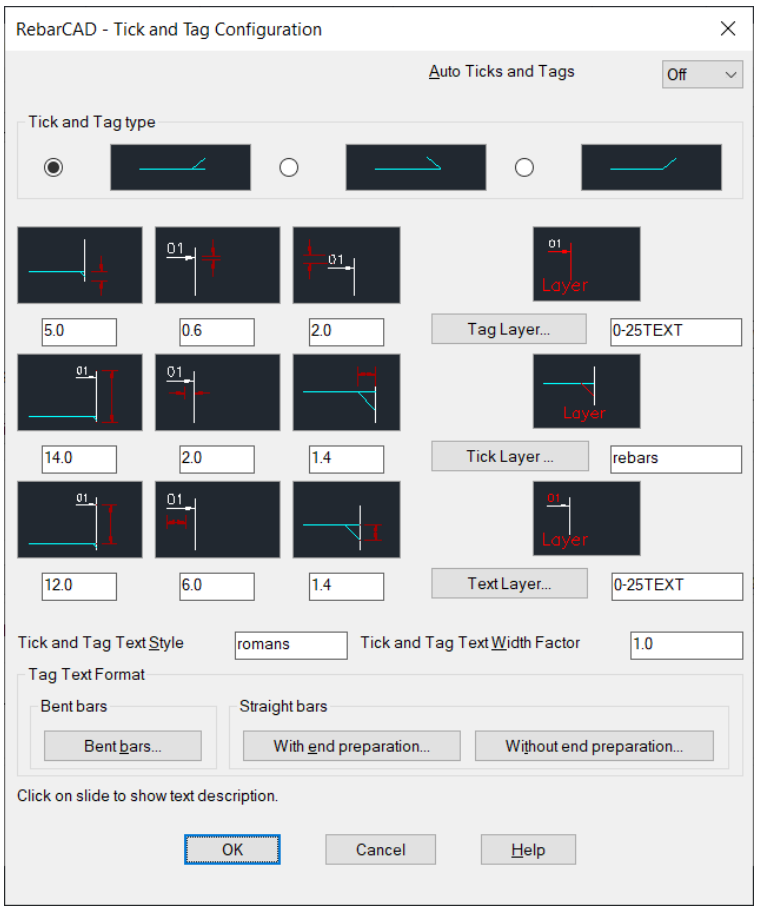



**Figure 8.3.13:1 Tick & Tag Configuration Dialog**

### Length of tick

Enter required length in plotted mm/inches.

### Height of tick

Enter required height in plotted mm/inches.

### Tag Layer

This is the layer on which the Tags are drawn when the Group Layering Option is OFF. The required layer can be typed into the field or the Tag Layer button can be picked to invoke a standard layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

### Tick Layer

This is the layer on which the Ticks are drawn when the Group Layering Option is OFF. The required layer can be typed into the field or the Tick Layer button can be picked to invoke a standard layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

### Text Layer

This is the layer on which the Text is drawn when the Group Layering Option is OFF. The required layer can be typed into the field or the Text Layer button can be picked to invoke a standard layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

### Auto Ticks & Tags

If set to ON, then as each bar view is drawn you are prompted to attached Ticks & Tags. If set to OFF, then no prompt is offered for Tick & Tag attachment.

### Tag Text Format

The Tag Text Formatting options allow you to control the layout and contents of the Tag text. They are accessed by picking the Tag Text Format button. The current format is displayed inside the RebarCAD Text Formatting - Edit dialog, as shown in Figure 8.3.13:2.

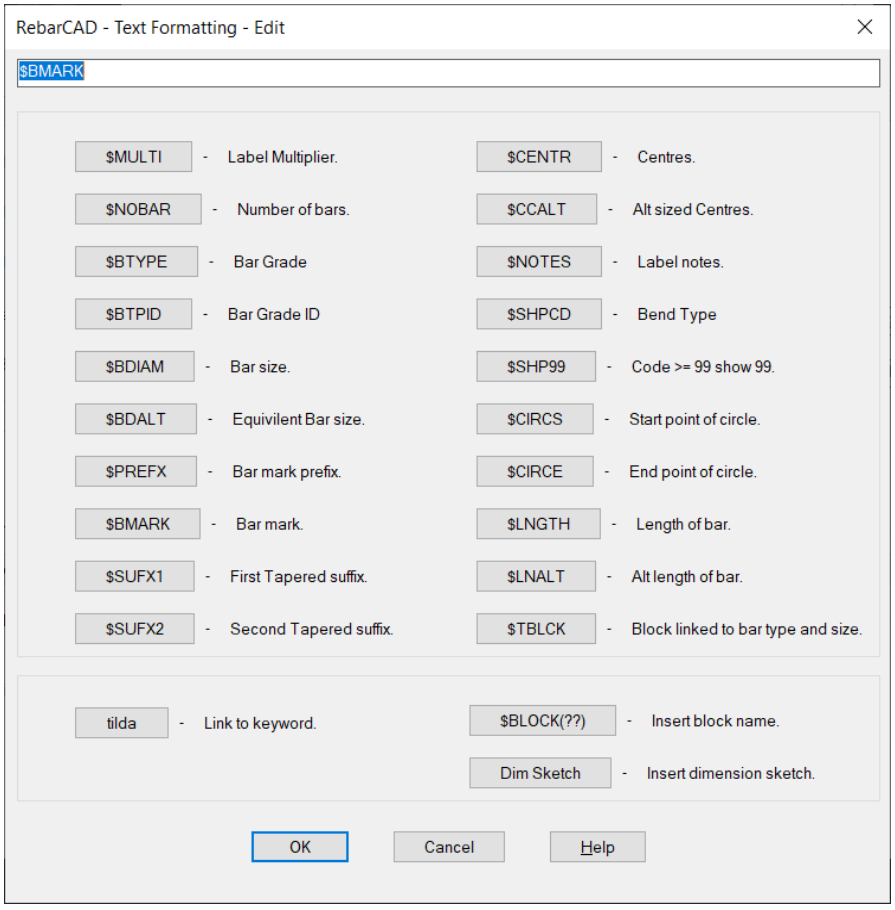



**Figure 8.3.13:2 Text Formatting - Edit Dialog**

For more information on setting up specific bar reference formats, please contact CADS Technical Support Department.

## 8.3.14 Leader Configuration

The Leader configuration is available by picking the Leaders button inside the RebarCAD Label Configuration dialog. This accesses the RebarCAD Leader Configuration dialog, as shown in Figure 8.3.14:1.

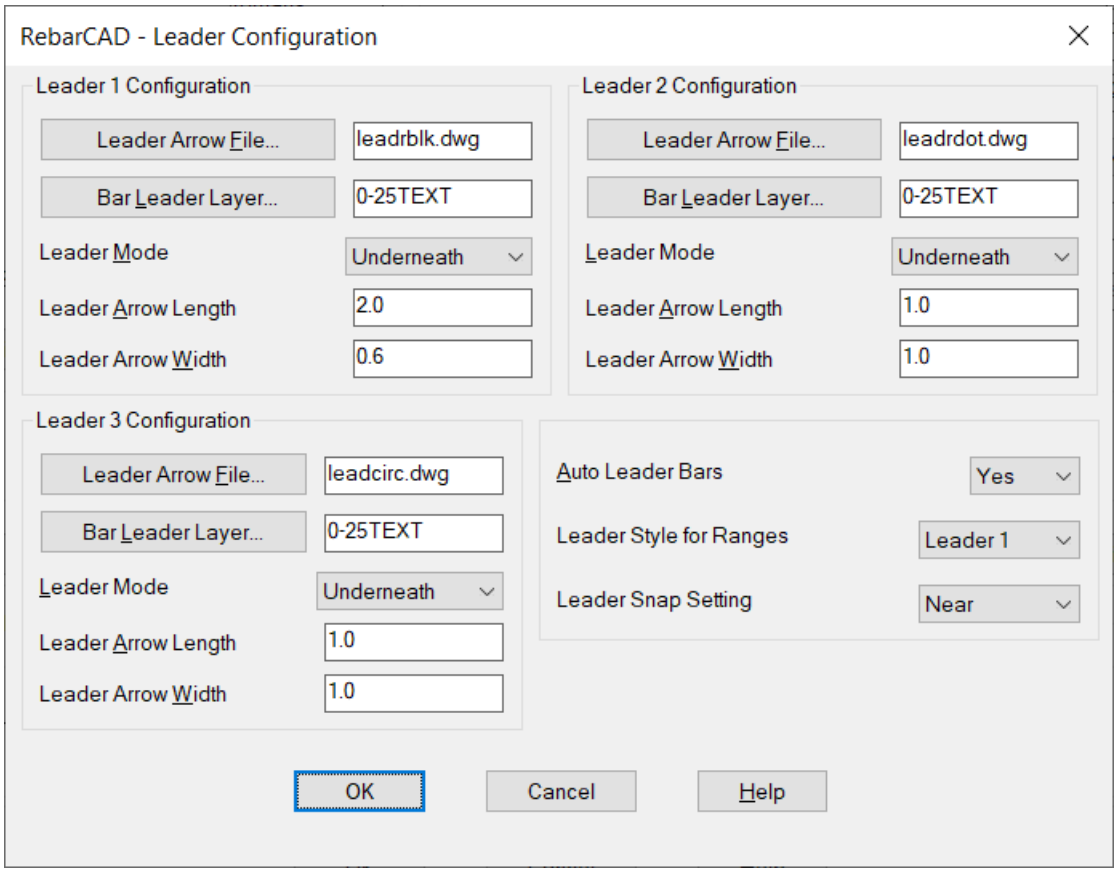



**Figure 8.3.14:1 Leader Configuration Dialog**

This configuration controls the Leader 1, Leader 2 & Leader 3 options available from the Labelling options. This does not affect the standard AutoCAD Leader. Three Leader types are available, namely Leader 1, Leader 2 and Leader 3. The

RebarCAD Leader Configuration dialog has identical options for Leader 1, Leader 2 and Leader 3, so the configuration options listed below apply to all types.

**Leader Arrow File**

This is the leader block File Name and Path. The file name and path can be typed into the field or the Leader Arrow File Button picked and the required file selected from a standard file selection dialog. This block is inserted on the end of the leader to form the arrow or donut as required in Leader 1 or 2.

**Bar Leader Layer**

This is the layer on which the Leader is drawn when the Group Laying Option is OFF. The required layer can be typed into the field or the Bar Leader Layer button can be picked to invoke a standard layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

**Leader Mode**

If set to Underneath, then the leader will be drawn underlining the bar label. If set to Centre, then the leader will be drawn from the end of the bar label.

**Leader Arrow Length**

This is the length of the leader arrowhead in drawn mm/inches for Leader 1 and the donut diameter in Leader 2.

**Leader Arrow Width**

This is the width of the leader arrowhead in drawn mm/inches for Leader 1 and the donut diameter in Leader 2.

**Auto Leader Bars**

Setting to Yes will automatically call the leader command if after drawing a bar view the associated label is immediately placed by entering Yes at the label bar prompt.

## 8.4 Range Configuration

The Range Configuration dialog contains the configuration of the ranges.

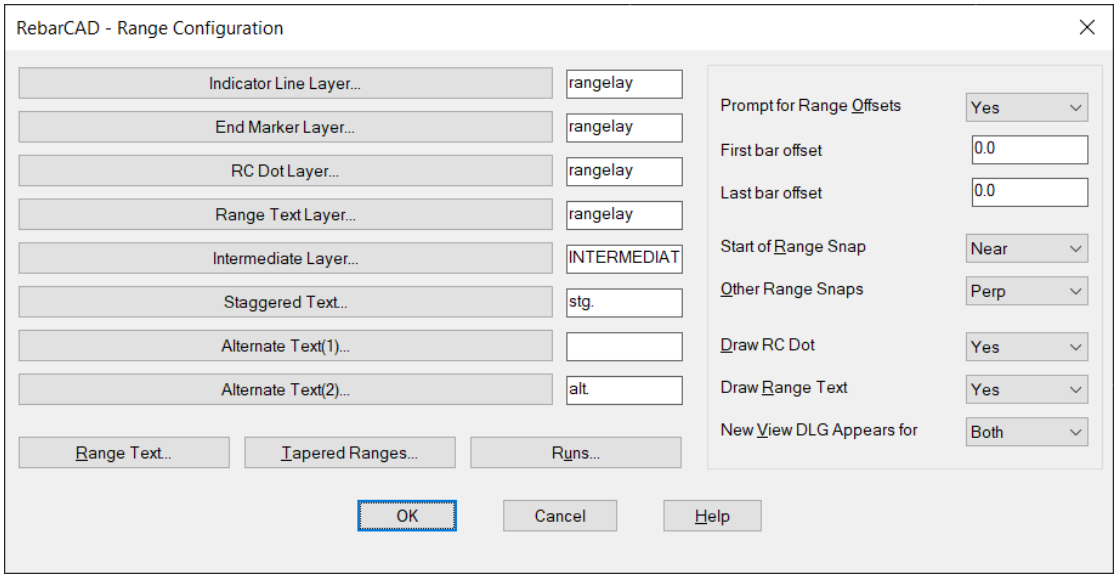



**Figure 8.4:1 Range Configuration Dialog**

The options shown in the dialog are as follows: -

## 8.4.1 Indicator Line Layer

This is the layer on which the Range line is placed when the Group Layering

Option is OFF. The required layer can be typed into the field or the Indicator Line Layer Button can be picked to invoke a layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

## 8.4.2 End Marker Layer

This is the layer on which the Range Line End Markers are placed on when the Group Layering Option is OFF. The required layer can be typed into the field or the End Marker Layer Button can be picked to invoke a layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

## 8.4.3 RC Dot Layer

The RC dot is a block which is inserted at the intersection point of the range line and the bar drawn. The RC Dot Layer is the layer which the RC dot is placed on when the Group Layering Option is OFF. The required layer can be typed into the field or the RC Dot Layer Button can be picked to invoke a layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

## 8.4.4 Range Text Layer

This is the layer that any range text is placed on when the Group Layering Option is OFF. Range Text is text associated with a range type, i.e. on multiple ranges text is displayed to show group c/c in the form (17+16) @8”.

The required layer can be typed into the field or the Range Text Layer Button can be picked to invoke a layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

## 8.4.5 Intermediate Layer

This is the layer which the multiple range intermediate lines are placed on when the Group Layering Option is OFF. The intermediate lines are the lines between groups of bars in multiple group ranges. The required layer can be typed into the field or the Intermediate Layer Button can be picked to invoke a layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

### 8.4.6 Staggered Text

This is the text that is copied into a Staggered Range Bar Label. The required text can be typed into the field or the Staggered Text Button can be picked to invoke the Standard Note dialog where the required note can be selected from the displayed list.

### 8.4.7 Alternate Text (1)

This is the text that is copied into the label of the first bar drawn in an Alternate

Range. The required text can be typed into the field or the Alternate Text (1) Button can be picked to invoke the Standard Note dialog where the required note can be selected from the displayed list.

### 8.4.8 Alternate Text (2)

This is the text that is copied into the label of the second bar drawn in an

Alternate Range. The required text can be typed into the field or the Alternate Text (2) Button can be picked to invoke the Standard Note dialog where the required note can be selected from the displayed list.

### 8.4.9 First Bar Offset

When drawing a bar range, a prompt 'first bar offset' is given when the start of the range has been picked to allow the start point to be offset from the picked point. The value entered in this field will be offered as a default at the 'first bar offset' prompt.

### 8.4.10 Last Bar Offset

When drawing a bar range, a prompt 'last bar offset' is given when the end of the range has been picked to allow the end point to be offset from the picked point. The value entered in this field will be offered as a default at the 'last bar offset' prompt.

### 8.4.11 Start of Range Snap

When drawing a bar range it is quite common to use AutoCAD snaps to pick the start point of the bar range. This option allows the user to configure different snaps from those currently configured when picking the start point of a range.

The options are as follows: -

Leave - Keep current OSNAP setting.

None - No OSNAP End - Endpoint etc.

### 8.4.12 Other Range Snaps

When drawing a bar range, it is quite common to use AutoCAD snaps to pick the end point of the bar range (or the start point of intermediate groups in multiple ranges). This option allows the user to configure different snaps from those currently configured when picking the end or the start point of intermediate groups in multiple ranges.

The options are as follows: -

Leave - Keep current OSNAP setting.

None - No OSNAP End - Endpoint etc.

### 8.4.13 Draw RC Dots

Set to 'Yes' if RC Dots are required. See also 'RC Dot Layer'.

### 8.4.14 Draw Range Text

Set to 'Yes' if range text is required. See also 'Range Text Layer'.

### 8.4.15 New View DLG Appears

The user may not want to look at the 'Bar Drawing' dialog every time a new view is being carried out for a range or run.

The options are as follows: -

Both - DLG appears for both new view Range or Run

Range - DLG appears for range only

Run - DLG appears for run only

Neither - DLG doesn't appear for either range or run

9.7.16. Tapered Ranges

The ‘Tapered Ranges Config.’ dialog contains the automatic range stepping configuration as shown in Figure 8.4.15:1.

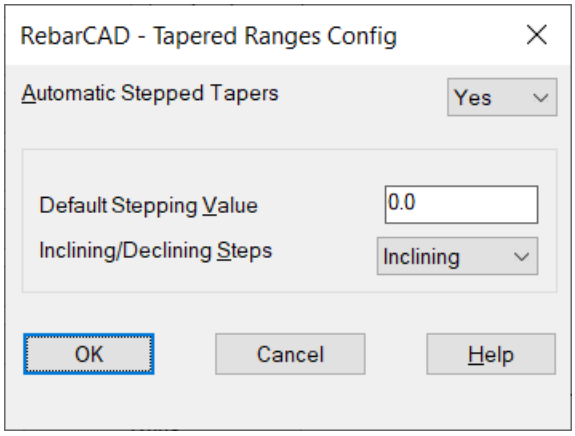



**Figure 8.4.15:1 Tapered Ranges Config. Dialog**

The options shown in the dialog are as follows: -

**Automatic Stepped Tapers**

When set to Yes, linear tapered ranges will automatically have a step taper applied to the default value.

**Default Stepping Value**

This is the default step/grouping value.

**Inclining/Declining Steps**

When set to Inclining, the step/grouping will be applied starting from the shortest bar.

When set to Declining, the step/grouping will be applied starting from the longest bar.

## 8.4.16 Runs

The 'Runs' dialog contains the bar run sizing configuration, as shown in Figure 8.4.16:1.

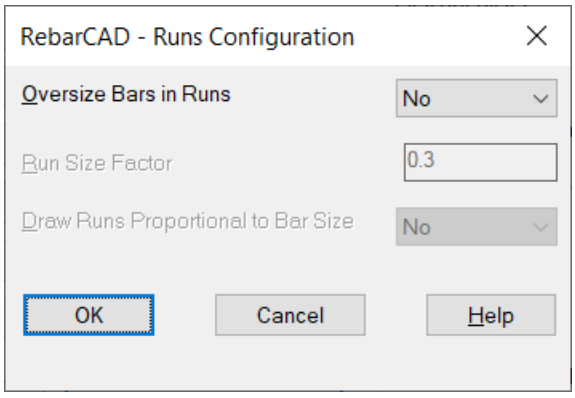



**Figure 8.4.16:1 Runs Configuration Dialog**

The options shown in the dialog are as follows: -

**Use Run Size Factor**

When set to Yes, bar runs are drawn to the plotted size entered in the Bar Size Factor option.

When set to No, bar runs are drawn to the exact bar diameter.

**Bar Size Factor**

Enter the plotted size for all bar runs regardless of diameter or drawing scale.

## 8.5 Coupler Configuration

The 'Coupler Configuration' dialog contains the configuration for coupler settings and annotation on both the drawing and Schedule.

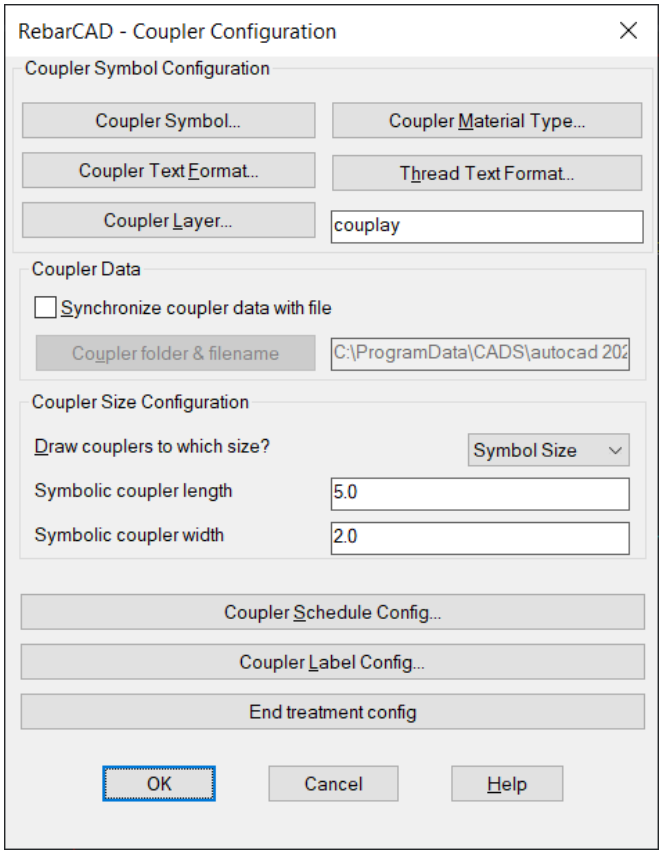



**Figure 8.5:1 Coupler Configuration Dialog**

The options shown in the dialog are as follows: -

## 8.5.1 Coupler Symbol

Accesses the Coupler Symbol Configuration dialog, as shown in the Figure 8.5.1:1. The dialog contains configuration for the coupler symbols used to indicate the coupled bars.

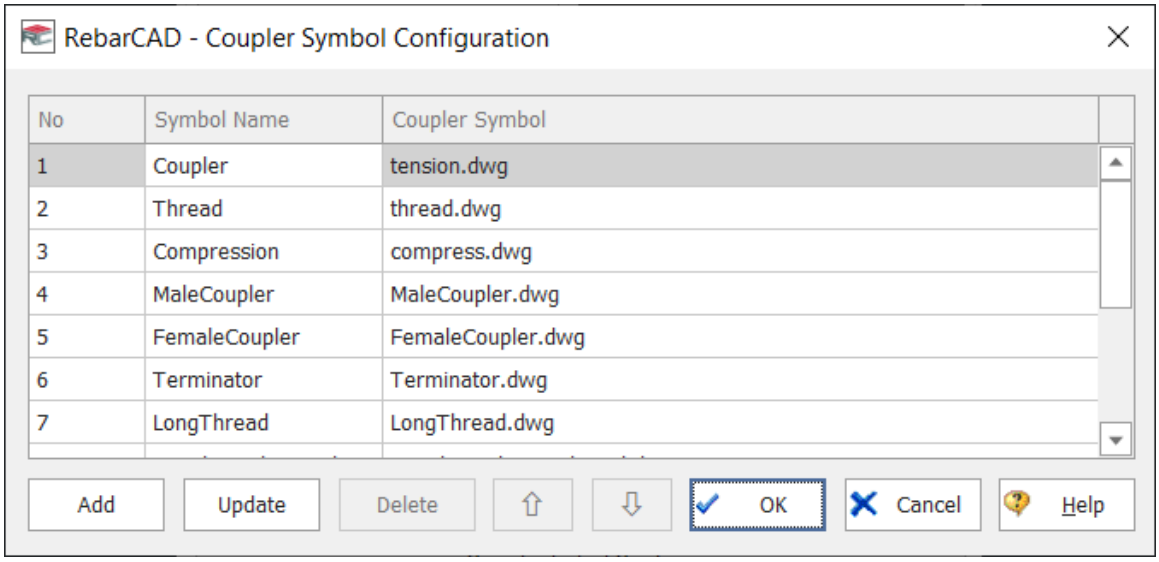



**Figure 8.5.1:1**

**Symbol Name**

The Symbol Name is the block name used to create the end treatment symbol which can be attached to the end of a coupled bar leg.

**Coupler Symbol**

The block name and path of the coupler symbol.

**Add**

Allows to add a new coupler symbol by browsing a block file name through a standard file selection dialog.

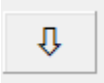
**Update**

Allows to update the selected coupler symbol, by browsing a block file name through a standard file selection dialog.

**Delete**

Allows to delete the selected coupler symbol.

Allows to move up the selected coupler symbol in the list.



Allows to move down the selected coupler symbol in the list.

## 8.5.2 Coupler Material Type

Accesses the Coupler Material Type Configuration dialog, as shown in the Figure 8.5.2:1. The dialog contains configuration for the coupler symbols used to indicate the coupled bars.

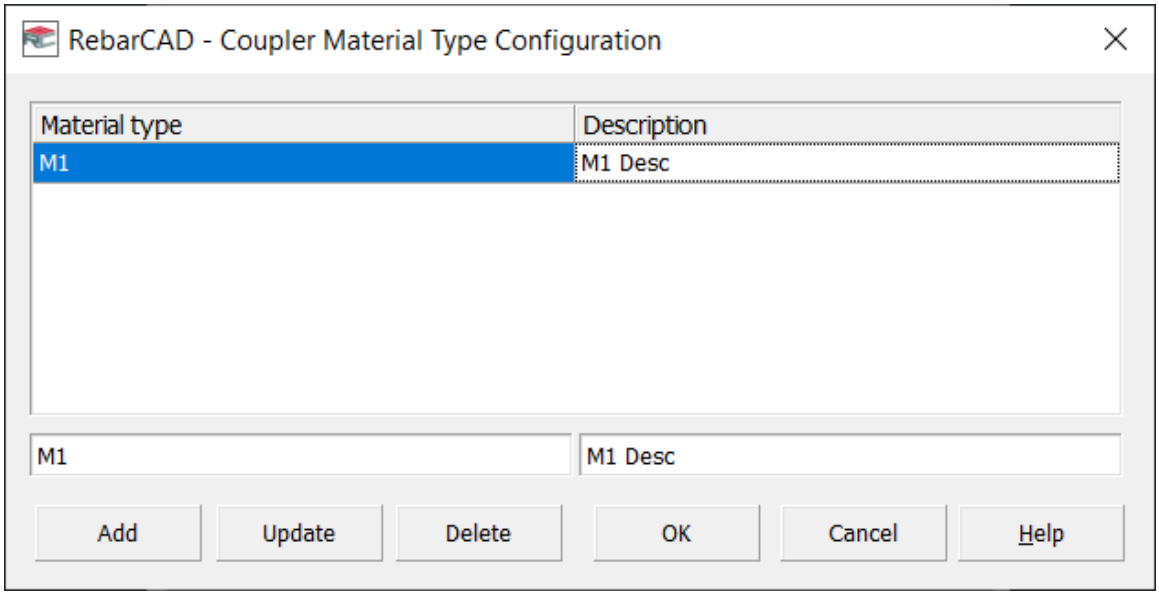



**Figure 8.5.2:1 Coupler Material Type Configuration Dialog**

**Add**

Allows to add a new coupler type.

**Update**

Allows to update the selected coupler material type.

**Delete**

Allows to delete the selected coupler material type from the list.

## 8.5.3 Coupler Text Format

The Coupler Text Formatting options (Figure 8.5.3:1) allows the user to control the layout and contents of the Coupler Labels. They are accessed by picking the Coupler Text Format button.

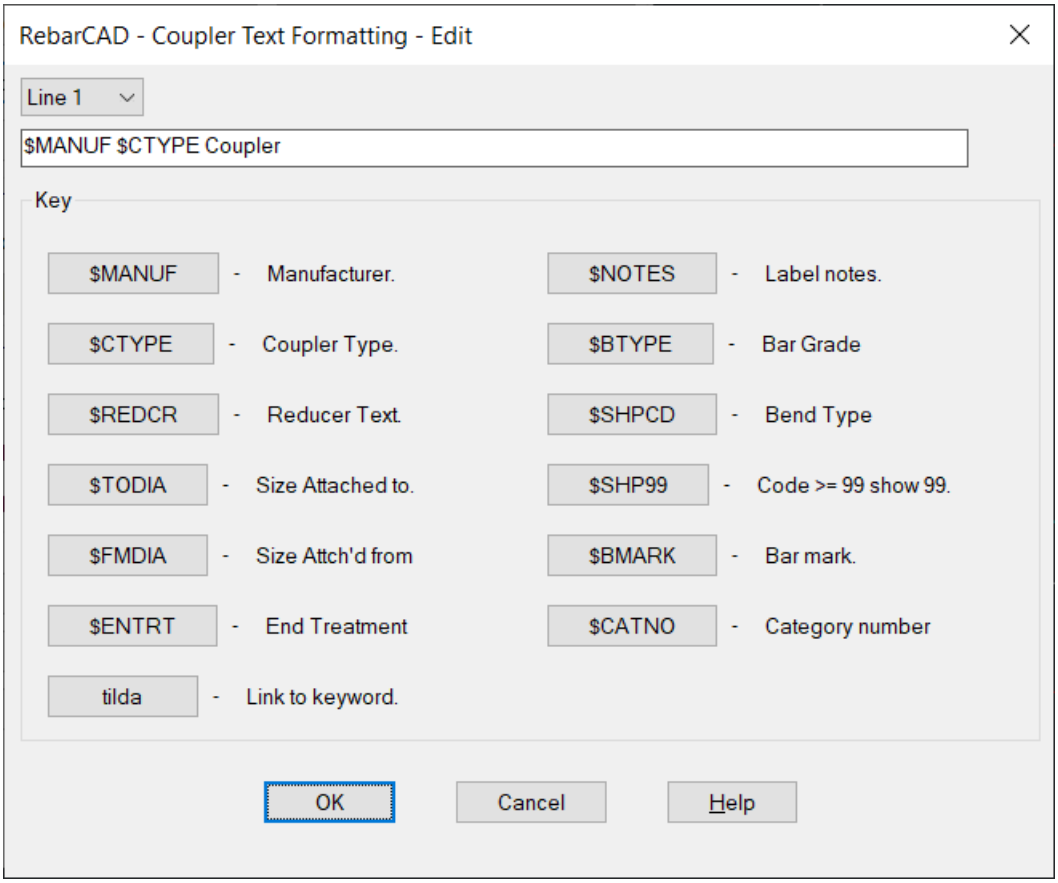



**Figure 8.5.3:1 Coupler Text Formatting Dialog**

For more information on setting up specific coupler text formats, please contact CADS Technical Support Department.

## 8.5.4 Thread Text Format

The Thread Text Formatting options (Figure 8.8.4:1) allow the user to control the layout and contents of the Thread Labels. They are accessed by picking the Thread Text Format button.

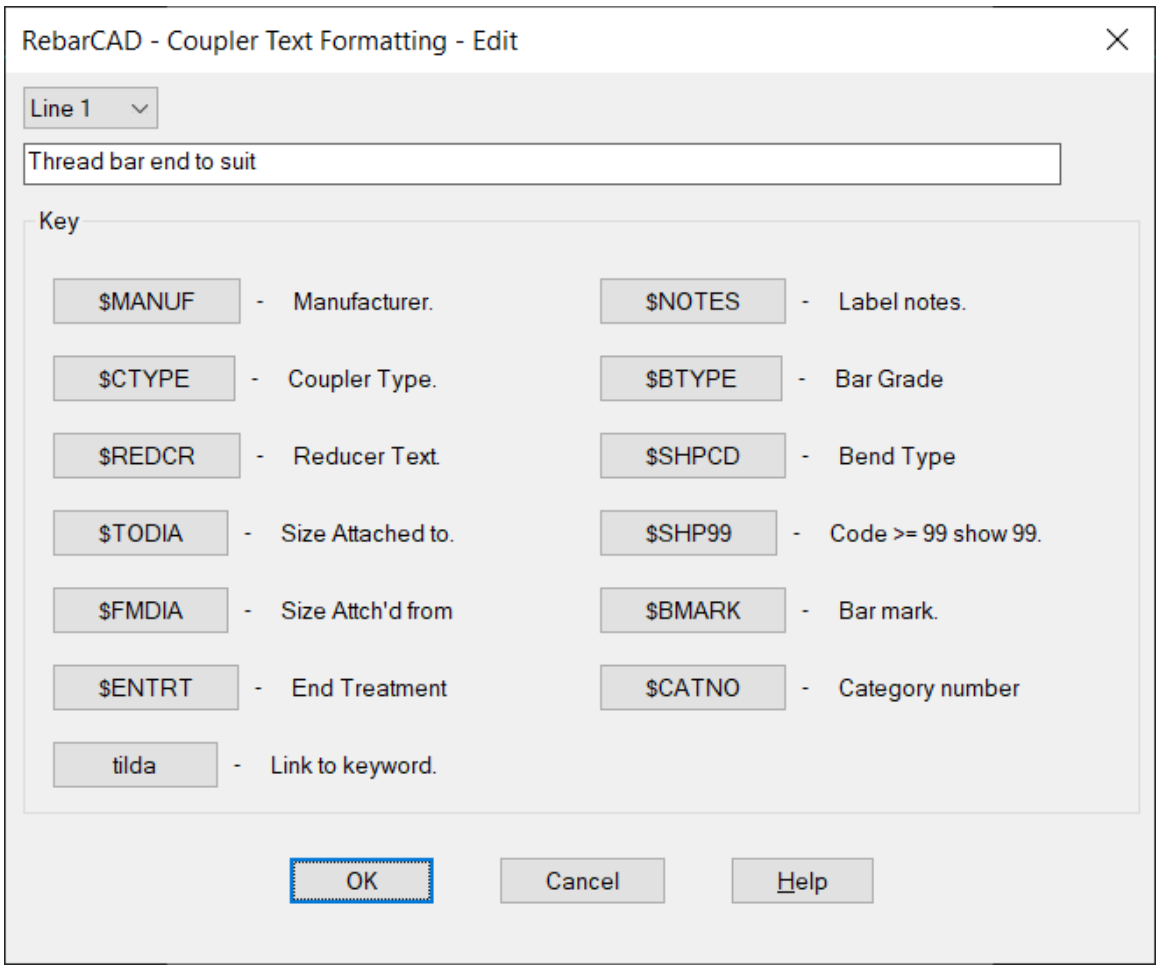



**Figure 8.5.4:1 Coupler Text Formatting Dialog**

For more information on setting up specific thread text formats, please contact CADS Technical Support Department.

## 8.5.5 Coupler Layer

This is the layer on which the coupler block is drawn when the Group Layering Option is OFF. The required layer can be typed into the field or the Coupler Layer button can be picked to invoke a standard layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

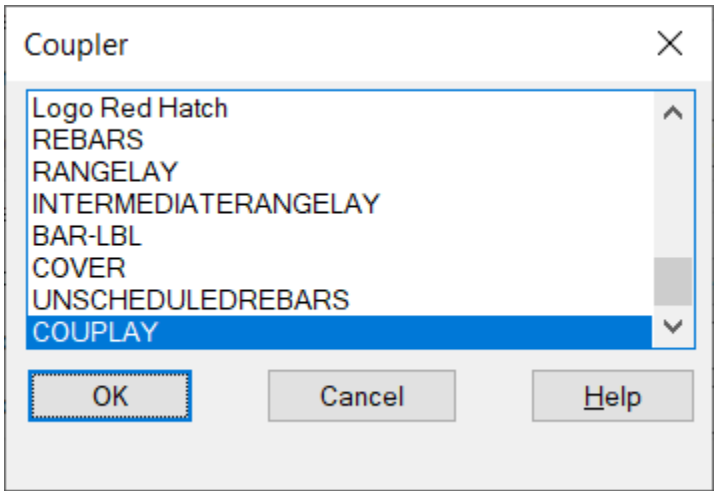



**Figure 8.5.4:1 Coupler Layer Configuration Dialog**

## 8.5.6 Coupler Data

Allows to configure the option to import coupler data from a file.

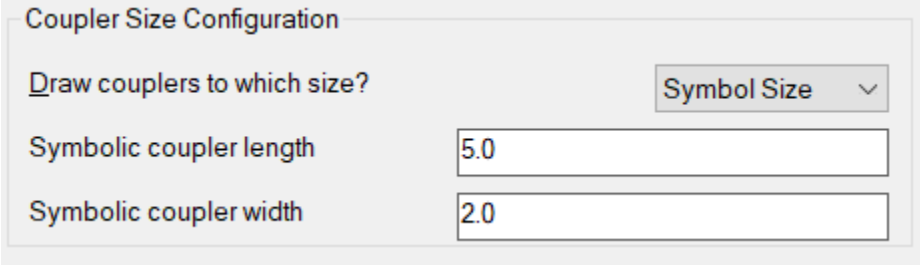
**Synchronize coupler data with file**

Ticking the option ON allows to import the coupler data from a file.

**Coupler folder & filename**

Allows to configure the filename from which the coupler data can be imported.

## 8.5.7 Coupler Size Configuration



## 8.5.8 Coupler Schedule Config

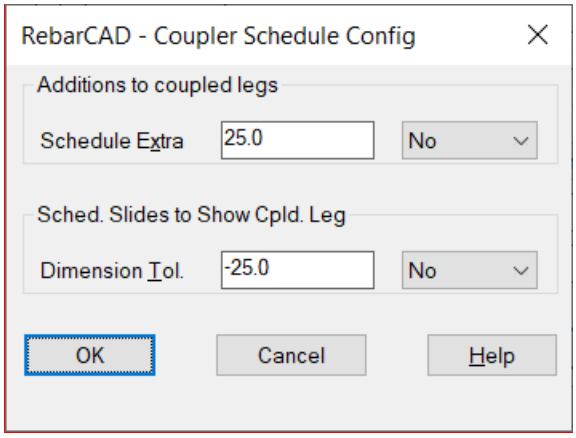



**Figure 8.5.8:1 Coupler Label Configuration Dialog**

## 8.5.9 Coupler Label Config

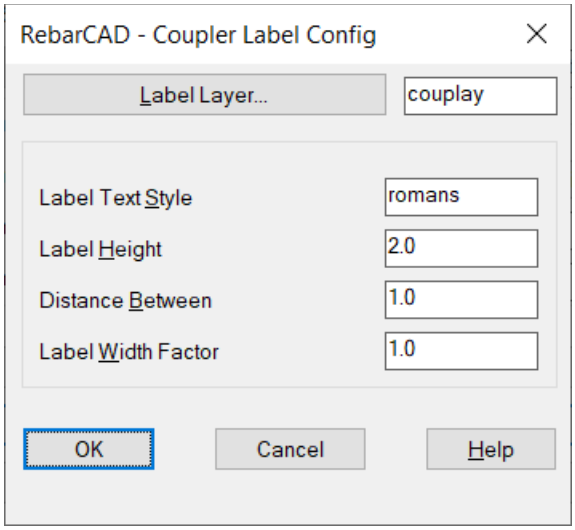



**Figure 8.5.9:1 Coupler Label Configuration Dialog**

**Label Layer**

This is the layer on which the Coupler Labels are drawn when the Group

Layering Option is OFF. The required layer can be typed into the field or the Label Layer button can be picked to invoke a standard layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

**Label Text Style**

This is the text style used for Coupler and Coupler Thread labels.

**Label Height**

This is the height of Coupler and Coupler Thread label text in plotted mm.

**Distance Between**

This is the distance in plotted mm between lines of text making up the Coupler and Coupler Thread labels. The distance is that required between the bottom of a line of text and the top of the text of the line below.

**Label Width Factor**

This is the width factor applied to Coupler and Coupler Thread label text.

## 8.5.10 End Treatment Config

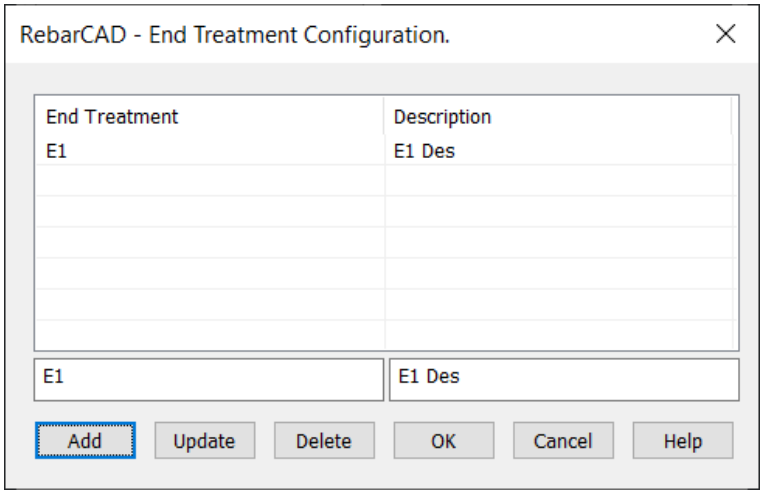



**Figure 8.5.10:1 End Treatment Configuration Dialog**

# 8.6 Miscellaneous Configuration

The ‘Miscellaneous Configuration' dialog contains general configuration options.

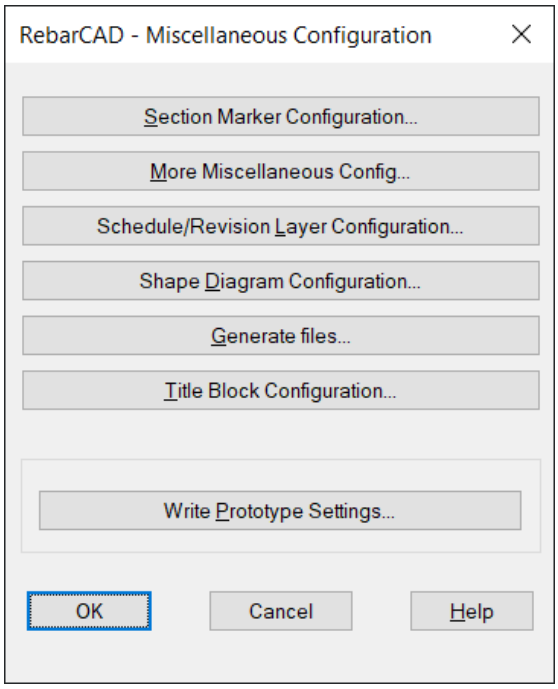



**Figure 8.5:1 Miscellaneous Configuration Dialog**

The options shown in the dialog are as follows: -

## 8.6.1 Section Marker Configuration

Accesses the Section Marker Configuration dialog shown in Figure 8.6.2:1.

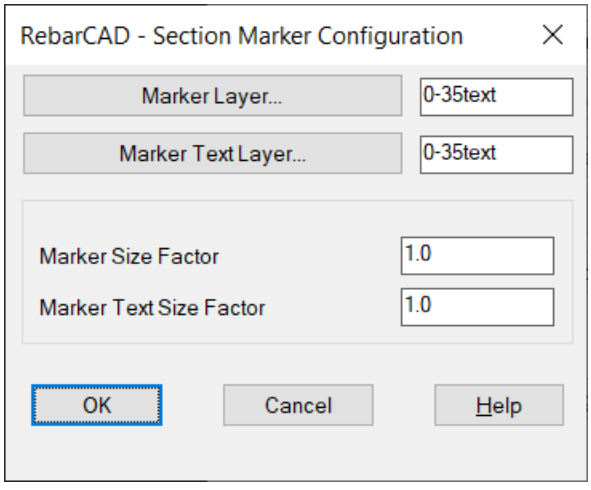



**Figure 8.6.1:1 Section Marker Configuration Dialog**

This configuration controls the size and layers used for the Section Markers available from the Tools & Symbols option.

**Marker Layer**

This is the layer the section marker symbol is placed on. The required layer can be typed into the field or the Marker Layer button can be picked to invoke a standard layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

**Marker Text Layer**

This is the layer the section marker text is placed on. The required layer can be typed into the field or the Marker Text Layer button can be picked to invoke a standard layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

**Marker Size Factor**

This is a size factor, which controls the drawn size of the section markers.

**Marker Text Size Factor**

This is a size factor, which controls the drawn size of the section marker text.

## 8.6.2 More Miscellaneous Configuration

Accesses the Miscellaneous Configuration dialog shown in Figure 8.6.3:1.

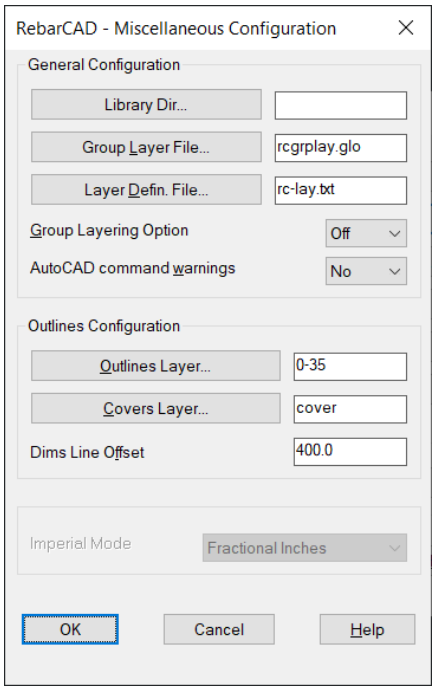



**Figure 8.6.2:1 Miscellaneous Configuration Dialog**

This configuration controls a number of general configuration options.

**Library Dir.**

This is the default path to where the Rebar Library reads or writes particular details. The required path can be typed into the field or by picking the Library Dir. Button the required path can be selected using a standard path selection dialog.

**Group Layer File**

This is the file which describes layer groups to appear on the side menu. The required file can be typed into the field or by picking the Group Layer File Button the required file can be selected using a standard file selection dialog. This file is only used if the Group Layering Option is ON.

For more information on the Group Layering Option, see Chapter 6.

**Layer Define File**

The 'Layer Definition File' describes how layers are created. This file requires editing when the GLO file has been changed. The required file can be typed into the field or by picking the Layer Define. File Button the required file can be selected using a standard file selection dialog.

For more information on the Group Layering Option, see Chapter 6.

**Group Layering Option**

Set to 'On' if the Group Layering Options are required.

AutoCAD command warnings

Not required in this version.

**Outlines Layer**

This is the layer on which the outlines of any RebarCAD Outlines are placed. The required layer can be typed into the field or the Outlines Layer Button can be picked to invoke a layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

**Cover Layer**

This is the layer on which the cover lines of any RebarCAD Outlines are placed. The required layer can be typed into the field or the Cover Layer Button can be picked to invoke a layer selection dialog where the required layer can be selected from a list displaying the current drawing layers.

**Dims Line Offset**

The distance that the dimensions are drawn away from the outline of any RebarCAD Outline. This value is in DRAWING UNITS.

**Imperial Mode**

This configuration option is available when feet/inch units are in use and it determines whether fractional or decimal inches are to be used.

### 9.9.4. Write Prototype Settings

This allows you to write out a new .ini file to the hard disk, which will contain any changes made to the configuration. This will mean that any new drawings started

subsequently using the comparable .def file will have the new .ini file configuration as default settings.

## 8.7 Support Files

RebarCAD uses 5 support files to determine the shape codes, bar types, bar bending rules etc. to be used. Support files can be configured via the RebarCAD Support File dialog, as shown in Figure 8.7.:1.

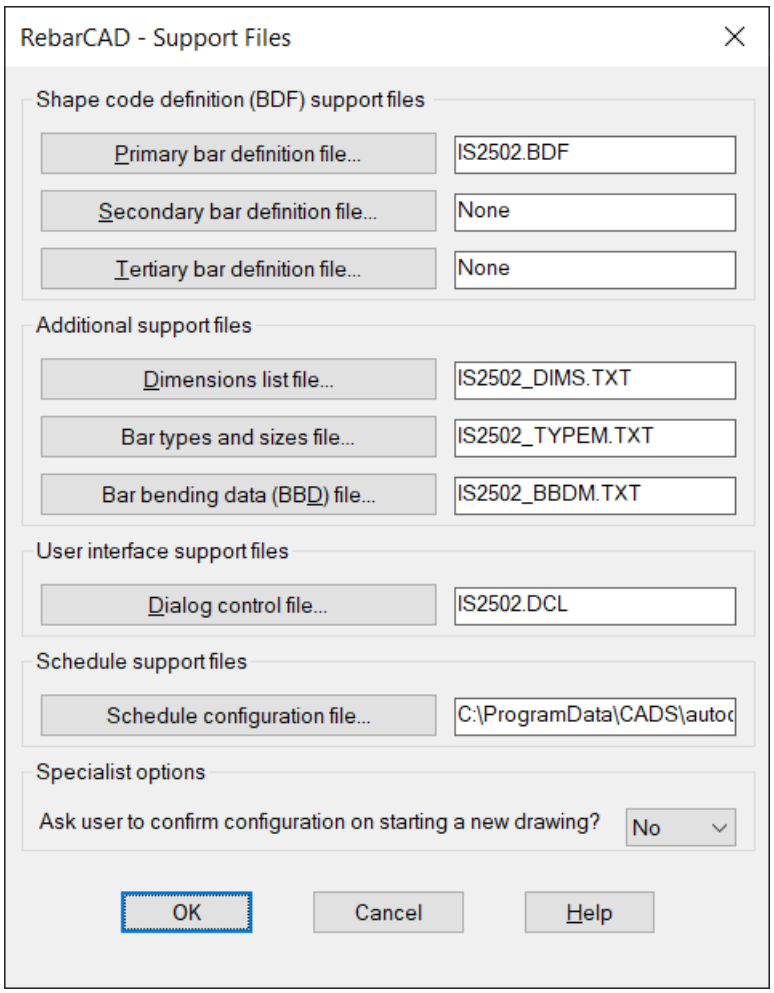



**Figure 8.7:1 Support File Dialog**

## 8.7.1 Bar Dims Txt Files

This is the file which specifies the dimension names that are to be used within RebarCAD.

RebarCAD can handle up to 25 dimensions, each with different names of any length.

Dimension names can be anything, e.g. A, B, C etc. or A1, A2, A3 etc. or Peter, Piper, Pecked etc. Basically, anything that is required.

The total number of lines in the file depicts the total number of dimensions that are used within RebarCAD. Again, 25 is the limit.

It is advised not to change this file, as it is the base file from which all other support files work. Changing this file would require changing the Configured Def file, the Bar Bending Data File (BBD) and also the Bar Description File (BDF).

## 8.7.2 9.10.2. Bar Grades File

This file describes the different Bar Steel Grades available to RebarCAD.

There is no limit to the number of different bar grades available to RebarCAD. Bar Grades are specified by declaring the '**' keyword before the actual name of the Bar Steel Grade. e.g.:

**T

{

}

This will declare a new Bar Steel Grade of grade 'T'.

RebarCAD uses many variables that are declared in each Bar Steel Grade, these are as follows:

| | | |
|---|---|---|
| Description | - | This is a written description of the Bar Steel Grade |
| bargrade_id | - | This is used when a Bar Steel Grade is the same, in data, as another Bar Steel Type. For instance, in the UK types T and R control the rules for bending, all types other than R use type T's bending rules. |
| ProdGrade | - | This is used in the USA/Canada and is the Production Grade for the Production File Output. |
| Sizes | - | A string containing a comma separated list of available sizes. |
| AltSizes | - | A string containing a comma-separated list of Alternate sizes. This is used when, for instance, a drawing has been drawn in Imperial and |

needs to be output as Metric. The string must be in the same order as the Sizes list.

| | | |
|---|---|---|
| DrawnDia | - | The Drawn Diameter of the bar. This is again a comma- separated list which must be in the same order as the Sizes. |
| NominalDia | - | The Nominal Diameter of the bar. This is again a comma- separated list which must be in the same order as the Sizes. |
| Weight | - | Cross Sectional Weight of the Bar. This is again a commaseparated list which must be in the same order as the Sizes. |
| LAPDATA$??? | - | A string containing a comma-separated list of available laps. The user may add as many LAPDATA's as is required. The '???' specifies the name of a specific Lap. Again, this is a comma-separated list which must be in the same order as the Sizes. |
| LengthMax | - | A string containing the maximum length for a particular size of bar. This is again a comma-separated list which must be in the same order as the Sizes. |
| BlockName | - | This variable specifies the block which can be inserted onto a label using the $TBLCK keyword in the label format configuration. If only a block name is specified e.g. "c:\tmp\block", then this will be inserted for every size. If a comma-separated list is supplied, then in the order in which the Sizes are specified, the blocks will be inserted for each size. |

The user may also add additional variables which can be referenced in other support files.

## 8.7.3 Bar Bending Data File

This file sets up the different Bending rules for a bar. The file is processed many times and for this reason it has been built into RebarCAD as compiled code rather than interpreted code (file).

RebarCAD checks the size of the Bar Bending Data (BBD) configured, if the file is the same size as the size that is recorded in the executable, then the internal compiled BBD is run. If the file size is different, then the configured BBD File is interpreted. The user can force the BBD File to be interpreted by configuring 'Use Fast BBD' to No in the Bar configuration.

If the user does see a need to change the BBD File, then for speed, the code must be written as efficiently as possible.

## 8.7.4 Bar Shape Codes File

This file describes the different Bar Shape Codes available to RebarCAD.

There is no limit to the number of different Bar Shape Codes available to RebarCAD.

There is no limit to the number of different Views of a particular Bar Shape Code. Bar Shapes are specified by declaring the '**' keyword before the actual name of the Bar Shape Code. e.g.

**20 - Side:

The Side view is the master view.

The user may create different views of the same shape by defining:

**20 - Left:

New shapes can be derived from existing shapes to save effort:

**20 - Left:**32 - Right:**34 - Right:

Deriving new shapes from 'Side' views is not allowed and will cause undesired effects.

Warning - It is a very complex file and only very experienced users should change it. If you require new shapes, then simply use the BarGen program to create them.

## 8.7.5 Dialog Control File

The Dialog Control file controls the appearance and contents of all dialogs within RebarCAD.

For more information on setting up specific dialog control files, please contact CADS Technical Support Department.

# 8.8 Global / General Configuration

The Global / General Configuration option allows access to all configuration variables used by RebarCAD via the RebarCAD Global Configuration Centre dialog, as shown in Figure 8.8:1.

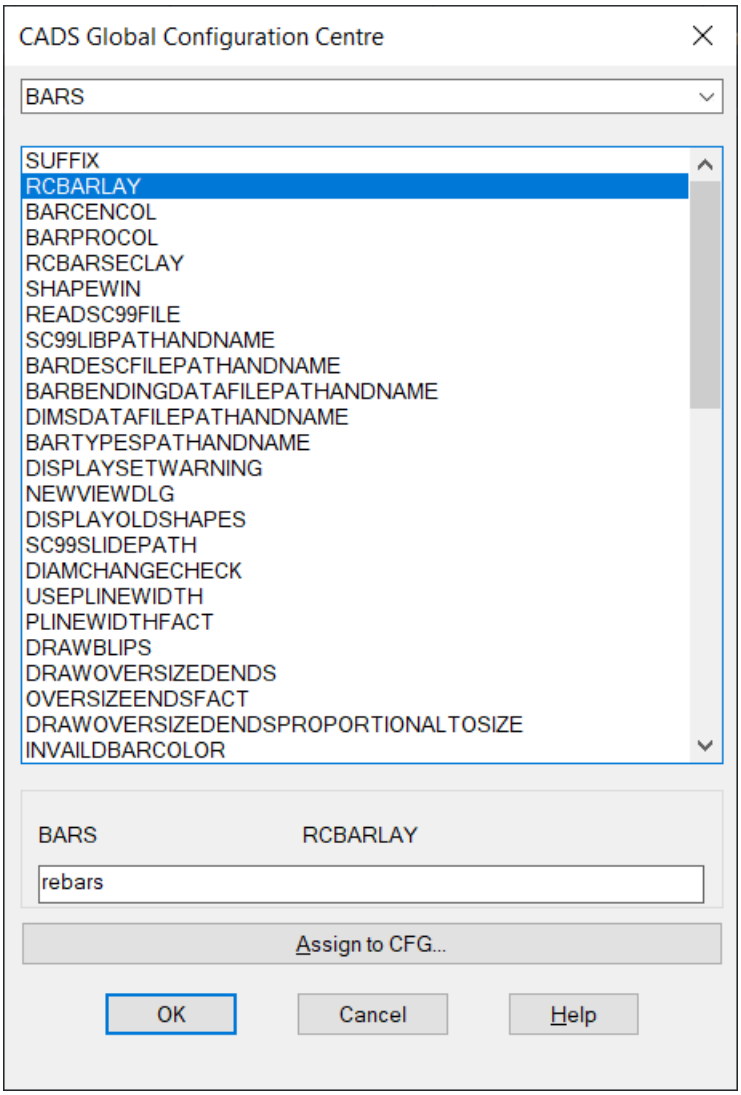



**Figure 8.8:1 Global Configuration Centre Dialog**

Individual configuration item values can be viewed by highlighting the configuration item in the scrolling list. The current value is displayed in the input field at the bottom of the dialog. Values can be changed by entering the required value in the input field and then picking the Assign to CFG button. New values will only be assigned if the Assign to CFG button is picked and will only apply to the current drawing. Changes made which are to be permanent changes for all new drawings must be assigned to the .ini file by using the Write Prototype Settings option described earlier in this chapter. A full listing of all RebarCAD configuration items can be found in Appendix F.

# 8.9 Change Configuration

Menu Option Change CFG File

Command Line cads_rc_cconfig

Toolbar 

RebarCAD configuration files (.def file extension) can be selected from the Configuration File Selection dialog, as shown in Figure 8.9:1.

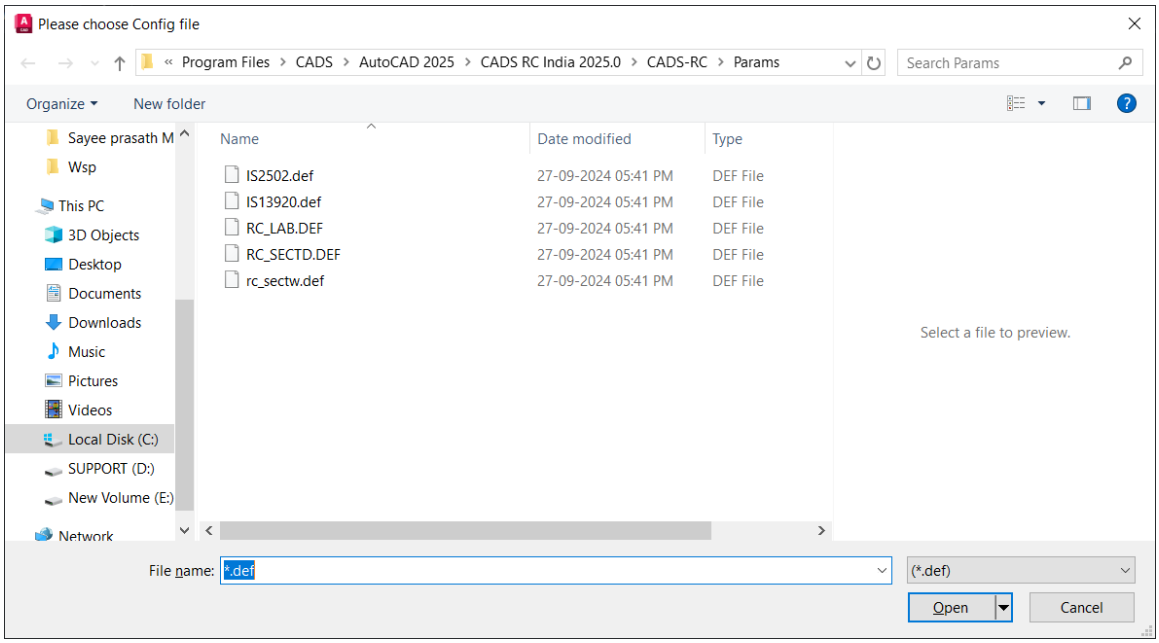



**Figure 8.9:1 RebarCAD Configuration File Selection Dialog.**

For more information on RebarCAD configuration files, refer to Appendix F.

# 9 Utilities

**Chapter Objectives**

This chapter describes the Utilities section of RebarCAD, which contains Auditing and Bar Matching tools.

The UTILITIES options are to be found off the RebarCAD pull down menu UTILITIES menu bar where there are the following options:

## 9.1 Highlight Bars

Menu Option Utilities -> Highlight Bars

Command Line cads_rc_highlight

Toolbar 

## 9.2 Select Bars

Activates the PICK GROUP TO HIGHLIGHT dialog where options are available to highlight bars by view, set, mark, release code or all RebarCAD entities. There is an option to leave the selected items highlighted or not.

Menu Option Utilities -> Select Bars

Command Line cads_rc_select

Toolbar 

The Select Bars command will place items into AutoCAD's 'previous selection set'. This allows, for example, all occurrences of a particular bar mark to be selected and moved using AutoCAD move 'previous' so that they can be looked at easily.

On picking Select Bars, the PICK GROUP TO SELECT dialog is activated where options are available to select bars by view, set, mark, release code or all RebarCAD entities.

## 9.3 Drawing Audit

Menu Option Utilities -> Auditing -> Drawing Audit

Command Line cads_rc_audit

Toolbar 

The Drawing Audit command checks the drawing for the following

**Incomplete Bar Sets** - Bars which have incomplete bending data or bar sets where the number of bars not yet specified will be highlighted. (Bars are highlighted by a change of colour to magenta or by ghosting the entities).

**Un-labelled Bar Sets** - Bars Sets which have not had their label placed on the drawing will be highlighted. (Bars are highlighted by a change of colour to magenta or by ghosting the entities)

**Bar to be Purged from the Schedule** - Bars which have had all their views erased will have their schedule entries Purged (erased from the schedule).

## 9.4 Check RC Database

Menu Option Utilities -> Auditing -> Check RC Database

Command Line cads_rc_audit3

Toolbar 

The Check RC database facility checks every RebarCAD entity on the drawing to see if it is correctly linked to the schedule and if the schedule is correctly linked to it. It also checks the schedule indexes for validity.

When Check RC Database is being run, a percentage complete message is displayed at the top of the dialog to indicate how much checking is left. If it finds any errors while checking, it adds these errors to the scrolling list so that they may be viewed by the user. If any errors are found (see below), then the next operation will be determined by an OK selection or a Cancel selection.

10-1

If OK, then the entities that are not linked to the RebarCAD database are corrected if possible. Any remaining unlinked entities are placed into AutoCAD's 'Previous' selection set. These can be moved off the drawing by typing 'P' for previous selection set when prompted to select objects whilst using the AutoCAD move command.

If Cancel then no highlighting or any corrections are carried out. Any damaged items are put into AutoCAD's 'PREVIOUS' selection set.

When Check RC Database finds an entity which is not linked to the schedule, i.e. it has the relevant data on the entity but the indexes into the schedule are invalid, then this means that the particular entity is definitely lost and must be redrawn. For example, this would occur if RebarCAD was 'killed' before a save or when out of disk space or memory. These entities are known as 'Damaged items'.

When Check RC Database finds an entity which is linked to the schedule correctly but the schedule does not know about it, then the Check Rebar database function will attempt to regenerate the entity using the raw data held within the schedule database. When it does this, it simply adds the entity to the list of view records held within the schedule, thus making it into a new view. Check RC Database can only do this with Bars/Range lines and, if the set is not already labelled, bar labels. These entities are known as 'Non-Linked Rebar entities'.

**Prompts**

'Bar set <??> already labelled, deleting duplicate' this prompt appears when the Bar Label in question already has a label associated with the set.

'Attempting Repair on non-linked Rebar entity, handle '???' ' this prompt appears when a RebarCAD entity (not a bar label) is linked to the database but the database is not linked to the RebarCAD entity. Repairs can only be carried out on Bars/Bar Labels (if not labelled already) and Range lines. All other RebarCAD entities will not be repaired and require deleting and redrawing.

## 9.5 Match Bars

Menu Option Utilities -> Match Bars

Command Line cads_rc_audit2

Toolbar 

The Match Bars command searches the drawing for identical bars which are allocated different bar marks. The user is given the option to match bar marks along with the bar mark to retain.

Match Bars can be configured to match straight bars where the difference in bar length is less than or equal to the value entered in 'StraightTolerance' in the Bar > Rounding/Match Bars configuration options. (See also chapter 8 - Enquiry).

## 9.6 Compact Bar Marks

Menu Option Utilities -> Compact Bar Marks

Command Line cads_rc_compact

Toolbar 

The compact bar marks options re-assigns bar marks so that any gaps found in the bar markings are removed. Using compact bar marks after match bars, ensures that the most efficient use of bar marks is achieved.

## 9.7 Redraw RC Entities

Menu Option Utilities->Redraw RC entity

Command Line cads_rc_redraw

Toolbar 

This command is used to force RebarCAD to re-draw the picked items as if newly created.

## 9.8 Sketch Mode

Menu Option Utilities->Sketch Mode

Command Line cads_rc_bset

When Sketch Mode is set to ON, only bar labels are drawn as intelligent RebarCAD entities, all other RebarCAD entities are drawn as normal AutoCAD entities with no link to the schedule database.

# 10 Special Bars

**Chapter Objectives**

This chapter describes the Special Bar options within RebarCAD.

## 10.1 Overview

RebarCAD provides 2 special bar options.

- Over 30 predefined special bars are supplied in addition to the standard shape codes. The special bars supplied with RebarCAD are available for selection from the standard shape code list and have the same detailing and editing functionality as the standard shape codes;
- Quick 99 option which allows the user to create special bars by drawing the required shape on the drawing. The user can define the length calculation required and create a fully dimensioned shape slide for inclusion on the schedule printout.

Note: Rctoolbox Macros include “Special Bar” macro which makes the process of creating Special Bars easier.

## 10.2 Quick Special Bar Option

The Quick Special Bar option is available for use in the bar drawing dialog. Shape Codes created by the Quick Special Bar option can be saved to a specials .spl file for use on subsequent drawings. They are saved only on the drawing as required. An input field has been provided beside the Shape Code List where the user may enter the Special Bars shape code name’ (e.g. 99C01) required as shown in Figure 13.1.

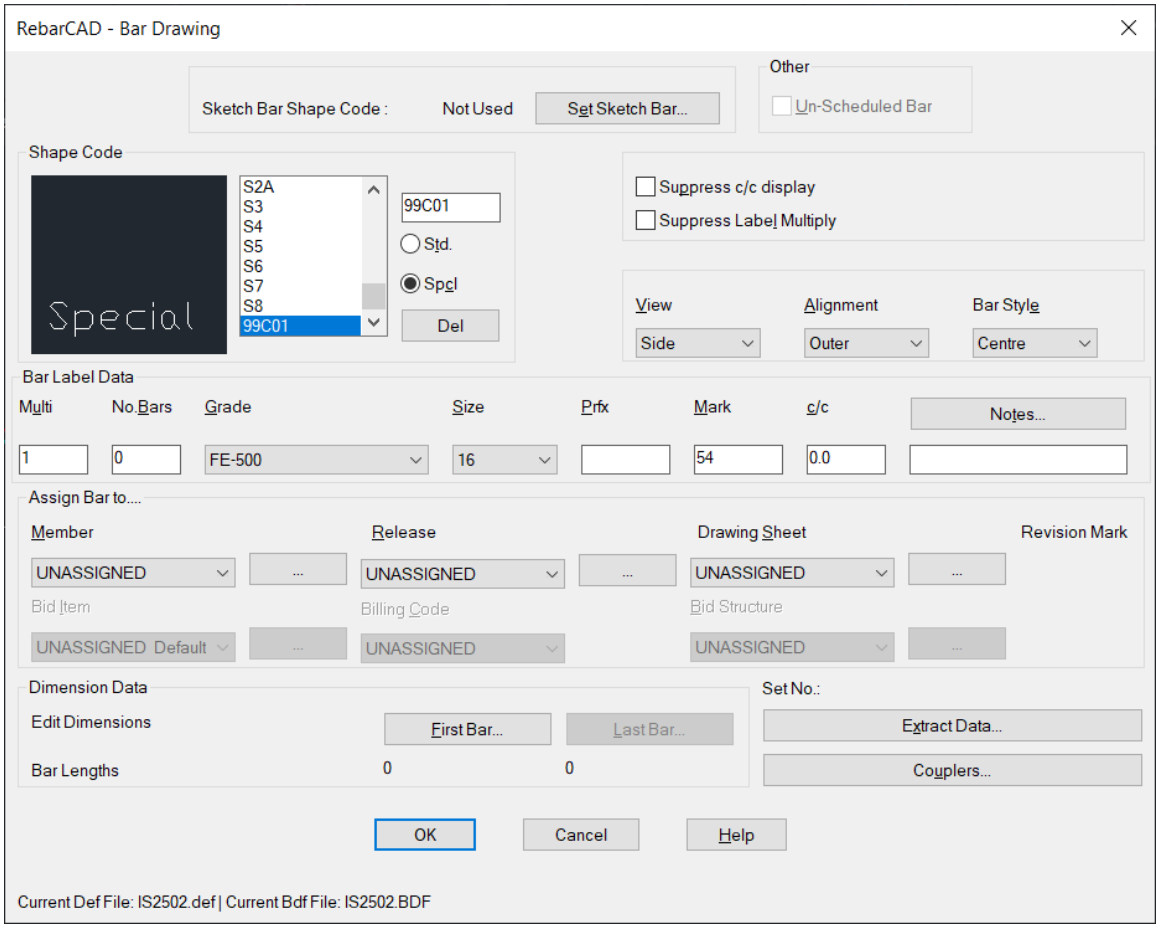



**Figure 12.2:1 Bar Drawing dialog**

Picking on the 99 check box below will prompt if a special bend with this ‘shape code name’ is to be created. If Yes is chosen, then the shape code name is added to the shape code list.

The required Dimensions etc. for this shape code can then be defined in the Dimensions dialog. This dialog, as shown in Figure 13.2, is different to that shown for standard shape codes.

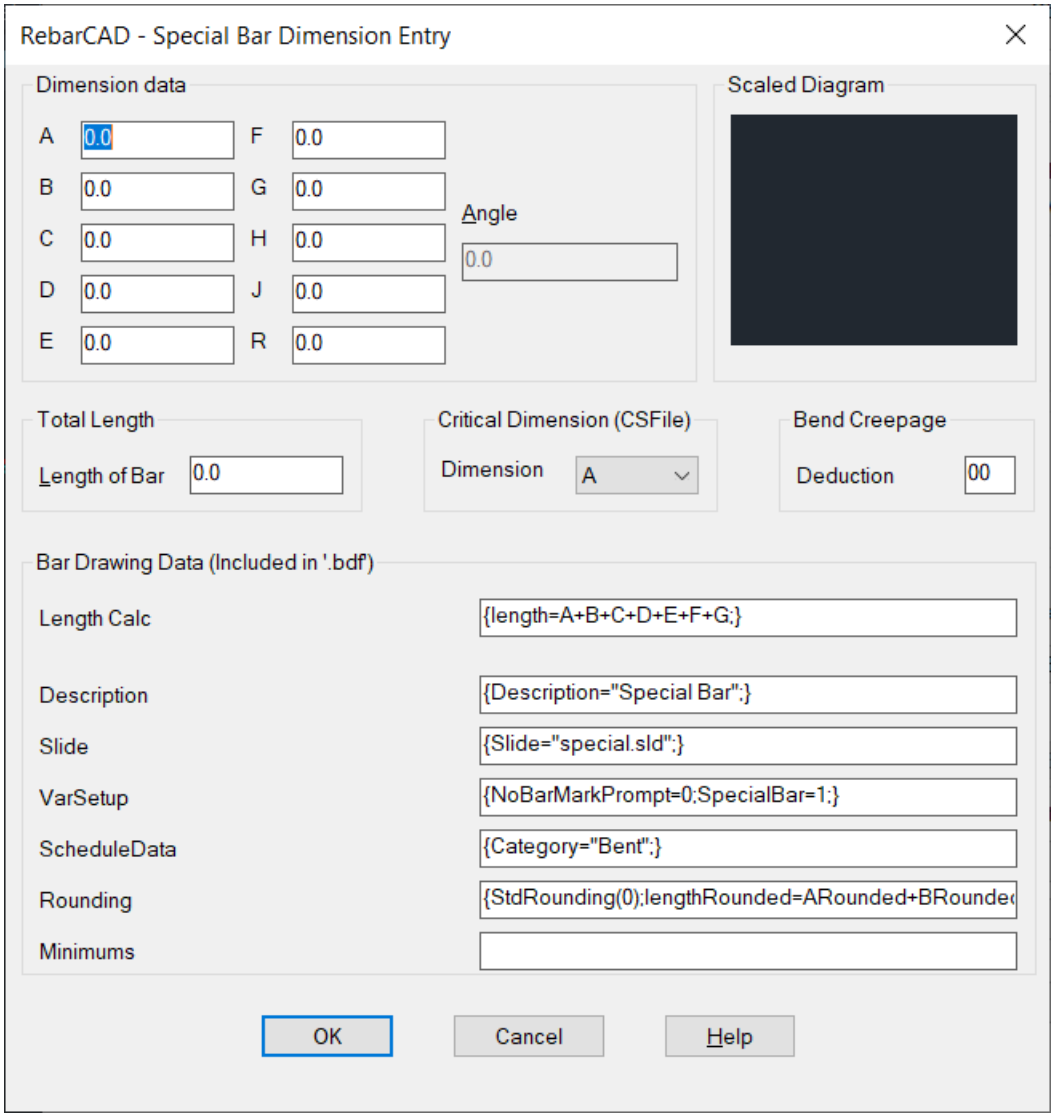



**Figure 12.2:3 Special Bar Dimensions dialog**

The options available in the Special Shape Code 'Dimensions' dialog are as follows: -

Dimension Data - All dimensions A through to J are available for use. The length of bar required is calculated from the length calculation defined below, but can be edited to any value. If the length is edited to a value different to that calculated and the bar is edited later using Edit Bar / Label, the length will be re-set to it's calculated value.

**Length Calc**

The default length calculation 'A+B+C+D+E+F+G' but can be edited by the user to add or remove dimensions, include fixed values (+ ½ ", - 25 etc.), or any valid expression such as (-2*barrad), (-4*bardia).

**Description**

This is printed at the bottom of the Bar Drawing and Bar Editing dialogs when the shape code is selected.

**Slide**

This is the AutoCAD slide name which is displayed when the shape code is selected. If a slide is created during the bar drawing process then that slide will be used in preference.

**VarSetup**

Contact CADS Technical Support Department for more information on this option.

**ScheduleData**

Contact CADS Technical Support Department for more information on this option.

**Rounding**

Contact CADS Technical Support Department for more information on this option.

**Minimums**

Contact CADS Technical Support Department for more information on this option.

The Quick Special Bar option only calculates bar leg dimensions automatically (Figure 13.3 dimensions B, C and D). Bend crank dimensions, such as dimension E on the example shown in Figure 13.3 below, must be entered manually.

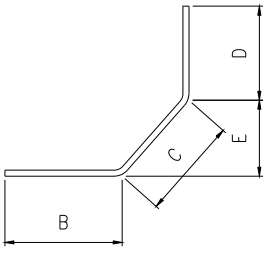



**Figure 12.2:4 Example Special Bar**

If it is intended to use the automatic slide creation option within Quick Special Bar, to ensure that any bend crank dimensions (Figure 12.2:4 dimension E) or overall bar dimensions are included in the slide, they must be flagged as being in use by entering an arbitrary value in the relevant 'bar data -> First Bar' dimensions field prior to exiting the bar drawing dialog and drawing the shape code.

## 10.3 Quick Special Bar Example

This section is a step by step guide to creating the Special Bar shown in Figure 13.3 with a shape code name of 99C01. As Quick special bars can be quite complicated, RebarCAD does not allow Outer or Inner faces to be defined when drawing the bar. The centre line of the bar must always be defined. There is also no support for left, right or plan views. These views are achieved by using the sketch bar option.

To ensure that any slide created is clear, it is best to create the shape code off the drawing sheet so that only the bar shape and dimensions are included in the slide. Once created, the bar can be deleted but it remains available for selection in the shape code list where it can be used to detail the actual bar required.

The procedure is as follows: -

Select the RebarCAD command Draw Bar -> New Mark.

In the Bar Drawing dialog, enter 99C01 in the input field adjacent to the shape code list and pick the 99 radio button below. If a shape code with that shape code name exists, it will be selected for use, otherwise you are asked to confirm that you wish to create a special bar with that bend name. Selecting Yes will create the special bar in the shape code list.

As the special bar we are creating has a crank dimension, we will flag this dimension as used by picking the First Bar dimension data button.

The Special Bar Dimensions dialog is displayed as shown in Figure 13.2. Enter an arbitrary value for dimension E (e.g. 4”), we can also define the required length calculation (e.g. {length=B+C+D;} ) and Rounding (e.g. StdRounding(0);lengthRounded=BRounded+CRounded+DRounded;

StdRounding(1);} ).

Exit the dimensions dialog via the OK button.

Exiting the bar drawing dialog via the OK button will prompt ‘Do you want to be able to draw 99C01’ - Select Yes. A further prompt ‘Do you want to create a slide for 99C01’ is displayed - Select Yes.

The command line will prompt

Allow individual dimension selection <No> :

If you enter No to this prompt, then RebarCAD will allocate each bar leg drawn the next dimension suffix automatically. In the above special bar, we need to control the allocation of dimension suffixes as we wish to specify the crank height as E and the leg dimensions as B, C and D. We will therefore enter YES to the Allow individual dimension selection <No> : prompt.

You will then be prompted:

Centre start point: which can be selected in any AutoCAD manner.

You will then be prompted:

Enter next dimension or ENTER to quit <A>:

as the first leg we are going to specify is dimension B, enter B at the command line.

You will then be prompted:

Enter next dimension or ENTER to quit <B>:

Enter @2'<0 to draw leg B 2' to the right.

You will then be prompted:

Enter next dimension or ENTER to quit <A>:

as the second leg we are going to specify is dimension C, enter C at the command line.

You will then be prompted:

Enter next dimension or ENTER to quit <C>:

Enter @1'-6" <45 to draw leg C 1'-6" at an angle of 45 degrees.

You will then be prompted:

Enter next dimension or ENTER to quit <A>:

as the third leg we are going to specify is dimension D, enter D at the command line.

You will then be prompted:

Enter next dimension or ENTER to quit <D>:

Enter @3'<90 to draw leg D 3' at an angle of 90 degrees.

You will then be prompted:

Enter next dimension or ENTER to quit <A>:

As leg D is the last on the bar press Enter to complete the bar drawing process.

You will then be prompted:

Pick first corner of zoom window:

You are now asked to define a zoom window which will be used to determine the slide area. With this in mind, pick a zoom window which allows for the placement of dimensions etc. When the zoom window has been defined, you will be prompted:

Place text for dimension B:

Pick the lower left insertion point for the dimension B.

You will then be prompted:

Place text for dimension C:

Pick the lower left insertion point for the dimension C.

You will then be prompted:

Place text for dimension D:

Pick the lower left insertion point for the dimension D.

You will then be prompted:

Place text for dimension E:

Pick the lower left insertion point for the dimension E.

You will then be prompted:

Draw line(s) by picking start point <Escape>:

You may now draw any lines to indicate the dimension points. On completion of drawing any lines required, press Enter to finish.

You are then presented with a standard file selection dialog defaulted to the ??\CADS-RC\PARAMS folder. Enter in the Filename\Pattern field the slide name for use on the schedule. Enter 99C01 (placing the schedule in the default directory with a name the same as the bend name will ensure the slide is automatically attached by the attach diagram option).

The slide is then created and you are prompted to label the bar as required.

All that remains is to determine the actual value of any crank/offset dims and enter the required dimension using bar/label edit.

New sets or marks of shape code 99C02 can now be created as the shape code is available from the shape code list.

NOTE - Only side views using centre alignment can be drawn. Any left, right or plan views required must be created using the sketch bar option or AutoCAD lines.

# 11 Couplers

**Chapter Objectives**

This chapter describes the scope and use of the RebarCAD ERICO Lenton, MSP MacAlloy 500 and Annotate Coupler library facilities.

## 11.1 Overview of the RebarCAD coupler facility

The RebarCAD coupler facility allows bars with couplers or coupler threads to be easily detailed and added to the schedule in a logical manner. To enable coupler data to be controlled, some basic rules have been incorporated into the RebarCAD coupler facility.

### 11.1.1 Add/Edit Coupler

Menu Option Couplers->Add/Edit Coupler

Command Line: cads_rc_coupler

Toolbar 

The Add/Edit Coupler command is selected from the Coupler sub-menu and is used for adding, editing or removing couplers and threads from individual bars via the RebarCAD Coupler dialog (Figure 14.1).

NOTE - The Add/Edit Coupler command adjusts the leg dimension based on selected End conditions wherever applicable.

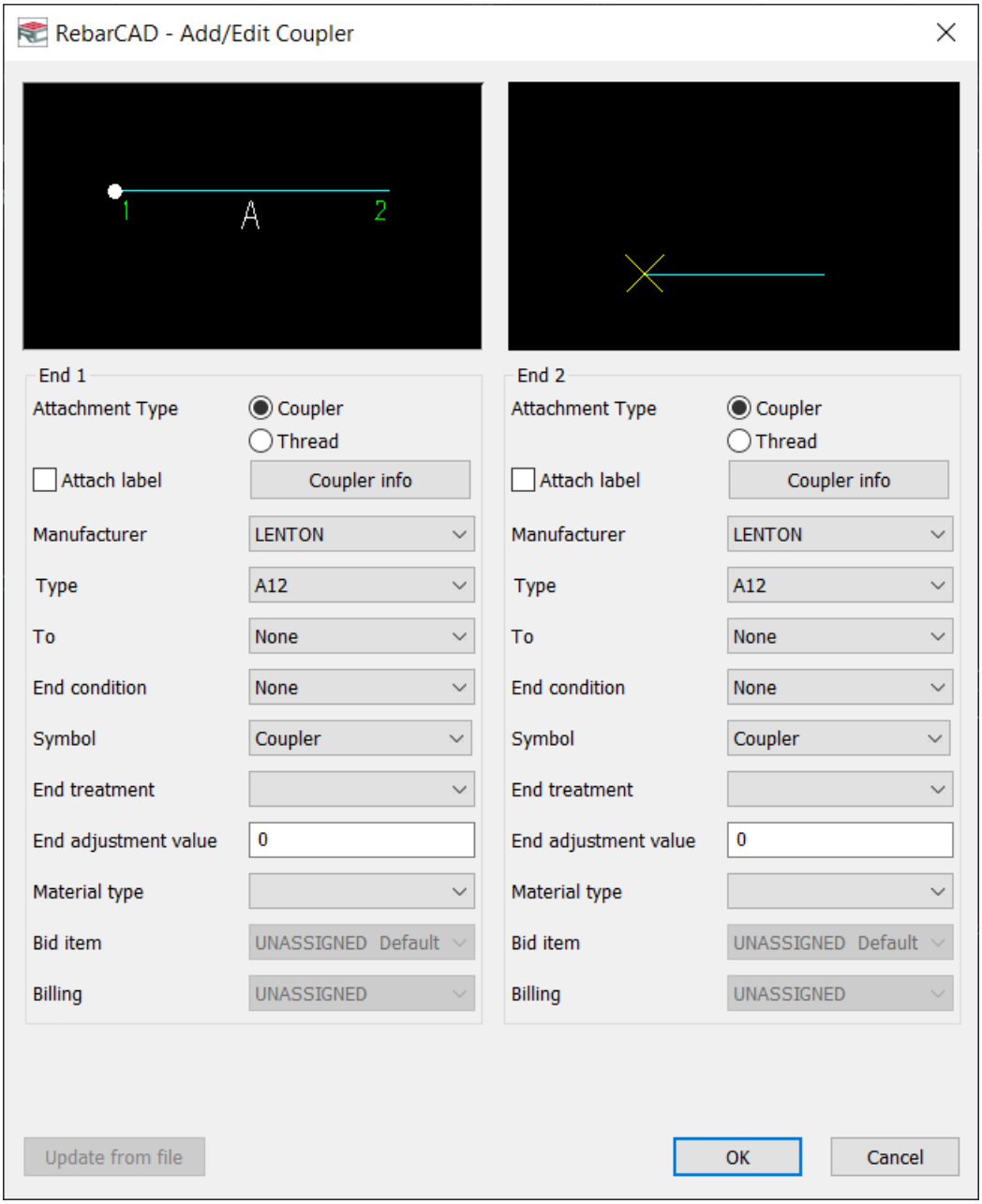



**Figure 13.2.1:1 RebarCAD Coupler dialog**

The RebarCAD Coupler dialog contains 2 slides. The left hand slide displays the shape code used to create the bar picked (along with the bar diameter) whilst the right hand slide displays a scaled diagram of the actual view picked. The scaled diagram includes a red cross on one bar leg. This red cross toggles between bar legs when the 'Coupler or thread' option is selected for that bar leg. This allows the user to see which bar leg will be affected on the drawing.

The options available within the RebarCAD Coupler dialog are applicable to each free leg which can be coupled/threaded and are as follows:

**Manufacturer**

The Manufacturer option controls the coupler types available from the Coupler Type option. The required coupler manufacturer can be set for each bar leg/end. This makes it possible to apply a different manufacturer's coupler to each end of a bar.

**Note**

For the Ancon range, the manufacturer field also defines the coupler type.

Two MSP MacAlloy options are available, MSP-STD lists the stock MSP 500 couplers while MSP-SPEC lists the non-stock MSP 500 couplers.

The MSP Coupler abbreviations indicate the following: -

#### 11.1.1.1.1 MSP-STD

| | | |
|---|---|---|
| M5LN | - | Lock Nut |
| M5PC | - | Pin Stop Coupler |
| M5C | - | Standard Coupler |
| VF | - | Void Former |
| M5ST | - | Turnbuckle (25mm Adjustment) |
| M5PCN | - | Pin Stop Coupler with Lock Nut |
| M5CN | - | Standard Coupler with Lock Nut |
| M5STN | - | Turnbuckle (25mm Adjustment) with Lock Nut |

#### 11.1.1.1.2 MSP-SPEC

| | | |
|---|---|---|
| M5HC | - | Hexagonal Coupler |
| M6LT | - | Turnbuckle (100mm Adjustment) |
| M5HCN | - | Hexagonal Coupler with Lock |
| M5LTN | - | Turnbuckle (100mm Adjustment) with Lock Nut |

**CFG...**

The CFG... button accesses the RebarCAD Coupler Configuration dialog for the manufacturer selected. (See the chapter entitled “Enquiry”).

**Info...**

Displays technical information of the coupler type selected

**Coupler or Thread**

This option controls the treatment to be applied to the end of that bar leg. The options are:

**Coupler**

The free end of this bar leg is to have a coupler attached and is to be threaded to suit the coupler type selected. Setting this option to Coupler activates the Coupler Type option so that the required coupler type can be selected.

**Thread**

The free end of this bar leg is to be threaded to suit the Lenton coupler type selected. Setting this option to Thread activates the Coupler Type option so that the coupler type this bar is to be threaded to suit can be selected.

NOTE - The Thread option is only available if that leg's manufacturer option is set to Lenton.

**Coupler Type**

Lists the coupler types available from the manufacturer chosen for attachment to the free end of this bar leg.

**End Conditions**

End condition lists set of end conditions available for the coupler type selected.

Couplers can be given following end conditions so that the bar legs will be reduced physically according to the end condition value defined in the coupler definition file.

- None - No end condition will be applied. This is default;
- Coupled between bars - This has to be used if two bars are coupled and a face reduction is required;
- Coupled to Face - This will be useful for the bar stopping at the face;
- Coupled to Face with Form fixer- This will be useful for the bar stopping at form works with a fixer;

**Coup'd to Diam**

This is used if the coupler attached to the free end of this bar leg is connected to a different diameter bar. The default is the diameter of the bar selected, if a different diameter is entered then the bars coupler label and schedule diagram will indicate a coupler with reducer e.g. the bar coupler label and schedule diagram will show:

| | |
|---|---|
| Lenton Coupler or | maculae M5PC |
| Type A12 'R' | 16/12 Reducer |

16/12

**Attach Label**

If this option is checked, label will be attached.

## 11.1.2 Add Symbols/Labels

Menu Option Couplers->Add Symbols/Labels

Command Line: cads_rc_acoupler

Toolbar 

The Add Symbols/Labels command is selected from the Coupler sub-menu and it is used to add or remove symbols/labels from individual bar views on the drawing without entering the Add/Edit Coupler dialog. It has no affect on the schedule printout for the bar selected.

On picking the 'Add Symbols/Labels' command from the Couplers sub-menu, you are asked to select one of the following options from the side menu:

**Symbol**

Only a coupler symbol will be attached.

**Label**

Only a coupler label will be attached.

**Both**

A coupler label and symbol will be attached.

**None**

No label or symbol will be attached. (This option is used to removed symbols/labels already attached to the bar view).

Once you have selected the required option, you will be asked to pick the bar view you wish to apply the setting to. This command applies the setting selected to all coupled legs in the bar view picked. If you require more control over the symbol/label for each bar leg, then this can be achieved from the RebarCAD Coupler dialog where symbol/label settings can be different for each bar leg end.

If the picked bar is part of a bar set which has no couplers/coupler threads attached, you are asked if you wish to attach a coupler/coupler thread to that bar set. Selecting Yes takes you into the RebarCAD Couplers dialog where the options described earlier in the section Add/Edit Coupler are available, whilst selecting No returns you to the AutoCAD command prompt.

### 11.1.3 Couple Bars

Menu Option Couplers->Couple Bars

Command Line: cads_rc_cbars

Toolbar 

The Couple Bars command is used to connect two existing bars using an appropriate coupler type.

You are asked to pick the bar you want to allocate the coupler to (picking towards the end of the leg you want the coupler placed on) followed by the bar you want to couple to (again picking towards the end of the leg you want the thread applied). The RebarCAD Couplers dialog (Figure 14.2), where the required coupler type can be selected, is then displayed. On exiting the dialog via the OK button, the bar leg allocated the coupler is adjusted so that the correct clearance is achieved between the bar ends and you are asked to place the relevant coupler labels.

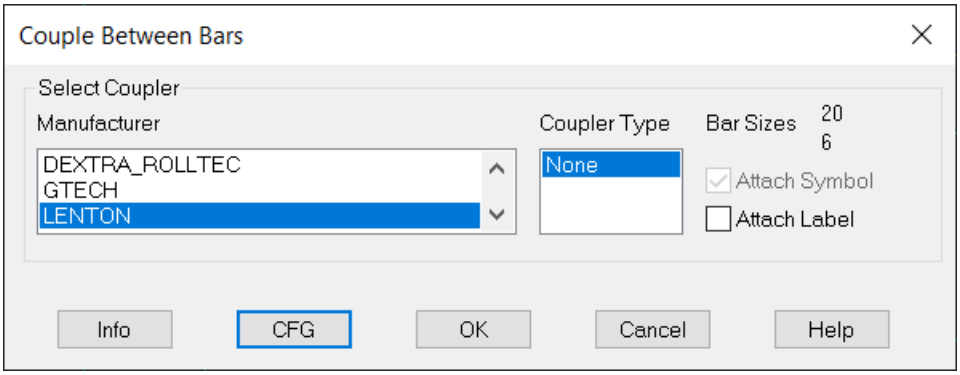



**Figure 13.2.3:1 RebarCAD Couplers dialog**

Notes

- For the Couple Bars command to work, the bar legs picked must be drawn in line or parallel on the drawing;
- Any adjustments required to achieve the correct clearance between the bar ends are always made to the bar allocated the coupler;
- If the bars picked are of different diameters, the coupler is always allocated to the larger diameter bar.

### 11.1.4 Couple To Face

Menu Option Couplers->Couple to Face

Command Line: cads_rc_c2face

Toolbar 

The Couple To Face command is used to add a coupler to an existing bar when the coupler is to be placed/fixed to a known face. (e.g. when a coupler is to be placed up to a formwork face ready for the connecting bar in the next element to be attached after the removal of the formwork).

You are asked to pick the bar you want to couple and then to define the face on which the coupler is to be placed. The RebarCAD Couplers dialog (Figure 14.3) is then displayed and the required coupler type can be selected. On exiting the dialog via the OK button, the bar leg allocated the coupler is adjusted so that the correct clearance is achieved between the bar end and the face. You are then asked to place the relevant coupler label.

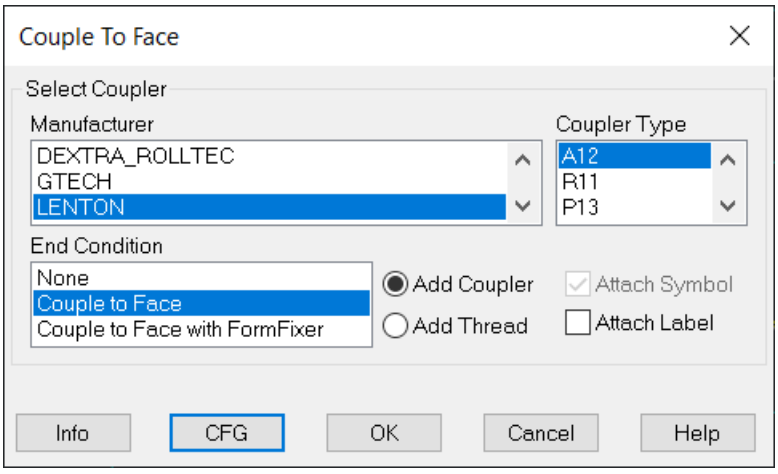



**Figure 13.2.4:1 RebarCAD Couplers dialog**

NOTE.

- Where the coupler type selected is of a two part construction, the coupler is placed with the end of the female part adjacent to the face so that the male part can be attached when the formwork is removed;
- Where the coupler is to be fixed to the formwork using a sealing cap, you must, if required, allow for the thickness of the sealing cap when defining the face, as this is not taken into account when adjusting the bar end position.

### 11.1.5 Connect To Coupler

Menu Option Couplers->Connect to Coupler

Command Line: cads_rc_c2coupler

Toolbar 

The Connect To Coupler command is used to connect a bar to another bar which has a coupler already allocated to the bar end.

You are asked to pick the bar leg which is already coupled and then the bar which is to be connected to it. The non-coupled bar leg is then adjusted to achieve the correct clearance between the bar ends (the relevant thread is applied to the end of the bar if the coupled bar is using a Lenton coupler). You are then asked to place the relevant coupler thread label.

NOTE.

- For the Connect To Coupler command to work, the bar legs picked must be drawn in line or parallel on the drawing;
- Any adjustments required to achieve the correct clearance between the bar ends is always made to the bar which is connecting to the existing coupled bar;
- If the non-coupled bar is of a larger diameter to the existing coupled bar, the command is aborted, as the coupler must always be applied to the larger diameter bar.

### 11.1.6 Annotate Couplers

Menu Option Couplers->Add/Edit Annotated Coupler

Command Line: cads_rc_atcoupler

Toolbar 

The RebarCAD Annotate Coupler function provides support for annotating and scheduling coupler types other than those provided by Erico Lenton or MSP MacAlloy.

The Annotate Coupler command is selected from the Coupler sub-menu and is used for adding, editing or removing annotated couplers and threads from individual bars via the RebarCAD Annotate Couplers dialog (Figure 14.5).

NOTE - The Annotate Coupler command does not make any adjustment to the bar on the drawing. It simply adds a coupler or thread to the end of the bar at its existing position on the drawing.

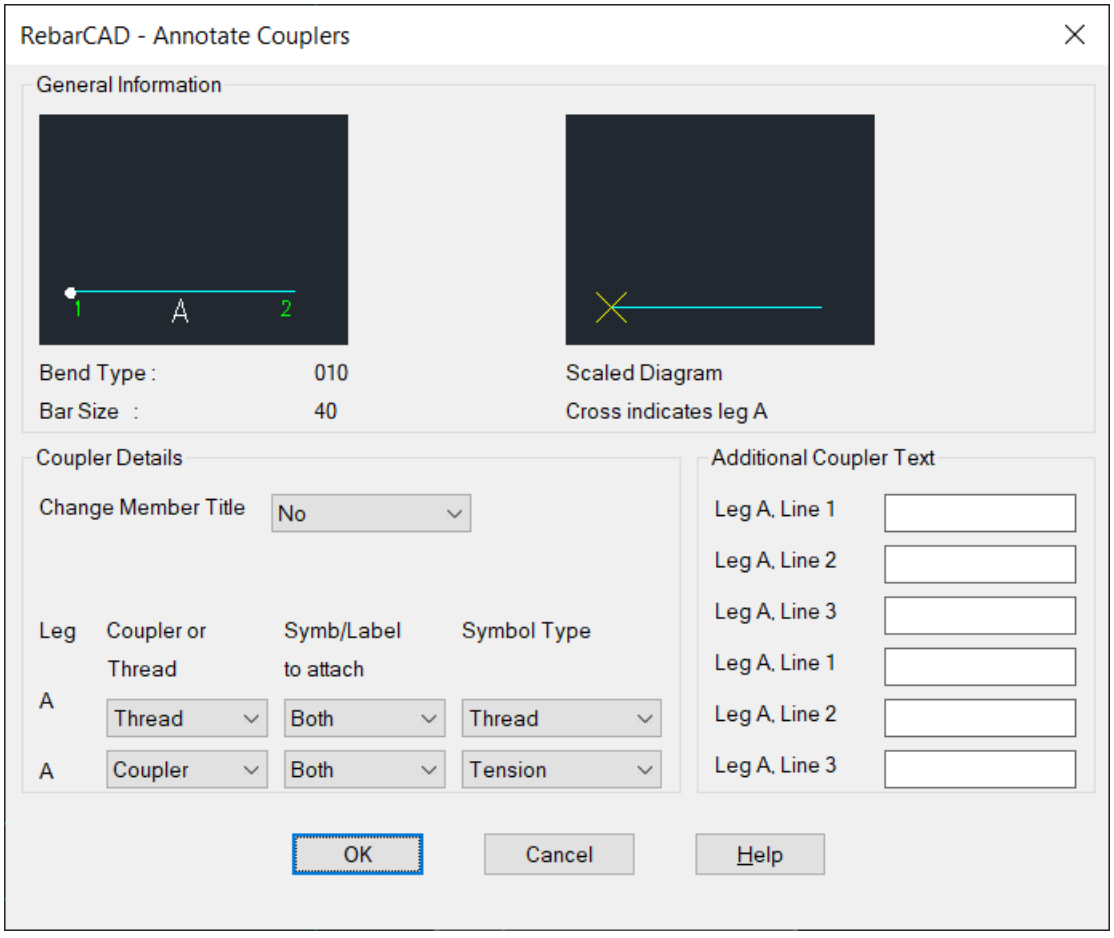



**Figure 13.2.7:1 RebarCAD Annotate Couplers dialog**

The RebarCAD Coupler dialog contains 2 slides. The left hand slide displays the shape code used to create the bar picked (along with the bar diameter) whilst the right hand slide displays a scaled diagram of the actual view picked.

The scaled diagram includes a red cross on one bar leg. This red cross toggles between bar legs when the 'Coupler or thread' option is selected for that bar leg. This allows the user to see which bar leg will be affected on the drawing.

The options available within the RebarCAD Annotate Coupler dialog are applicable to each free leg which can be coupled/threaded and are as follows:

### 11.1.7 Coupler or Thread

This option controls the treatment to be applied to the end of that bar leg. The options are :

None - No treatment is required to the free end of this bar leg.

Coupler - The free end of this bar leg is to have a coupler attached and is to be threaded to suit the coupler type selected.

Thread - The free end of this bar leg is to be threaded to suit the coupler type.

### 11.1.8 Symbol/Label to attach

This option is used to specify the symbol and label to be attached on the drawing adjacent to this bar leg end for the picked bar view only. The options are:

None - No label or symbol will be attached.

Label - Only a coupler label will be attached.

Symbol - Only a coupler symbol will be attached.

Both - A coupler label and symbol will be attached.

This setting does not apply to all views of this bar leg, only the bar view picked from the Add/Edit Coupler command. Labels can be applied to other views of this bar using the Add Symbols/Labels command described in the section Add Symbols/Labels to be found later in this chapter.

### 11.1.9 Symbol Type

This option is used to specify the symbol type to be attached to this bar leg if the 'Symbol/Label to attach' option is set to 'Symbol' or 'Both'. The options are:

None - No symbol will be attached regardless of 'Symbol/Label to attach' setting.

Tension - Will attach the Tension symbol block specified in the Coupler Configuration.

Compression - Will attach the Compression symbol block specified in the Coupler Configuration.

Thread - Will attach the Thread symbol block specified in the Coupler Configuration.

**Additional Coupler Text**

Three lines of text can be added for each leg, the text entered is shown on the bar view and also included on the schedule printout if the relevant diagram is attached to the bar data line.

# 12 OverStock Length Feature

**Chapter Objectives**

This chapter describes the scope and use of the Over Stock Length feature for RC bars.

## 12.1 Overview of the RebarCAD Over Stock Feature.

Over stock length feature allows to splice the bars whose length is above the user specified stock length and enables editing as a group.

It increases the overall productivity for spliced bars as re editing as a group makes revisions much easier.

The Tapered Range macro also has the option to draw the bars as Over Stock bars.

This feature can be turned off completely if the Global config as shown below is set as "No".

[OverStockFeature]

UseOverStockLength=No

## 12.2 Drawing Bars Beyond Stock Length

The feature gets triggered automatically if the length of the bar is beyond the Stock length.

The following dialog pops up in the program with the options "Yes", "No" and Cancel.

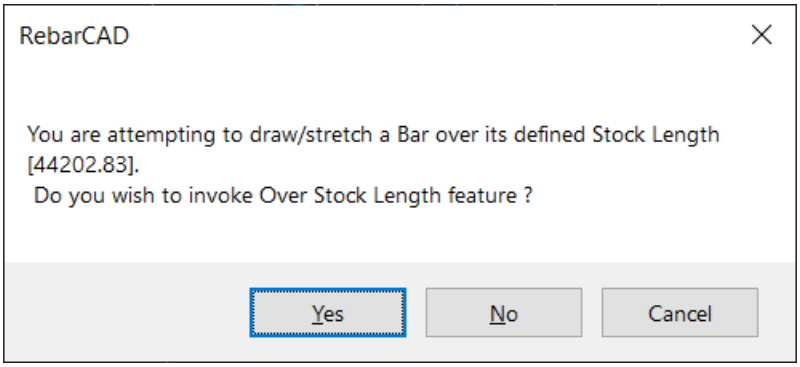



**Figure 16.2.1 OverStock Warning Dialog**

- Yes - invokes Over Stock Feature Dialog;
- No - Works as Previous version of the program;
- Cancel - Cancels the operation.

**OverStock Feature Dialog**

If the OverStock option is selected, the following dialog appears.

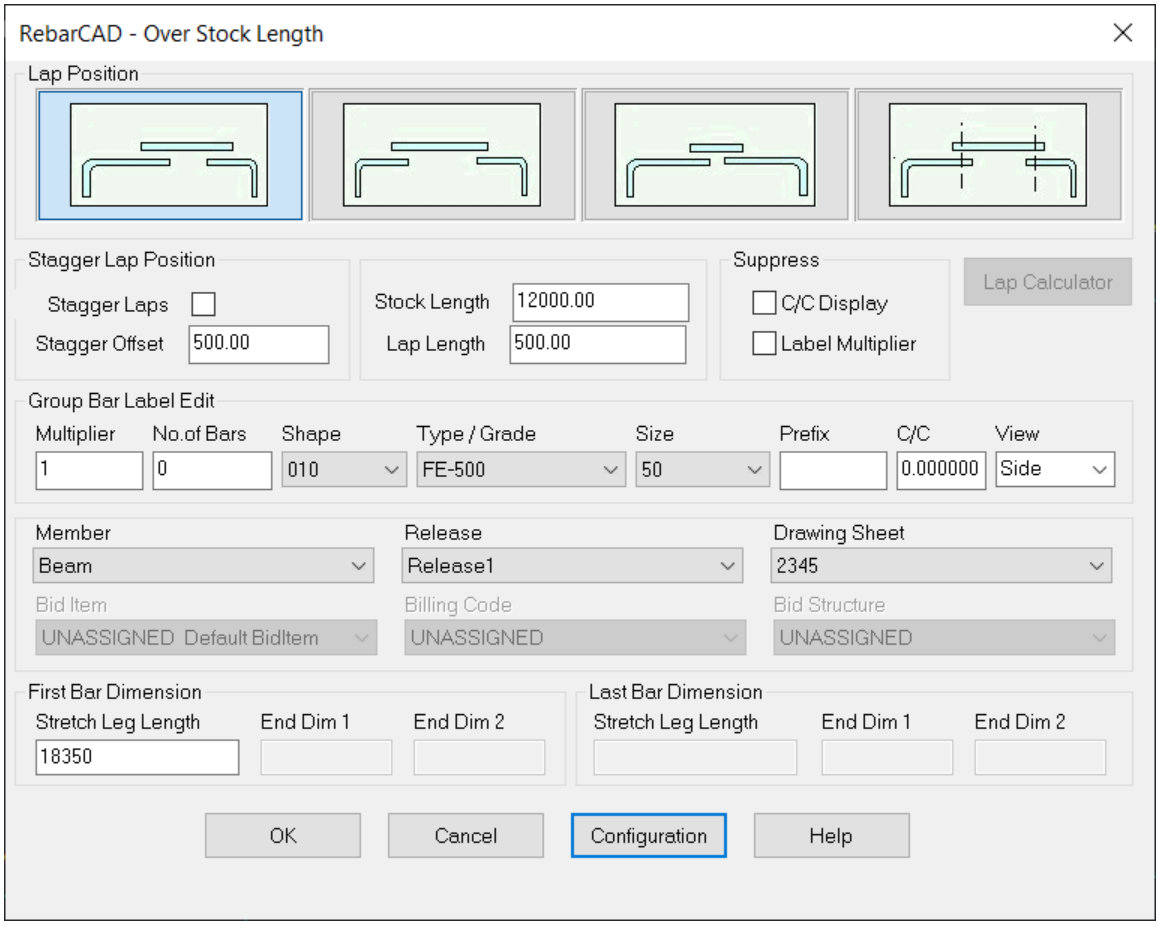
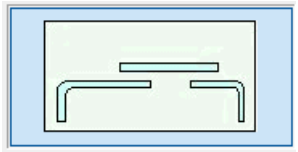



**Figure 16.2.2 OverStock Main Dialog**

**Splice Options**

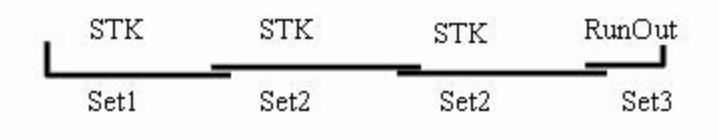
There are four splice options as shown in the dialog and each one splices the bar as explained below.

Splice Option 1:

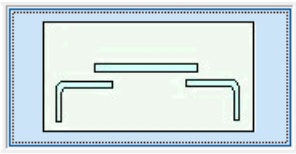


The first and Intermediate bars are the stock bars and the last bar is the run out bar.

An example of a spliced detail is shown below. The Set number shown indicates as to how the bar mark is determined.

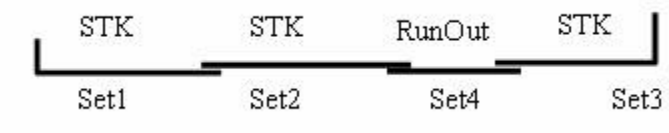



Splice Option 2:

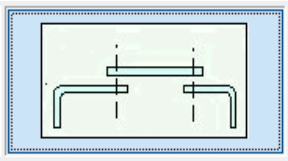


The first, last and Intermediate bars are stock bars. The last but one bar is the run out bar.

An example of a spliced detail is shown below.

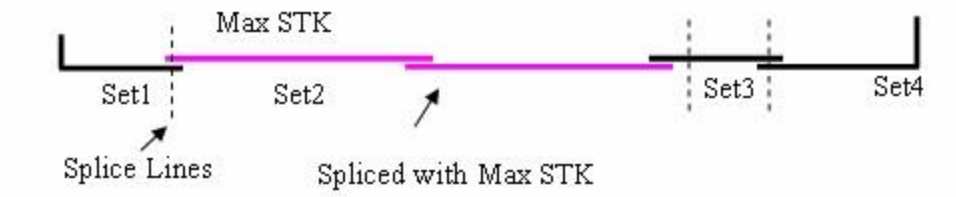



Splice Option 4:



Each splice is defined by selecting set of lines. If the distance between two lines goes beyond the Maximum Stock Length, the program splices this zone by maximum stock length.

An example of a spliced detail is shown below.



**Stock Length**

This is the length of the bars for splicing. This cannot be more than the Program Stock Length (Max Stock Length).

For e.g if the construction joint is set at 8000 mm (or 30') and the bar needs splicing at those points, the stock length can be entered as 8000 mm (30') which is less than the program stock length (12000 mm or 66').

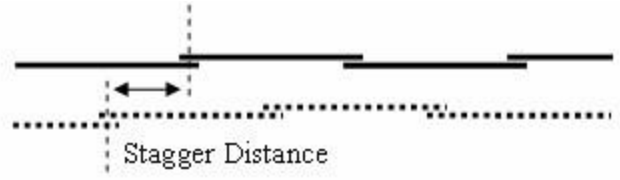
The stock length can also be based on the available Stock lengths of bars specified by the Manufaturers.

**Lap Length**

This is the length of the Lap for splicing defaulted to 500 mm (1'-8" ). This is not automatically calculated according to the size of the bar. Hence it is the user's responsibility to enter the proper Lap value.

**Staggered Lap**

This option calculates and adjusts the first and last bar lengths such that if the alternate bars are placed by mirroring, the lap distance is staggered by the given value. Note that this option should be used with care for U and L shaped bars which are unsymmentric.




**Bar Group Data**

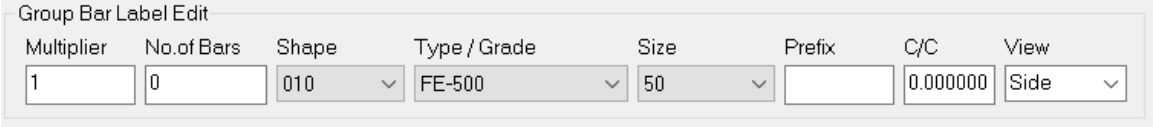
This is similar to the options available for bar.

Multi:

Multiplier for the group.

No. of Bars:

No of bars for the group.



Shape:

Shapes that are supported for OverStock feature are listed here.

Following shapes are supported.

Straight bar

Straight bar with Hooks U bar and L bar.

For U and L shape, only the Second leg is allowed to stretch beyond beyond the Stock length.

Grade:

Grade of the bars within the group.

Size:

Size of the bars in the group.

When the Size is changed, it will give the following warning message that it does not automatically calculate the lap required for the selected size.

Prefix:

Prefix for the bars in the group.

C/C:

Centre to Centre distance of the bars in the group.

View:

Side view and Plan view for the group are supported. The views can be changed as required.

Release Code:

Release Code of the bars in the group.

Hooks:

User can select either A or A/G hooks for bars in the group.

**Suppress c/c Display**

If toggled by picking the box to display an X, the c/c value will be suppressed in the label display for the entire group. (Refer 4.1.11 “Suppress c/c display” for more details)

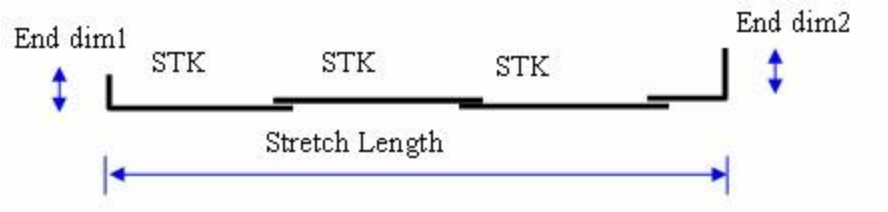
**Suppress Label Multiplier**

If activated by picking the box to display an X, the multiplier will be suppressed in the label display for the entire group. (Refer 4.1.12 “Suppress Label Multiply” for more deails)

**First Bar and Last Bar Data**

This is similar to the options available for bars.

The stretch length is the leg length of the bar to which splicing is done. Stretch length , end dim1 and end dim2 are shown in the figure below.






**Lap Calculator**

This invokes the lap calculator for US config.

## 12.3 Editing of the RebarCAD Over Stock Bars

This is similar to the options available for bar.

Barlabel editing and Double click editing of OverStock bars invoke the OverStock Feature’s main dialog.

Multiple Edit can also be done for groups.

Note:

Any editing done on lables such as moving label / leader will retain it's position on most cases of editing such as changing bar size, grade etc. There are certain cases where it will reposition the labels to OSL defaults. User needs to reposition if required.

**Copy Operation**

Autocad Copy command or RC copy command invokes the following dialog and the options available are given below.

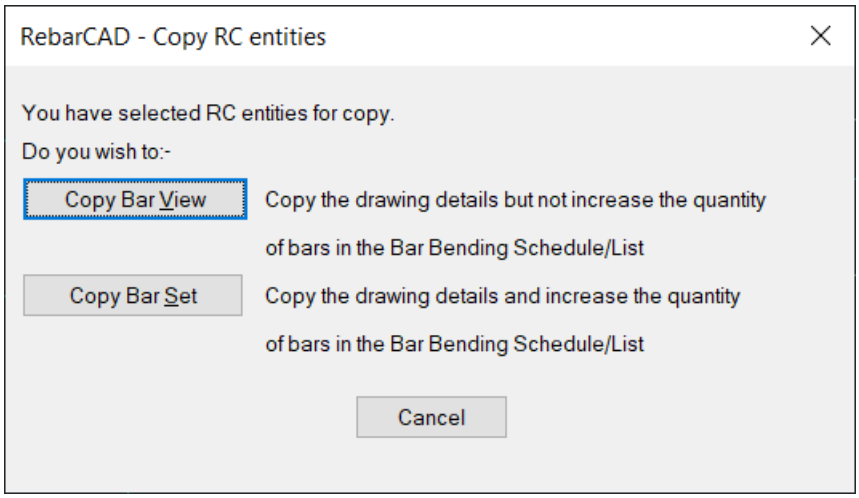



**Figure 16.3.1 OverStock Copy warning Dialog**

**Copy Group:**

Allows to Copy the group as View or Set.

**Note:**

Copying the group as Set and then editing any of the set updates the bar Mark of the Over Stock Group.

**Explode Group:**

Explodes the group into individual bars.

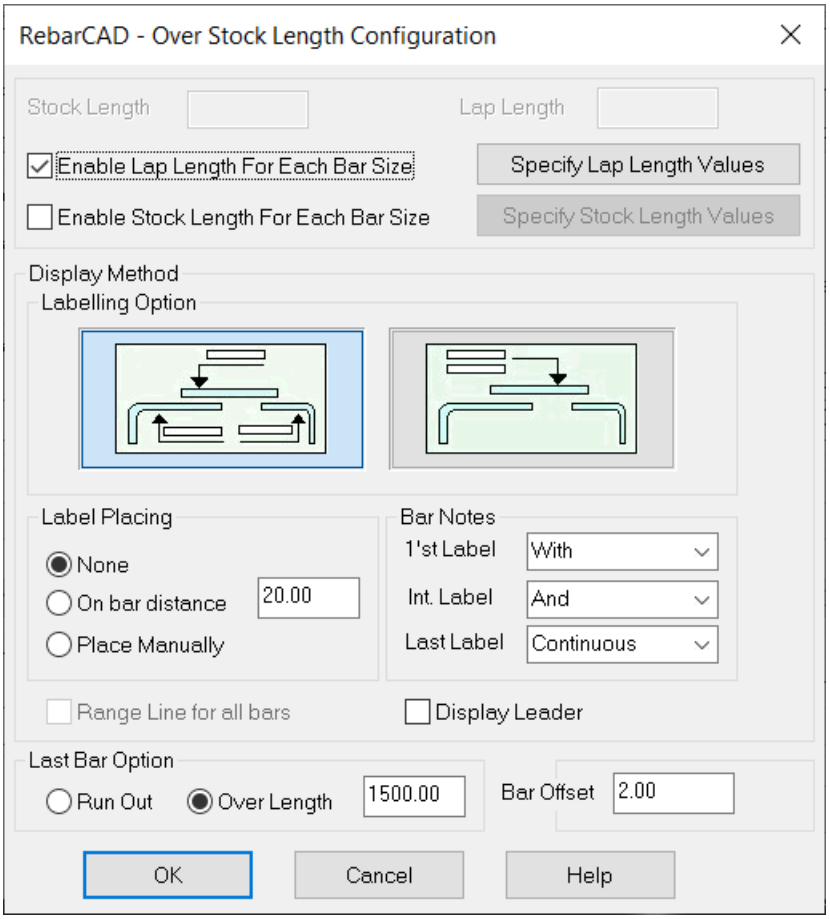
**Exploding as individual bars**

The Command "cads_rc_Explode" prompts to select the Over Stock bars and explodes it as individual bars.

Now the bars no longer behave as a group of bars which react to the features avaiblable in over stock length command.

## 12.4 Configuration Options for Over Stock Bars

If the OverStock Config option is selected, the following dialog appears.




**Stock Length**

This value is the stock length that can be provided by the user. This edit box will be enabled when invoked from Area Detailer Macro and disabled when invoked from RebarCAD. While using RebarCAD the stock length value can be provided in the OSL main dialog.

**Lap Length**

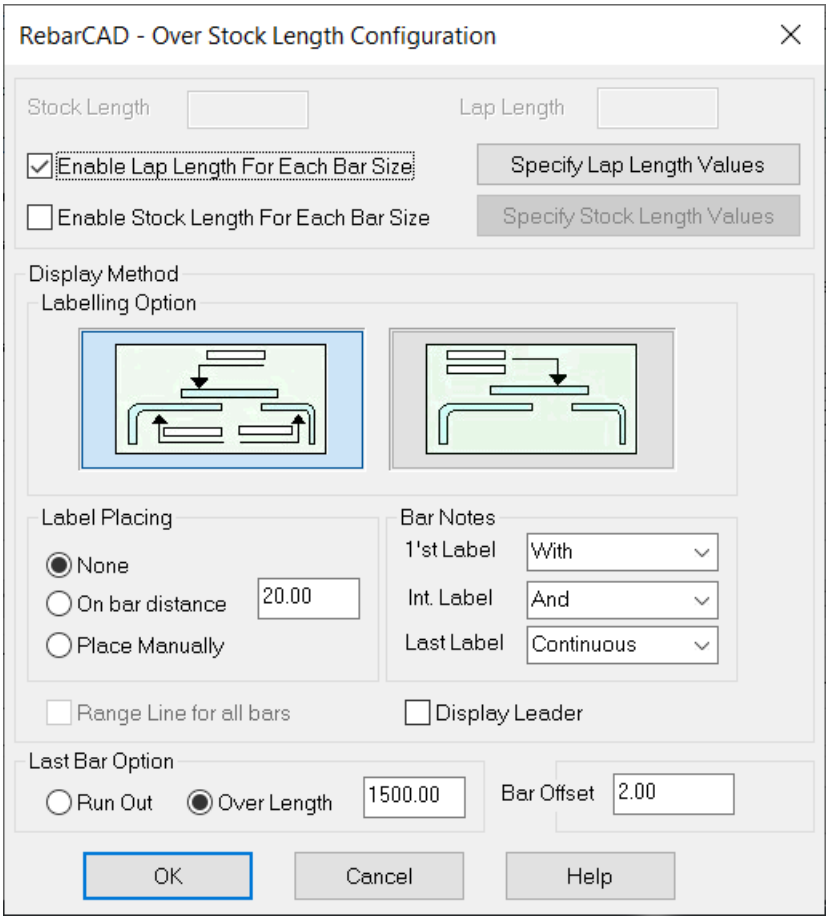
This value is the lap length that can be provided by the user. This edit box will be enabled when invoked from Area Detailer Macro and disabled when invoked from RebarCAD. While using RebarCAD the lap length value can be provided in the OSL main dialog.

**Lap Length for each bar size**

The new feature of specifying Lap length for each bar size can be availed by activating the below check box.

## 12.5 Configuration Options for Over Stock Bars

If the OverStock Config option is selected, the following dialog appears.




**Stock Length**

This value is the stock length that can be provided by the user. This edit box will be enabled when invoked from Area Detailer Macro and disabled when invoked from RebarCAD. While using RebarCAD the stock length value can be provided in the OSL main dialog.

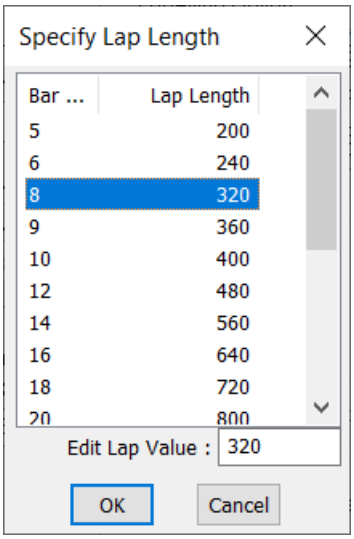
**Lap Length**

This value is the lap length that can be provided by the user. This edit box will be enabled when invoked from Area Detailer Macro and disabled when invoked from RebarCAD. While using RebarCAD the lap length value can be provided in the OSL main dialog.

**Lap Length for each bar size**

The new feature of specifying Lap length for each bar size can be availed by activating the below check box.

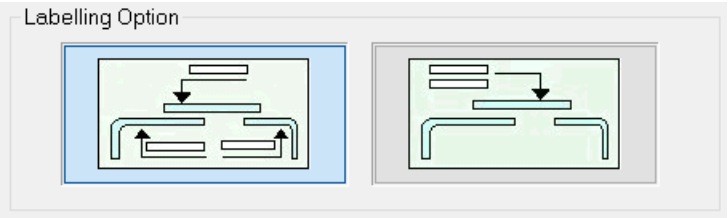

The lap length for each bar size can be viewed/changed by clicking on the “Specify Lap Length Values” button.




The default vaue for lap length for each bar size is 40 X Bar diametre. User can change the default lap length values by clicking on the respective row in the list box and then enter the value in the below text box. The lap length value for each bar size will be retained for future use and is stored as configuration items in the drawing. This lap length value will be automatically used by the program while drawing over stock length bars.

**Labeling Option**

This option controls the manner in which the intermediate bars are drawn i.e as view or set.It also indicates how the labels are placed i.e label all the bars individually or stack them.




Option 1: Label the bars individually

Labels all the bars individually and the intermediate bars are drawn as new Sets.

Option 2: Label the bars as Stack

Labels are stacked and the intermediate bars are drawn as new views and the multiplier is adusted accordingly

**Label Placing**

Label placing options available are as shown below.


None:

Does not label the bars.

On bar distance:

Places the labels at a distance from the bar. The distance is calculated by multiplying the dimscale with the “On bar distance” factor.

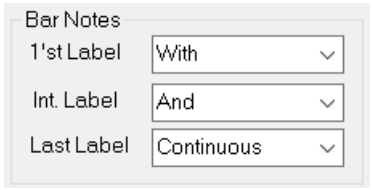
Place Manually:

Allows to place the bars manually i.e user has to manually pick the arrow position and leader postion for each bar.

**Bar Notes for Label**

The following Label Notes are available for the first bar, Intermediate bar and Last bar.

1’st Bar’s Label: Default value is “With”




Intermediate Bar’s Label: Default value is “And”

Last Bar’s Label: Default value is “Contnuous”.

The Label Notes can be either entered or selected from the standard notes provided in the list box.

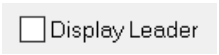
**Range line for All Bars**

This is used for a range of bars which are grouped with the OSL feature.

If the “Range Line for all Bars” option is “On”, the program draws the Range line for all bars.

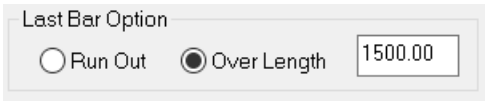

**Display Leader**

If this option is turned off, leader will not be drawn. This option is 'off' by default for ranges.




**Last Bar Option**

The last bar option as shown in the figure below allows to control the manner in which the last bar is drawn.




Run Out:

This option just makes the last bar's length as the calculated length based on the available stretch length and stock length.

Over Length:

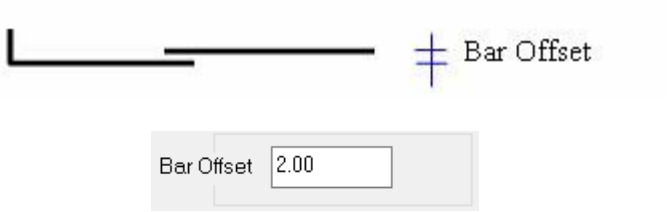
If the last bar is sligtly higher than the stock length, it can be set to a value such that it can be more than stock length by a given "Over length" value.

**Note:**

For the Run out option, if the last bar calculated is too small which is not practical, the program automatically switches to "Over Length value" after giving a warning message at the Autocad command window.

**Bar Offset**

This is the factor which allows the user to adjust the position of each alternate bar near the "Lap" as shown in the figure below to add more visibilty.




The "Bar offset" value is multiplied with the "Dimscale" value and is used to calculate the actual height in the drawing.

**Over Stock Feature - Limitations**

The Over Stock feature has the following limitations.

- It supports only the following shapes;
  - Straight bar;
  - Straight bar with Hooks;
  - U bar;
  - L bar.
- It supports only the following range types;
  - Single indicator range;
  - Double indicator range;
  - Double indicator tapered range.
- For U bar, the second Leg alone can be stretched beyond stock length;
- Couplers cannot be added;
- Add view or Set command and Range view command are not supported for Over Stock bars;
- If the difference between the first and last bar is more than the stock length of a double indicator tapered range, it will not be spliced as Over Stock bars.

# 13 Appendix A - Important Operating Notes

**Chapter Objectives**

This appendix lists points to note when using RebarCAD software.

The following notes are intended to assist you in using RebarCAD: -

- For maximum efficiency try to make the most of the AutoCAD copy commands, even if the new bar is to be different from the one copied. If, for instance, the new bar is edited to a different diameter, then you will be given the opportunity to give the bar a new bar mark and leave the original bar unchanged;
- If you find the schedule contains more bars than the bar labels on the drawing, then you will probably have some un-labelled bar sets on the drawing. These were probably created by using New Set options when you required an Add View option. To ensure the schedule matches the bar labels on the drawing, the schedule configuration option Schedule Unlabeled Bars can be set to No. This will then only schedule bar sets which have their associated label on the drawing. Alternatively, you could use the command Drawing Audit which has an option to highlight all un-labelled bar sets on the drawing. Any un-labelled sets could then be converted to New Views of other bar sets by using the Set to View option off the View to Set Toggle menu option. As each un-labelled set is converted to a New View of an existing bar set its entry in the schedule will be removed;
- If you wish to edit a tapered range which has had a step increment applied and the schedule has been issued, the following point should be noted before editing the tapered range. If the bar c/c or number of bars is edited on a tapered range, then any step increment previously applied will be set back to zero, therefore probably increasing the number of bar suffixes in the range. This in turn will increase the number of lines required to display the bars in the schedule. If there is insufficient space to do this on the schedule the bar set will be placed on a new page with its existing line positions being marked as revisions. In cases like this you are advised to delete the existing tapered range which will then be shown as struck out in the schedule and marked as a revision and replace the deleted bar set with a new range which will be placed on a new schedule page;
- If a Prototype or Title Block drawing is created from an existing drawing which has RebarCAD loaded into it, you must ensure no RebarCAD database is present on the Prototype or Title Block drawing. This can be achieved by loading RebarCAD into the drawing and entering the following at the command line: CADS_RC_RCTOACAD

  This command will then ask you to de-reference any RebarCAD entities and delete any database found. You should reply YES to both options. On completion of the command the drawing should then be saved. The saved drawing will then be free of any RebarCAD database and associated entities. The drawing is then suitable for use as a Prototype or Title Block drawing which will have future use of RebarCAD. You may wish to adopt this sequence of database deletion on all drawings to be used with RebarCAD especially if the outline drawing has come from a source outside of your control;
- If the match bars function is used and bar marks are rationalised, gaps may occur in the bar marking sequence e.g. 601, 602, 604 where 603 is no longer in use. Where this is the

case the Compact Bar Marks function can be used to compact the bar marks used e.g. in the above sequence bar mark 604 would be renumbered to 603 and so on;

- The following Display settings are recommended when using RebarCAD:
  - Number of command lines 3
  - RebarCAD Toolbar - ON
  - RebarCAD Snaps Toolbar - ON
  - CADS Keypad Toolbar – ON
- Users wishing to use 800x600 screen resolution need to set the Gconfig variable [ScheduleVars] SchedDlgName to schedule800 to enable the internal schedule to be visible;
- You can disable the range offset prompt by typing in CADS_RC_OFFSET and then pressing enter. You will be prompted with a Yes / No option;
- RebarCAD reads .def / .ini configuration files which determine the program setup. Several *.def files are supplied with RebarCAD.

  By default, RebarCAD uses IS2502.DEF on new drawings, if another set-up is required the relevant *.def file should be loaded by using the Change Cfg. Option prior to detailing any bars. If the Write Prototype Settings option is used to write a new cfg. file the new file is named the same as the current .def file but has a .ini extension when a .def file is selected for use RebarCAD reads the cfg values from this file first and then reads the .ini file (if present). Existing def files can be copied to new file names and used to create specific project/office settings as required.

# 14 Appendix B - RebarCAD Configuration Reference

**Chapter Objectives**

The following pages list some of the more useful configuration variables for use in RebarCAD.

Please be aware, that it is possible, by making changes to the Global

Configuration Centre to cause RebarCAD to behave incorrectly. Only Advanced Users should attempt to edit these settings unless directed to do so by CADS Technical Support Department.

**Appendix D1 -**

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[Default]** | | | |
| Version | | | 5051 |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[Config]** | | | |
| CurrentCFG | | | IS2502 |
| Setup | | | India |
| MMConfig | | | IS2502 |
| MMBarSizeDisplayUnitType | | | 7 |
| MMBarSizeConfiguration | | | 4 |
| MMWeightDisplayUnitType | | | 4 |
| MMWeightDisplayUnitMode | | | 0 |
| ScheduleLayer | | | SCHEDULE |
| RevisionTableLayer | | | SCHEDULE |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[SoftMetric]** | | | |
| UnitsMode | - | Soft Metric Variable | 1 |
| NoModes | - | Soft Metric Variable | 5 |
| Multiplier1 | - | Soft Metric Variable | 1.0 |
| Multiplier2 | - | Soft Metric Variable | 0.03937007874016 |
| Multiplier3 | - | Soft Metric Variable | 25.4 |
| Multiplier4 | - | Soft Metric Variable | 10 |
| Multiplier5 | - | Soft Metric Variable | 0.254 |
| Units1 | - | Soft Metric Variable | 0 |
| Units2 | - | Soft Metric Variable | 4 |
| Units3 | - | Soft Metric Variable | 2 |
| Units4 | - | Soft Metric Variable | 2 |
| Units5 | - | Soft Metric Variable | 2 |
| Precision1 | - | Soft Metric Variable | -1 |
| Precision2 | - | Soft Metric Variable | 2 |
| Precision3 | - | Soft Metric Variable | 0 |

| | | | |
|---|---|---|---|
| Precision4 | - | Soft Metric Variable | 2 |
| Precision5 | - | Soft Metric Variable | 2 |
| Id1 | - | Soft Metric Variable | Drawing |
| Id2 | - | Soft Metric Variable | MM ->Inches |
| Id3 | - | Soft Metric Variable | Inches->MM |
| Id4 | - | Soft Metric Variable | MM ->Metres |
| Id5 | - | Soft Metric Variable | Inches-Metres |
| WeightMultiplier1 | - | Soft Metric Variable | 1.0 |
| WeightMultiplier2 | - | Soft Metric Variable | 2.20462262 |
| WeightMultiplier3 | - | Soft Metric Variable | 0.45359237 |
| WeightMultiplier4 | - | Soft Metric Variable | 2.20462262 |
| WeightMultiplier5 | - | Soft Metric Variable | 0.45359237 |

| **GCONFIG SETTING** | **DIALOG Equiv (if relevant)** | **DESCRIPTION** | **DEFAULT** |
|---|---|---|---|
| **[DimensionExclusion]** | | | |
| ExcludeTempDim | - | | TempDim |
| ExcludeTempDim2 | | | TempDim2 |

| | |
|---|---|
| ExcludeHidden1 | Hidden1 |
| ExcludeHidden2 | Hidden2 |
| ExcludeHidden3 | Hidden3 |
| ExcludeHidden4 | Hidden4 |
| ExcludeHidden5 | Hidden5 |
| ExcludeHidden6 | Hidden6 |
| ExcludeHidden7 | Hidden7 |
| ExcludeHidden8 | Hidden8 |
| ExcludeHidden9 | Hidden9 |
| ExcludeHidden10 | Hidden10 |
| ExcludeHidden11 | Hidden11 |
| ExcludeHidden12 | Hidden12 |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[Bars]** | | | |
| Suffix | BAR Configuration - Bar Marking... | Tapered Start Suffix (letter/number) | a |

| | | | |
|---|---|---|---|
| RcBarLay | BAR Configuration | Reinforcement Bar Layer | rebars |
| BarCenCol | BAR Configuration | Centre Line Colour | cyan |
| BarProCol | BAR Configuration | Profile Line Colour | white |
| RcBarSecLay | BAR Configuration | Bar Section Layer | 0-70 |
| ShapeWin | BAR Configuration | Shape Code Window | on |
| ReadSc99File | | | No |
| Sc99LibPathAndName | | | USER.BDF |
| BarDescFilePathAndName | SUPPORT FILES | Bar Shape Codes file | IS2502.BDF |
| BarBendingDataFilePathAndName | SUPPORT FILES | Bar Bending Data file | IS2502_BBDM.TXT |
| DimsDataFilePathAndName | SUPPORT FILES | Bar Dims Txt file | IS2502_DIMS.TXT |
| BarTypesPathAndName | SUPPORT FILES | Bar Types File | IS2502_TYPEM.TXT |
| DisplaySetWarning | BAR Configuration | Display SET warnings | Yes |
| NewViewDLG | BAR Configuration | New View Dialog Appears | Always |
| DisplayOldShapes | --- | Displays Old 9, 11, 13 and 21 | No |
| Sc99SlidePath | --- | Special Bar Slide Path | |
| DiamChangeCheck | BAR Configuration - Advanced... | Diameter Change Check | Yes |

| | | | |
|---|---|---|---|
| UsePlineWidth | BAR Configuration | Use Pline Width rather than centreline | No |
| PlineWidthFact | --- | Pline Width Factor | 0.3 |
| DrawBlips | BAR Configuration - Advanced... | Blips when doing Tapered Ranges | Yes |
| DrawOverSizedEnds | BAR Configuration | Draw Over Sized Ends | No |
| OverSizeEndsFact | BAR Configuration | Over Sized Ends Factor | 0.3 |
| DrawOverSizedEndsProportionalToSize | | | No |
| InvaildBarColor | --- | The colour Incomplete/Unlabelled bars are shown at | 6 |
| AutoLeaderBars | --- | Automatically Leader Bars | Yes |
| ShowType2As17 | --- | Shows a type 2 as a 17 in the schedule | No |
| UseFastBBD | BAR Configuration - Advanced... | Use Fast BBD | Yes |
| ShowSlideError | --- | Display warning if view slide not present | No |
| StartBarPos | --- | Contact CADS | 0 |
| StretchChangesMark | BAR Configuration - Advanced... | Stretch Changes Mark | Ask |

| | | | |
|---|---|---|---|
| StretchAsksForMark | BAR Configuration - Advanced... | Stretch Asks for Mark | No |
| MaxLengthWarning | BAR Configuration - Advanced... | Maximum Length Warning | Ask |
| AlwaysDisplayLengthInches | BAR Configuration - Advanced... | Always Display Length in Inches | No |
| ZeroLengthInchesTxt | BAR Configuration - Advanced... | Zero Length Inches text | -0" |
| RadDimToOuter | BAR Configuration - Advanced... | Radius Dimensions to Outer | No |
| ExcludeBarShapes | BAR Configuration - Advanced - Exclude Bar Shapes... | Bar shapes can be selectively excluded from Shape Codes list | *U |
| StrghtBarMark | | | Yes |
| SchedRadialBarAsStraight | --- | Schedule shape code 9 as a 0 in Schedule | Yes |
| RadialMaxHeight | --- | Maximum H Dim suitable for Transport | 2235.52 |
| ShowStraightDim | | | Yes |
| MaxDimensionLength | | | 12000 |
| MaxDefaultBarLength | | | 20000 |
| DimensionMinimums | | | Yes |
| UpdateBarDimensions | | | Yes |
| AskForBmarkinput | | | Yes |

| | |
|---|---|
| AllowDuplicateControlCodes | Yes |
| UpdateSlopingLegsDimsOnEntryToDimsDlg | Yes |
| SortShapeList | No |
| ShapeGroupSortingOrder | |
| ShowShapeCodeWarning | YES |
| UnScheduledBarLayer | UnscheduledRebars |
| RestrictedBarSizes | |
| BentMaxHeight | 2400 |
| HookDim1 | |
| HookDim2 | |

| **GCONFIG SETTING** | **DIALOG Equiv (if relevant)** | **DESCRIPTION** | **DEFAULT** |
|---|---|---|---|
| **[SpecialBars]** | | | |
| UseSpecialsFile | BAR Configuration - Special Bars | Use Special Bar File | No |
| SpecialBarFilePathAndName | BAR Configuration - Special Bars | Special Bar Path and Filename | specials.spl |

| | | | |
|---|---|---|---|
| DefaultDescription | | | {Description = "Special Bar";} |
| DefaultSlidename | | | {Slide = "special.sld";} |
| DefaultVarSetup | | | { NoBarMarkPrompt = 0;SpecialBar = 1; } |
| DefaultScheduleData | | | Category = "Bent"; |
| DefaultLengthCalc | BAR Configuration - Special Bars | Default Length Calculation | {length=A+B+C+D+E+F+G;} |
| DefaultRounding | BAR Configuration - Special Bars | Default Rounding Calculation | {StdRounding(0);lengthRounded=ARounded+BRounded+CRounded+DRounded+ERounded+FRounded+GRounded;StdRounding(1);} |
| SpecialBarsSlidePath | --- | Special Bars slide path | |
| SlideTxtWidthFact | --- | Width factor of Slide Text | 1.0 |
| SlideTxtLay | --- | Layer for Slide Text | bar-lbl |
| SlideTxtHeightFact | --- | Height factor of Slide Text | 0.1 |
| SlideTxtStyle | --- | Text Style for Slide Text | Romans |
| UseSpecialBarText | --- | Use Special Bar Text | No |
| SpecialBarText | --- | Special Bar Text | 99 |
| ReadSpecialsFromDwg | BAR Configuration - Special Bars | Read Special Bars from the Drawing database | Yes |

| | | | |
|---|---|---|---|
| ReadBarThatAlreadyExists | BAR Configuration - Special Bars | Contact CADS | No |
| AutoNameBarLegDimsForPline | | | No |
| AutoNameSpecialShape | | | Yes |
| AutoSpecialShapeNamePrefix | | | SS |
| DefaultPlineToSpecialShape | | | 2 |
| CouplerBarDisplayShape | | | No |

| **GCONFIG SETTING** | **DIALOG Equiv (if relevant)** | **DESCRIPTION** | **DEFAULT** |
|---|---|---|---|
| **[Label]** | | | |
| LabelLay | LABEL Configuration | Bar Label Layer... | bar-lbl |
| CircleLay | - | Layer of Circle used in Indian Labelling | bar-lbl |
| LabelHeight | LABEL Configuration | Bar Label Height | ~mm~3.0 |
| LabelWidthFactor | LABEL Configuration | Bar Label Width Factor | 1 |
| LabelTextStyle | LABEL Configuration | Bar Label Text Style | romans |
| LabelBarQuestionDef | LABEL Configuration | Label Question Default | No |

| | | | |
|---|---|---|---|
| AutoLabelEdit | --- | Goes into Edit Bar label automatically after each draw bar | off |
| NotesFile | LABEL Configuration | Notes File... | rc_lab.def |
| StackLabelsDistFac | --- | Distance between stacked labels | 1.8 |
| LabelForm1 | LABEL Configuration | Label Format | $MULTI~x$NOBAR $BTYPE $BDIAM $BMARK(~$SUFX1~-$SUFX2~)- ~$CENTR ~$NOTES |
| TaperedLabelForm1 | LABEL Configuration | Label Format | $MULTI~x$NOBAR $BTYPE $BDIAM $BMARK(~$SUFX1~-$SUFX2~)- ~$CENTR ~$NOTES |
| BarMarkFormat | LABEL Configuration | Bar Mark Format | $PREFX$BMARK |
| TaperedBarMarkFormat | LABEL Configuration | Bar Mark Format | $PREFX$BMARK |
| BarMarkExcludeChars | BAR Configuration - Bar Marking... | Exclude size characters in bar mark | |
| BarMarkPrefix | BAR Configuration - Bar Marking... | Bar Mark Prefix | |
| NumberOfMarkZeros | BAR Configuration - Bar Marking... | Value of 2 gives bar marks 01, 02 etc | 2 |
| NumberOfTaperedMarkZeros | BAR Configuration - Bar Marking... | Value of 2 gives bar marks 01, 02 etc | 2 |

| | | | |
|---|---|---|---|
| OldStyleMarking | BAR Configuration - Bar Marking... | USA Consecutive marking within size | Yes |
| StrghtLabelForm1 | LABEL Configuration | Label Format | $MULTI~x$NOBAR $BTYPE $BDIAM $BMARK(~$SUFX1~-$SUFX2~)-~$CENTR ~$NOTES |
| StrghtTapLabelForm1 | LABEL Configuration | Label Format | $MULTI~x$NOBAR $BTYPE $BDIAM $BMARK(~$SUFX1~-$SUFX2~)-~$CENTR ~$NOTES |
| StrghtEPLabelFormat | | | $MULTI~x$NOBAR $BTYPE $BDIAM $BMARK(~$SUFX1~-$SUFX2~)-~$CENTR ~$NOTES |
| StrghtBarMarkFormat | LABEL Configuration | Bar Mark Format | $PREFX$BMARK |
| StrghtTapBarMarkFormat | LABEL Configuration | Bar Mark Format | $PREFX$BMARK |
| StrghtEpBarMarkFormat | | | $PREFX$BMARK |
| LabelBlockPath | | Path for Blocks in labels | |
| AltengthFactor | | Mulitplier for inch/mm conversion | 25.4 |
| NewLabelCallsAutoLeader | | | Yes |
| AskForRotationAngleWhilePlacing | | | No |
| LABELCIRCLEOFFSET | | | 1.2 |

| | |
|---|---|
| LABELFORMATEXTRANOTES1 | |
| LABELFORMATEXTRANOTES2 | |
| LABELFORMATEXTRANOTES3 | |
| LABELFORMATEXTRANOTES4 | |
| LABELBLOCKSCALEFACTOR | 1 |
| PLACELABELBLOCKMANUALLY | No |
| LABELBLOCKXOFFSET | 0 |
| LABELBLOCKYOFFSET | 0 |
| CCDecimalPlaces | 0 |
| ExcludeBmarkForUnSchedBars | No |
| CCSuffix | |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[TicksTags]** | | | |
| AutoTickTag | LABEL Config - Ticks and Tags... | Automatically Ticks and Tags bars drawn | off |

| | | | | |
|---|---|---|---|---|
| EndBarToBottomTail | LABEL Config - Ticks and Tags... | Ticks and Tag formatting | size/placement | ~mm~5.0 |
| EndBarToTopTail | LABEL Config - Ticks and Tags... | Ticks and Tag formatting | size/placement | ~mm~14.0 |
| EndBarToArrowTip | LABEL Config - Ticks and Tags... | Ticks and Tag formatting | size/placement | ~mm~12.0 |
| ArrowHeadWidth | LABEL Config - Ticks and Tags... | Ticks and Tag formatting | size/placement | ~mm~0.6 |
| ArrowHeadLength | LABEL Config - Ticks and Tags... | Ticks and Tag formatting | size/placement | ~mm~2.0 |
| ArrowTailLength | LABEL Config - Ticks and Tags... | Ticks and Tag formatting | size/placement | ~mm~6.0 |
| BmarkTxtHeight | LABEL Config - Ticks and Tags... | Ticks and Tag formatting | size/placement | ~mm~2.0 |
| TagLay | LABEL Config - Ticks and Tags... | Layer for Tag | | 0-25TEXT |
| TickXDim | LABEL Config - Ticks and Tags... | Tick Size | | ~mm~1.4 |
| TickYDim | LABEL Config - Ticks and Tags... | Tick Size | | ~mm~1.4 |
| TickLay | LABEL Config - Ticks and Tags... | Layer for Tick | | rebars |
| TxtOffset | LABEL Config - Ticks and Tags... | Offset for Tag Text | | ~mm~1.0 |
| TxtLay | LABEL Config - Ticks and Tags... | Layer for Text | | 0-25TEXT |

| | | | |
|---|---|---|---|
| TagForm1 | LABEL Config - Ticks and Tags... | Tag Text Format to be used | $BMARK |
| LineBreakZSize | --- | Tools and Symbols Line Break Size | 1 |
| LineBreakExtend | --- | Tools and Symbols Line Break Size | ~mm~3.0 |
| StrghtTagForm1 | --- | Straight Tag Text format | $BMARK |
| StrghtTapTagForm1 | --- | Straight Tapered Tag Text format | $BMARK |
| StrghtEPTagFormat | | | $BMARK |
| DrawProfileTicks | | | No |
| ProfileTicksFactorX | | | 4 |
| ProfileTicksFactorY | | | 2 |
| Style | | | romans |
| WidthFactor | | | 1 |
| DisplayAcadLeader | | | No |
| StartTickAtBarEnd | | | No |
| SwapTickDir | | | No |

| **GCONFIG SETTING** | **DIALOG Equiv (if relevant)** | **DESCRIPTION** | **DEFAULT** |
|---|---|---|---|
| **[Outlines]** | | | |

| | | | |
|---|---|---|---|
| OutlineLay | MISC Config - More Misc Config | Outlines Layer | 0-35 |
| CoverLay | MISC Config - More Misc Config | Cover Layer | cover |
| DimLineOffset | MISC Config - More Misc Config | Dims Line Offset | ~mm~400.0 |

| **GCONFIG SETTING** | **DIALOG Equiv (if relevant)** | **DESCRIPTION** | **DEFAULT** |
|---|---|---|---|
| **[GroupLayering]** | | | |
| GLOactive | MISC Config - More Misc Config | Group Layering Option | Off |
| GLOPathAndName | MISC Config - More Misc Config | Group Layering File | rcgrplay.glo |
| LayerDefPathAndName | MISC Config - More Misc Config | Layer Defin. File | rc-lay.txt |
| AllowLayerNameOfAnyCase | | | No |

| **GCONFIG SETTING** | **DIALOG Equiv (if relevant)** | **DESCRIPTION** | **DEFAULT** |
|---|---|---|---|
| **[RcLibrary]** | | | |
| RcLibPath | MISC Config - More Misc Config | RC Library Directory Path | |

| **GCONFIG SETTING** | **DIALOG Equiv (if relevant)** | **DESCRIPTION** | **DEFAULT** |
|---|---|---|---|
| **[SectionMarkers]** | | | |

| | | | |
|---|---|---|---|
| MarkerLay | MISC Config - Section Marker Configuration | Section Marker Layer | 0-35text |
| MarkerTxtLay | MISC Config - Section Marker Configuration | Section Marker Text Layer | 0-35text |
| MarkerSizeFactor | MISC Config - Section Marker Configuration | Section Marker Size Factor | 1.0 |
| MarkerTxtSizeFactor | MISC Config - Section Marker Configuration | Section Marker Text Size Factor | 1.0 |

| **GCONFIG SETTING** | **DIALOG Equiv (if relevant)** | **DESCRIPTION** | **DEFAULT** |
|---|---|---|---|
| **[RcLeader]** | | | |
| LeaderAlignment | LABEL Config - Leaders... | Leader Mode | Underneath |
| LeaderLay | LABEL Config - Leaders... | Bar Leader Layer... | 0-25TEXT |
| LeaderArrowLength | LABEL Config - Leaders... | Leader Arrow Length | ~mm~2.0 |
| LeaderArrowWidth | LABEL Config - Leaders... | Leader Arrow Width | ~mm~0.6 |
| ArrowHeadPathAndName | LABEL Config - Leaders... | Leader Arrow File... | leadrblk.dwg |
| LeaderAlignment2 | LABEL Config - Leaders... | Leader Mode | Underneath |
| LeaderLay2 | LABEL Config - Leaders... | Bar Leader Layer... | 0-25TEXT |
| LeaderArrowLength2 | LABEL Config - Leaders... | Leader Arrow Length | ~mm~1.0 |
| LeaderArrowWidth2 | LABEL Config - Leaders... | Leader Arrow Width | ~mm~1.0 |
| ArrowHeadPathAndName2 | LABEL Config - Leaders... | Leader Arrow Path and Filename | leadrdot.dwg |

| | | | |
|---|---|---|---|
| LeaderAlignment3 | | | Underneath |
| LeaderLay3 | | | 0-25TEXT |
| LeaderArrowLength3 | | | ~mm~1.0 |
| LeaderArrowWidth3 | | | ~mm~1.0 |
| ArrowHeadPathAndName3 | | | leadcirc.dwg |
| UnderneathDist | LABEL Config - Leaders... | Distance Underneath | 0.35 |
| ARXLeader | | | Off |
| ACADLeader | | | Off |
| RangeLeaderStyle | | | Leader 1 |
| LeaderSnapSetting | | | Near |
| LeaderLineOffset | | | 0 |

| **GCONFIG SETTING** | **DIALOG Equiv (if relevant)** | **DESCRIPTION** | **DEFAULT** |
|---|---|---|---|
| **[BarRefs]** | | | |
| Style | LABEL Config | Bar Ref Text Style | romans |
| Layer | LABEL Config | Bar Ref Text Layer | 0-25TEXT |
| HeightFactor | LABEL Config | Bar Ref Height | ~mm~2.5 |

| | | | |
|---|---|---|---|
| WidthFactor | LABEL Config | Bar Ref Width Factor | 1 |
| RefForm1 | LABEL Config | Bar Ref Formatting | $BMARK |
| StrghtRefForm1 | --- | Bar Ref Formatting for Straight bars | $BMARK |
| StrghtTapRefForm1 | --- | Bar Ref Formatting for Tapered Straight bars | $BMARK |
| StrghtEPRefForm | | | $BMARK |
| BarRefBlock | | | None |
| BarRefBlocKName | | | Blocks\BarmarkCir.dwg |
| BarRefShapeDiagramPath | | | DWGSketches\LabelSketches\ |
| BarRefBlockScaleFactor | | | 1 |
| RedrawBarRefBlocksBasedOnConfig | | | No |

| **GCONFIG SETTING** | **DIALOG Equiv (if relevant)** | **DESCRIPTION** | **DEFAULT** |
|---|---|---|---|
| **[Range]** | | | |
| IndicatorLineLay | RANGE Config | Range Indicator Line Layer | rangelay |
| EndMarkerLay | RANGE Config | Range End Marker Layer | rangelay |

| | | | |
|---|---|---|---|
| RcDotLay | RANGE Config | RC Dot layer | rangelay |
| SeparateTxtLay | --- | Range Text Layer | rangelay |
| IntermediateLineLay | RANGE Config | Intermediate Line Layer | INTERMEDIATERANGELAY |
| DrawRCDots | RANGE Config | Option to draw RC Dots or not | yes |
| DrawRangeTxt | RANGE Config | Option to draw Range Text or not | yes |
| DefStaggeredLabelTxt | RANGE Config | The Default Text for staggered Range Label | stg. |
| DefAlternateLabel1Txt | RANGE Config | The Default Text for 1st Alternate Range Label | |
| DefAlternateLabel2Txt | RANGE Config | P | alt. |
| Fdist | RANGE Config | The Default Text for 2nd Alternate Range Label | ~mm~0.0 |
| Sdist | RANGE Config | P | ~mm~0.0 |
| EnableDist | --- | First Range Offset | yes |
| NewViewDLG | RANGE Config | New View Range Dialog appears for Both, Run, Range, Neither | Both |
| StSnap | RANGE Config | Start of Range Snap | Near |
| OtSnap | RANGE Config | Other Range Snap | Perp |

| | | |
|---|---|---|
| DisplayCCInInches | Display C/C In Inches (12”) rather then feet (1’) | Yes |
| RangeNumBarsIncValue | Minimum decimal fraction for inclusion in no. bars calc for ranges | 0 |
| AutoTaperedStepping | Allow Automatic Step Tapering | Yes |
| SteppingValue | Value for Automatic Step Taper | ~mm~0.0 |
| SteppingIncOrDec | Stepping Inclined or Declined | Inclined |
| UseRunSizeFact | Bars in section below a certain diameter drawn oversize | No |
| UseRunSizeFactUnderSize | | |
| RunSizeFact | Size for the bar in section to be drawn if using RunSizeFactor | 0.3 |
| DrawRunsProportionalToBarSize | | No |
| RcDotBlock | BlockName inserted for RC Dot | rc-dot |
| AlwaysPickTaperedBar | | No |
| DisplayRunoutDimensions | | No |
| DisplayRangeBarPointers | | No |
| UseRangeEndBlockAsDot | | No |

| | | | |
|---|---|---|---|
| RangeTxtStyle | | | romans |
| RangeTxtHeight | | | ~mm~2.0 |
| DisplayRangeBarPointers | | | No |
| RangeBarPointersBlock | | | |
| RangeEndBlock | | | |
| DoubleIndicatorRangeEndBlock | | | |
| RangeTxtWidthFactor | | | |

| **GCONFIG SETTING** | **DIALOG Equiv (if relevant)** | **DESCRIPTION** | **DEFAULT** |
|---|---|---|---|
| **[RangeText]** | | | |
| SingleIndicatorRangeTxtFormat1 | | | ($NOBAR) |
| SingleIndicatorRangeTxtAlignment1 | | | Right(Above) |
| SingleFixedPitchRangeTxtFormat1 | | | ($NOBAR) |
| SingleFixedPitchRangeTxtAlignment1 | | | Right(Above) |
| SingleMultiplePitchRangeTxtFormat1 | | | ($NOBAR@$CENTR) |
| SingleMultiplePitchRangeTxtAlignment1 | | | Middle(Above) |
| AlternateSingleFixedPitchRangeTxtFormat1 | | | ($ALTNOBAR1+$ALTNOBAR2) |

| | |
|---|---|
| AlternateSingleFixedPitchRangeTxtAlignment1 | Right(Above) |
| AlternateMultiplePitchRangeTxtFormat1 | ($ALTNOBAR1+$ALTNOBAR2) |
| AlternateMultiplePitchRangeTxtAlignment1 | Right(Above) |
| StaggeredFixedPitchRangeTxtFormat1 | ($NOBAR) |
| StaggeredFixedPitchRangeTxtAlignment1 | Right(Above) |
| StaggeredMultiplePitchRangeTxtFormat1 | ($NOBAR@$CENTR) |
| StaggeredMultiplePitchRangeTxtAlignment1 | Middle(Above) |
| SingleIndicatorRangeTxtFormat2 | |
| SingleIndicatorRangeTxtAlignment2 | |
| SingleFixedPitchRangeTxtFormat2 | |
| SingleFixedPitchRangeTxtAlignment2 | |
| SingleMultiplePitchRangeTxtFormat2 | |
| SingleMultiplePitchRangeTxtAlignment2 | |
| AlternateSingleFixedPitchRangeTxtFormat2 | |
| AlternateSingleFixedPitchRangeTxtAlignment2 | |
| AlternateMultiplePitchRangeTxtFormat2 | @$CENTR |
| AlternateMultiplePitchRangeTxtAlignment2 | Right(Below) |

| | |
|---|---|
| StaggeredFixedPitchRangeTxtFormat2 | |
| StaggeredFixedPitchRangeTxtAlignment2 | |
| StaggeredMultiplePitchRangeTxtFormat2 | |
| StaggeredMultiplePitchRangeTxtAlignment2 | |
| TaperedRangeTxtFormat1 | |
| TaperedRangeTxtAlignment1 | Left(Above) |
| TaperedRangeTxtFormat2 | ($SUFX2) |
| TaperedRangeTxtAlignment2 | Right(Above) |
| Orientationtolerance | 10 |
| AlternateRangeTxtFormat1 | |
| AlternateRangeTxtAlignment1 | |
| AlternateRangeTxtFormat2 | |
| AlternateRangeTxtAlignment2 | |

**[Miscellaneous]**

| | |
|---|---|
| EditReactorQuickPromptStyle=No | No |

| | | |
|---|---|---|
| Set2ViewLabDel | Delete First of second label when a set changed to view | first |
| BarUtlPathAndName | | scutils.txt |
| LapDefsPath | n/a | |
| UseRcAsAcad | Sketch Mode On/Off | No |
| CheckForDataBases | Check for 2 or more RC databases on drawing | yes |
| RadiusCheck99 | n/a | yes |
| LengthRulesPathAndName | n/a | maxlens.rle |
| SaveAsPre510 | n/a | no |
| RestoreLibOrder | n/a | yes |
| DCLFile | Dialog Control File | uk.dcl |
| GhostImagesOnMove | Ghosted Images appear on Move | No |
| MasterProjectDirectory | | |
| OnlineFeature | | On |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|

| | | | |
|---|---|---|---|
| **[AboutBox]** | | | |
| StaticSlideName | --- | n/a | cadslogo |
| NumberOfSlides | --- | n/a | 20 |
| SlideNamePrefix | --- | n/a | logo |
| SlideLibraryName | --- | n/a | logo |
| AnimationSpeed | --- | n/a | 1.0 |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[LayerAliasManager]** | | | |
| Status | | Layer Aliasing On/Off | 0 |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[MemorySavers]** | | | |
| UsingCADS-SC | | Contact CADS | Yes |
| UsingCouplers | | Contact CADS | No |
| UpdateDependants | | Contact CADS | Yes |
| NumberTapered | | Contact CADS | 705 |

| | | | |
|---|---|---|---|
| UsingOldTapered | | Contact CADS | No |
| NotShownUnLabeledBars | | Contact CADS | No |
| EnableRecNoUpdate | | Contact CADS | No |
| ChangeToDBLayer | | Contact CADS | No |

| **GCONFIG SETTING** | **DIALOG Equiv (if relevant)** | **DESCRIPTION** | **DEFAULT** |
|---|---|---|---|
| **[Couplers]** | | | |
| Leg1AttachSymbol | COUPLER Config | Symbol default setting | Both |
| Leg2AttachSymbol | COUPLER Config | Symbol default setting | Both |
| ReducerText | COUPLER Config | Default Text | |
| Line1Text | COUPLER Config | Default Text | $MANUF $CTYPE Coupler |
| Line2Text | COUPLER Config | Default Text | |
| Line3Text | COUPLER Config | Default Text | |
| ThreadLine1Text | COUPLER Config | Default Text | Thread bar end to suit |
| ThreadLine2Text | COUPLER Config | Default Text | $MANUF Type $CTYPE. |
| ThreadLine3Text | COUPLER Config | Default Text | |

| | | | |
|---|---|---|---|
| DefManuf | COUPLER Config | Default Text | Ancon CCL TAPERED THREAD Standard |
| HTMLFilePath | | | |
| CplFilePath | | | |
| TotalEndConditions | | | 3 |
| CouplerFolder | | | |

| **GCONFIG SETTING** | **DIALOG Equiv (if relevant)** | **DESCRIPTION** | **DEFAULT** |
|---|---|---|---|
| **[CouplersConfig]** | | | |
| TensionSymbol | COUPLER Config | Drawing to be inserted for Tension Block | tension.dwg |
| CompressionSymbol | COUPLER Config | Drawing to be inserted for Compression Block | compress.dwg |
| ThreadSymbol | COUPLER Config | Drawing to be inserted for Thread Block | thread.dwg |
| CouplerLengthFact | COUPLER Config | Default scaling factor | ~mm~5.0 |
| CouplerWidthFact | COUPLER Config | Default scaling factor | ~mm~2.0 |
| TensionLayer | COUPLER Config | Tension Layer | couplay |
| CompressionLayer | COUPLER Config | Compression Layer | couplay |
| ThreadLayer | COUPLER Config | Thread Layer | couplay |

| | | | |
|---|---|---|---|
| RealCouplerSize | COUPLER Config | Draw Coupler Symbol True Size | No |
| LabelLayer | COUPLER Config | Label Layer | couplay |
| LabelTStyle | COUPLER Config | Label Text Style | romans |
| LabelHeight | COUPLER Config | Label Height | ~mm~2.0 |
| HeightBetweenTxt | COUPLER Config | Between Distance | ~mm~1.0 |
| LabelWFactor | COUPLER Config | Label Width Factor | 1 |
| SymbolORlabel | COUPLER Config | Information of prnted schedule slide | Both |
| SchedExtra | COUPLER Config | Addition on printed schedule | No |
| DefSchedExtra | COUPLER Config | Default addition on printed schedule | ~mm~25.0 |
| CouplerTolerance | COUPLER Config | Dimension tolerance on printed schedule | No |
| DefTolerance | COUPLER Config | Default dimension tolerance on printed schedule | ~mm~-25.0 |
| BlocksDir | COUPLER Config | Couplers Block directory | ukcplrs |
| AnnotationChangesRelease | COUPLER Config | Add coupler changes release code | No |
| CouplerLayer | COUPLER Config | | couplay |
| AutoAttachLabel | COUPLER Config | | No |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[Grid]** | | | |
| OffsetGridLines | --- | | ~mm~50.0 |
| OffsetDimLines | --- | | ~mm~50.0 |
| OffsetBalloonCC | --- | | ~mm~11.0 |
| DistBetweenGrid | --- | | ~mm~5000.0 |
| SubLineOffset | --- | | ~mm~5.0 |
| GridLayer | --- | | 0-35TEXT |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[MatchBars]** | | | |
| StraightTolerance | Bar Config - Rounding/Match Bars | Tolerance allowed for matching straight bars | ~mm~0.0 |
| BentBarDimTolerance | Bar Config - Rounding/Match Bars | Tolerance allowed for matching bent bars | ~mm~6.35 |
| SelectLengthTolerance | Bar Config - Rounding/Match Bars | Tolerance for Select/Show bars | ~mm~1.0 |
| SuppressQuestions | Bar Config - Rounding/Match Bars | | No |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[Rounding]** | | | |
| RndDir | BAR Config - Rounding/Match Bars | Rounding Direction (1.0 is UP, 0.0 is Nearest, -1.0 is DOWN) | 0 |
| RndVal | BAR Config - Rounding/Match Bars | Rounding Value | 5 |
| LenRndDir | BAR Config - Rounding/Match Bars | Length Rounding Direction | 1 |
| LenRndVal | BAR Config - Rounding/Match Bars | Length Rounding Value | 25 |
| StraightRndDir | BAR Config - Rounding/Match Bars | Straight Bar Rounding Direction | 1 |
| StraightRndVal | BAR Config - Rounding/Match Bars | Straight Bar Rounding Value | 25 |
| StraightLenRndDir | BAR Config - Rounding/Match Bars | Straight Bar Length Rounding Direction | 1 |
| StraightLenRndVal | BAR Config - Rounding/Match Bars | Straight Bar Length Rounding Value | 25 |
| LapDir | --- | Lap Rounding Direction | 1 |
| LapVal | --- | Lap Rounding Value | 25 |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[StockBars]** | | | |
| MaxStockLength | Bar Config - Advanced - Stretch to Stock Defaults | Maximum Stock length | 12000 |
| DefaultLapType | Bar Config - Advanced - Stretch to Stock Defaults | Lap Types | 30d |
| OffsetBars | Bar Config - Advanced - Stretch to Stock Defaults | Bar Offset | ~mm~3.0 |
| AutoLabelInsert | Bar Config - Advanced - Stretch to Stock Defaults | Labels Inserted | Yes |
| AskForLap | Bar Config - Advanced - Stretch to Stock Defaults | Prompt for Lap | Yes |
| StraightBar | Bar Config - Advanced - Stretch to Stock Defaults | Straight Bar | 10 |
| StraightBarDim | Bar Config - Advanced - Stretch to Stock Defaults | Straight Bar Dimension | A |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[OverStockLength]** | | | |
| UseOverStockLength | | | Yes |
| OverStockLength | | | 12000 |
| MaxStockLength | | | 20000 |
| MaxStretchLength | | | 120000 |
| LapPosition | | | 1 |
| StaggerLap | | | 0 |
| StaggerOffset | | | 500 |
| LapLength | | | 500 |
| LabelOption | | | 1 |
| LabelPlacing | | | 1 |
| LblBarDistance | | | 20 |
| LblBarDistanceMin | | | 5 |
| LblBarDistanceMax | | | 100 |
| RangeLineForAllBars | | | 0 |
| LabelNotes1 | | | With |

| | |
|---|---|
| LabelNotes2 | And |
| LabelNotes3 | Continuous |
| GroupLayer | rebars |
| LastBarOption | 2 |
| OverLength | 1500 |
| OverLengthMin | 0 |
| BarOffset | 2 |
| BarOffsetMin | 1 |
| BarOffsetMax | 5 |
| MaxLapLength | 6000 |
| LabelPlacingFactor | 0.25 |
| RangeLineFactor | 0.5 |
| UseCurrentStockLengthForManualSplicing | No |
| MoveOSLGroup | No |
| RotateOSLGroup | No |
| SupportedShapes | 12 |
| Shape1 | 10 |

| | |
|---|---|
| Shape1NumDims | 1 |
| Shape1Dim1 | A |
| Shape1Dim | A |
| Shape1StartBarShape | 10 |
| Shape1EndBarShape | 10 |
| Shape1NumberOfHooks | 0 |
| Shape1NumberOfBendDia | 0 |
| Shape2 | 11 |
| Shape2NumDims | 1 |
| Shape2Dim1 | A |
| Shape2Dim | A |
| Shape2StartBarShape | 11 |
| Shape2EndBarShape | 10 |
| Shape2NumberOfHooks | 1 |
| Shape2NumberOfBendDia | 0 |
| Shape3 | 12 |
| Shape3NumDims | 1 |

| | |
|---|---|
| Shape3Dim1 | A |
| Shape3Dim | A |
| Shape3StartBarShape | 11 |
| Shape3EndBarShape | 11 |
| Shape3NumberOfHooks | 2 |
| Shape3NumberOfBendDia | 0 |
| Shape4 | 13 |
| Shape4NumDims | 1 |
| Shape4Dim1 | A |
| Shape4Dim2 | A |
| Shape4Dim3 | 13 |
| Shape4Dim | 10 |
| Shape4StartBarShape | 1 |
| Shape4EndBarShape | 1 |
| Shape4NumberOfHooks | Yes |
| Shape4NumberOfBendDia | 12000 |
| Shape5 | 14 |

| | |
|---|---|
| Shape5NumDims | 1 |
| Shape5Dim1 | A |
| Shape5Dim | A |
| Shape5StartBarShape | 13 |
| Shape5EndBarShape | 13 |
| Shape5NumberOfHooks | 2 |
| Shape5NumberOfBendDia | 2 |
| Shape6 | 100 |
| Shape6NumDims | 1 |
| Shape6Dim1 | A |
| Shape6Dim | A |
| Shape6StartBarShape | 10 |
| Shape6EndBarShape | 10 |
| Shape6NumberOfHooks | 0 |
| Shape6NumberOfBendDia | 0 |
| Shape7 | 105 |
| Shape7NumDims | 1 |

| | |
|---|---|
| Shape7Dim1 | A |
| Shape7Dim | A |
| Shape7StartBarShape | 11 |
| Shape7EndBarShape | 10 |
| Shape7NumberOfHooks | 1 |
| Shape7NumberOfBendDia | 0 |
| Shape8 | 106 |
| Shape8NumDims | 1 |
| Shape8Dim1 | A |
| Shape8Dim | A |
| Shape8StartBarShape | 11 |
| Shape8EndBarShape | 11 |
| Shape8NumberOfHooks | 2 |
| Shape8NumberOfBendDia | 0 |
| Shape9 | 102 |
| Shape9NumDims | 1 |
| Shape9Dim1 | A |

| | |
|---|---|
| Shape9Dim | A |
| Shape9StartBarShape | 13 |
| Shape9EndBarShape | 10 |
| Shape9NumberOfHooks | 1 |
| Shape9NumberOfBendDia | 1 |
| Shape10 | 103 |
| Shape10NumDims | 1 |
| Shape10Dim1 | A |
| Shape10Dim | A |
| Shape10StartBarShape | 13 |
| Shape10EndBarShape | 13 |
| Shape10NumberOfHooks | 2 |
| Shape10NumberOfBendDia | 2 |
| Shape11 | 110 |
| Shape11NumDims | 2 |
| Shape11Dim1 | A |
| Shape11Dim2 | B |

| | |
|---|---|
| Shape11Dim | B |
| Shape11StartBarShape | 110 |
| Shape11EndBarShape | 10 |
| Shape11NumberOfHooks | 0 |
| Shape11NumberOfBendDia | 1 |
| Shape12 | 132 |
| Shape12NumDims | 3 |
| Shape12Dim1 | A |
| Shape12Dim2 | B |
| Shape12Dim3 | C |
| Shape12Dim | B |
| Shape12StartBarShape | 110 |
| Shape12EndBarShape | 110 |
| Shape12NumberOfHooks | 0 |
| Shape12NumberOfBendDia | 2 |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[Tolerances]** | | | |
| ToleranceRules | BAR Config - Tolerance Rules… | Contact CADS | |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[OverridingBarRadii]** | | | |
| OverrideBarRadii | | | No |
| rcen | | | 0 |
| rad | | | 1.0 |
| r | | | 0 |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[ProjectSettings]** | | | |
| InProjectMode | | | No |
| ImperialTemplateDwg | | | ..\support\cadsimp.dwt |
| MetricTemplateDwg | | | ..\support\cadsiso.dwt |
| DrawingSetupDllPath | | | ..\cads-sc\cads-sc.arx |

| | | | |
|---|---|---|---|
| DrawingSetupDll | | | cads-sc.arx |
| DrawingSetupFunctionCall | | | CadsSetup |
| DefFileRulesFile | | | cads-rc.dfr |
| MMConfigurationFile | | | IS2502_config.xml |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[AccessoriesListConfig]** | | | |
| ListLayerName | | | 0-25TEXT |
| BlockHeaderHeight | | | 5 |
| BlockListHeight | | | 5 |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[Slide]** | | | |
| SlideLibName | | | IS2502.slb |
| DestinationFolder | | | INDIA |
| BlockScaleFactor | | | 10 |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[WmfConfiguration]** | | | |
| WmfTextScaleFactor | | | 2 |
| WmfTextFontName | | | Arial |
| WmfTextWeight | | | 700 |
| WmfPenThickness | | | 10 |
| GenerateWmfFromDwg | | | Yes |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[TitleBlockConfig]** | | | |
| AutoSearchTitleBlock | | | Yes |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[IS2502_BBDM]** | | | |
| HOOK90 | | | B4 |
| HOOK135 | | | Q10 |
| HOOK180 | | | H4 |

| | |
|---|---|
| NMIN_HOOK90 | BDrawLen4 |
| NMIN_HOOK135 | QDrawLen4 |
| NMIN_HOOK180 | HDrawLen4 |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[COUPLERSYMBOLANDGRADE]** | | | |
| NOOFSYMBOLS | | | 9 |
| SYMBOLNAME1 | | | MaleCoupler.dwg |
| SYMBOLNAME2 | | | FemaleCoupler.dwg |
| SYMBOLNAME3 | | | Terminator.dwg |
| SYMBOLNAME4 | | | LongThread.dwg |
| SYMBOLNAME5 | | | CouplerWithLongThread.dwg |
| SYMBOLNAME6 | | | FormSaver.dwg |
| SYMBOLNAME7 | | | Positional.dwg |
| SYMBOLNAME8 | | | Positional_FP.dwg |
| SYMBOLNAME9 | | | CouplerWithThread.dwg |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[RELEASEANDORDERING]** | | | |
| ALLOWSUBRELEASE | | | NO |
| SPLITSUBRELEASEBY | | | - |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[ExtraLabelNotes]** | | | |
| HideExtraLabelNotes1 | | | No |
| HideExtraLabelNotes2 | | | No |
| HideExtraLabelNotes3 | | | No |
| HideExtraLabelNotes4 | | | No |

| GCONFIG SETTING | DIALOG Equiv (if relevant) | DESCRIPTION | DEFAULT |
|---|---|---|---|
| **[BarGrades]** | | | |
| GradesSupportingFractionalSizes | | | |