

RoadPro

Complete User Manual

Every command and every setting, step by step from start to finish

Version 3.3 • 12 October 2026

Type

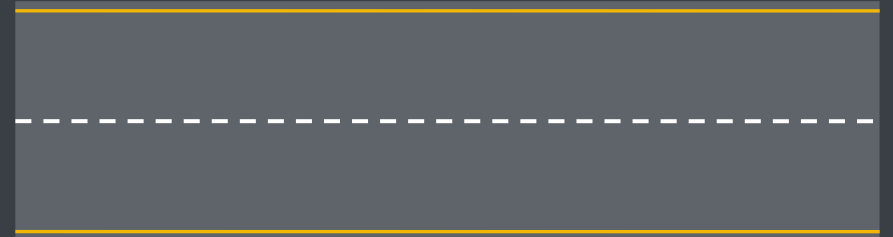
RDP

to build a road

Developed by <https://www.exceltokml.com/>

One road, three edge treatments

BARRICADES



TRAFFIC CONES



KERB STONE



What is inside this manual



Getting started

Slides 3 – 8

What RoadPro draws, new in 3.3, install, commands, workflow, drawing setup



Build the road • RDP

Slides 9 – 18

Step by step, the dialog, every setting, barricades / cones / kerb, layers



Curves, signs, markings, sections

Slides 19 – 22

RDRAD, RDSEC, signage, RDM road markings, RDX cross sections



Widen and taper

Slides 23 – 25

RDW lane widening, both sides, chainage input, RDT road taper



Junctions • RDJ

Slides 26 – 29

Step by step, settings, corner barricades / cones / kerb, aux lane, island



Single line • RDL (new)

Slides 30 – 31

One run of barricades, cones or kerb stone on any line



Report • RDR

Slides 32 – 33

Command line summary, Excel (CSV) file and drawing tables

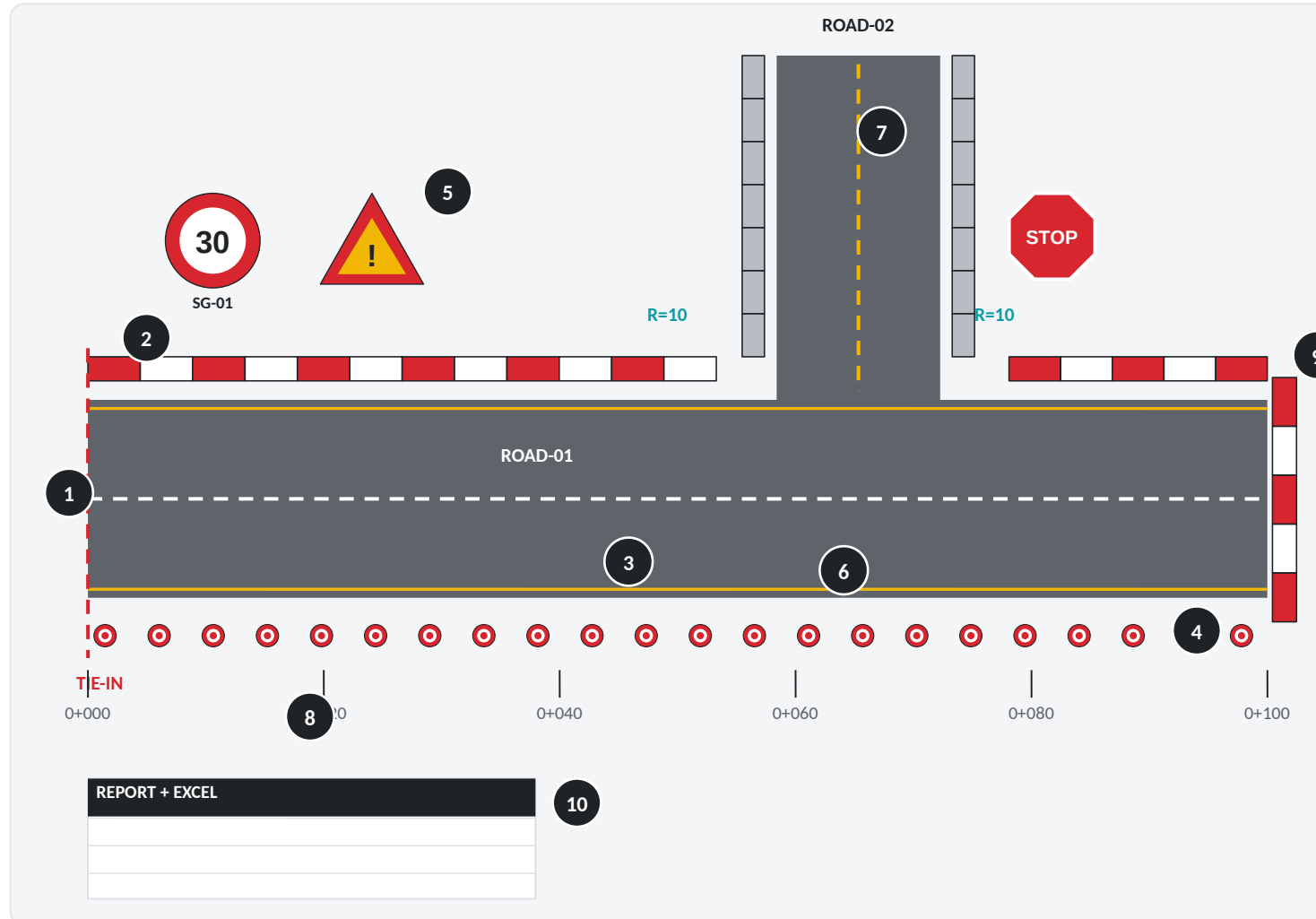


Reference

Slides 34 – 37

Worked example, standard values, troubleshooting, quick reference

One centre line in, a complete road drawing out



- 1 **Tie-in or road closed end**
E / N on the tie-in line, or barricade + ROAD CLOSED board
- 2 **Edge treatment**
Barricades, traffic cones or kerb stone, per side
- 3 **Road surface and markings**
Hatch, white centre line, yellow L4 edge lines, arrows
- 4 **Cones / kerb anywhere**
Same units, also in junction corners and RDL single lines
- 5 **Signs with IDs**
Speed, warning, road works, STOP / GIVE WAY, sign schedule
- 6 **Centre line + radius**
CL linetype, R, TC / CT, curve data, straights S1, S2
- 7 **Junction (RDJ)**
Branch road, kerb returns, corner treatment, aux lane, island
- 8 **Chainage**
Ticks and labels at your interval from your start chainage
- 9 **Widening and taper**
RDW extra lane, RDT width change, treatment follows
- 10 **Report**
Quantities, setting-out E / N, sign schedule, Excel file

What is new in version 3.3

NEW COMMAND

RDL • Single line

Place one run of barricades, traffic cones or kerb stone along any line, polyline, arc, spline, circle or ellipse. Centred, offset left, right or both sides, from / to distance, quantity label. See slides 30 – 31.



RDJ

Junction corner treatment

A new Corner treatment setting: Same as main road, Barricades, Traffic cones or Kerb stone around the kerb returns. The count is printed and added to the road. See slide 28.



RDW • RDT

Cones and kerb follow changes

Lane widening and road taper now move traffic cones and kerb stone to the new edge, not only barricades. Removed units are taken out of the count.



RDP • RDR

Kerb units and cone band

Kerb stone is drawn as separate units (outline per unit, layer ROAD-KERB). Cones get their white reflective band on ROAD-CONE-BAND. Report shows cones (nos) and kerb (m) per side.

Upgrading from 3.2? Load the new RoadPro.lsp with APPLOAD (replace the old file in the Startup Suite). Your saved settings are kept. Roads drawn with 3.2 work with every 3.3 command.

Install and load RoadPro

1

Copy the file to a fixed folder

Save RoadPro.lsp in a folder that will not move, for example C:\RoadPro\

2

Type APPLOAD in AutoCAD

Browse to RoadPro.lsp, select it and press Load. Close the dialog.

3

Check the load message

The command line shows Road Pro v3.3 loaded with all the short commands.

4

Load it every time (recommended)

APPLOAD → Startup Suite → Contents → Add → pick RoadPro.lsp → Close.

5

Security warning?

Choose Always Load, or add the folder in OPTIONS → Files → Trusted Locations.

6

Start working

Type RDP and press Enter. The ROAD PRO dialog opens.

Command: **APPLOAD**

RoadPro.lsp successfully loaded.

Road Pro v3.3 loaded. ROADPRO (RDP) = build road

ROADREPORT (RDR) = report | ... |

ROADLINE (RDL) = single line

Developed by <https://www.exceltokml.com/>

Requirements

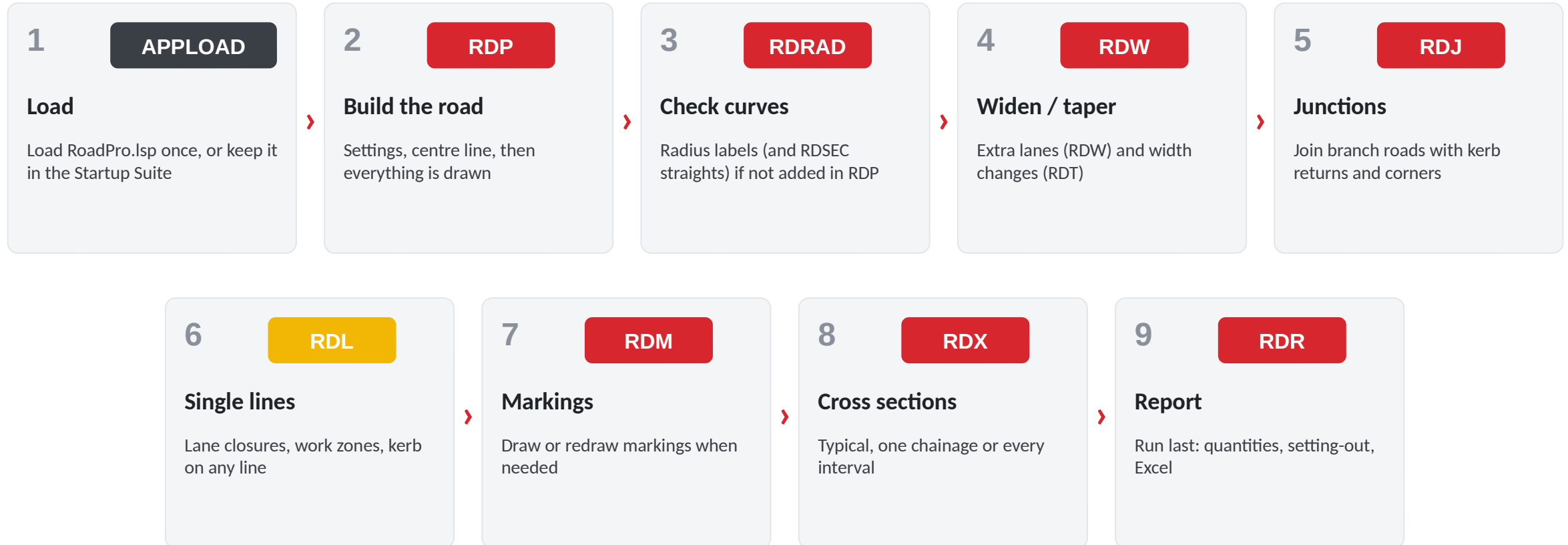
- Full AutoCAD 2014 or newer on Windows (also Civil 3D, Map 3D). AutoCAD LT cannot run LISP.
- Drawing in metres (1 unit = 1 m) or millimetres (1 unit = 1 mm).
- Settings are remembered between sessions on this PC. ROADPRORESET restores the defaults.
- Every command is one UNDO step: type U to take back a whole run.

All commands and short keys

Short	Full command	What it does	You select
RDP	ROADPRO	Build a complete road from a centre line (dialog with all settings)	Pick points, or an existing line
RDR	ROADREPORT	Report on screen, Excel (CSV) file and tables in the drawing	Road centre line
RDRAD	ROADRADIUS	Radius, TC / CT and curve data labels on every curve	Road centre line
RDSEC	ROADSECTIONS	Straight sections S1, S2 ... with length, area, chainage, bearing	Road centre line
RDX	ROADXSEC	Cross sections: typical, at one chainage, or at every interval	Road centre line
RDW	ROADWIDEN	Extra lane (widening) with tapers, one side or both sides	Road centre line
RDT	ROADTAPER	Change the road width from a chainage onward	Road centre line
RDJ	ROADJUNCTION	Join a branch road: kerb returns, corner treatment, signs, aux lane, island	MAIN road centre line
RDM	ROADMARK	Draw or remove road markings	Road centre line
RDL	ROADLINE	NEW Single line of barricades, cones or kerb stone on any line	Lines, polylines, arcs, splines
—	ROADPRORESET	Restore every setting to the default values	—

Tip Type the short or the full name. Enter or Space repeats the last command. Only roads built by RoadPro carry the data the other commands need: select the red CL on layer ROAD-CL.

The workflow from start to finish



Run RDR last The report reads everything stored on the centre line, so it includes widenings, tapers, junctions and markings. RDL lines are separate: their totals print on the command line and in the label.

Before you start: prepare the drawing

Checklist

Units. Decide 1 unit = 1 m (default) or 1 unit = 1 mm and set Drawing units in RDP. Values in all dialogs are always typed in metres. RDL uses the same setting.

Direction. Draw the centre line in the chainage direction. The first point is the start chainage.

One object. Use one Line, Arc or 2D (LW) Polyline with straight and arc segments. Join pieces first with JOIN; explode blocks.

Survey points. Turn on OSNAP and snap the CL to your design or survey points.

Space and UCS. Work in model space. RoadPro switches to the World UCS while it runs and restores yours.

Save the DWG. Save before RDR: the Excel (CSV) file is written next to the drawing.

Left and right, and chainage

LEFT side



START 0+000

RIGHT side

END

- Left / right are seen looking along the CL from its start point. Traffic keeps right.
- Chainage can be typed as 150 or 0+150, and 1250.5 or 1+250.500.
- Chainages are real road chainages: a road that starts at 1+000 has its widening at 1+150, not at 150.

Build a road step by step

1

Type RDP and press Enter

The ROAD PRO dialog opens with your last settings.

2

Road Geometry

Road name, width, turning radius, drawing units, centre line input.

3

Road Edge and Centre

Left / right edge, Barricades, Traffic cones or Kerb stone, centre, sizes, shoulder.

4

Signs and Markings

Speed, warning signs, control at tie-in, sign set.

5

Surface, Chainage, Road Ends and Report

Hatch, centre marking, chainage interval and start, end types, report, section.

6

Press OK, then give the centre line

Pick points: click points, A = arc, L = line, U = undo, Enter = finish. Select existing: click the line.

7

RoadPro builds the road

Edges, surface, treatment, markings, signs, chainage, radius, ends. Summary printed.

8

Report and section

Excel saved → pick a corner for tables (Enter skips) → open Excel? → pick a point for the typical section (Enter skips).

```
Command: RDP
(dialog: settings, press OK)
Draw the road centre line
(Arc option allowed, Enter to finish):
Specify start point: pick
Specify next point or [Arc/...]: pick
Specify next point or [Arc/...]: A
Specify end point of arc: pick
Specify end point of arc or [Line]: L
Specify next point: Enter
===== ROAD PRO - ROAD-01 =====
Road width : 7.30 m ...
Excel report saved : C:\...\ROAD-01_RoadPro_Report.csv
Pick top-left corner for report tables
<Enter = skip>: pick
Open the Excel report now? [Yes/No] <Yes>: Y
Pick point for the TYPICAL CROSS SECTION
centre line <Enter = skip>: pick
```

The RDP dialog at a glance (default values shown)

ROAD PRO - Road Builder for AutoCAD v3.3

1 Road Geometry

Road name / ID: ROAD-01
Road width (m): 7.30
Turning radius: Match existing
Manual radius (m): 10.0
Radius measured at: Centre line (CL)
Drawing units: Meters
Centre line input: Pick points
☒ Show radius, TC / CT and curve data
☒ Show straight sections (S1, S2...)

2 Road Edge and Centre

☒ Left edge ☒ Right edge
Edge: Barricades (red / white)
Centre: Centre line markings
Unit length / cone spacing (m): 2.00
Unit / cone / kerb width (m): 0.50
Paved shoulder (m): 0.50

3 Signs and Markings

☒ Speed limit 30 km/h
☒ Bend ahead before (m) 30
☒ Road works ahead (with plate)
☒ Chevron boards on bends
☒ Keep right at median
☒ Lane direction arrows
At tie-in: STOP sign
☒ Two-way traffic (signs both ways)
☒ Sizes and distances by speed (HDS)
Sign set: Temporary
Symbol (m) / Spacing (m): 2.0 / 15

4 Surface and Centre Line

☒ Hatch road surface
Hatch pattern / scale: SOLID / 1.0
☒ Show CL text in centre line
☒ Road markings (centre + edge)
Centre marking: Standard L1/L2/L2A
☐ SLOW markings before bends
☒ Delineator posts on curves

5 Chainage

☒ Add chainage ticks and labels
Interval (m): 20
Start chainage (m): 0
Text height (m): 1.0
Panels 1 – 6 are explained one by one on slides 11 – 17

6 Road Ends and Report

Start end: Tie-in line
Finish end: Tie-in line
☒ Report tables + Excel (CSV) file
☒ Typical cross section drawing

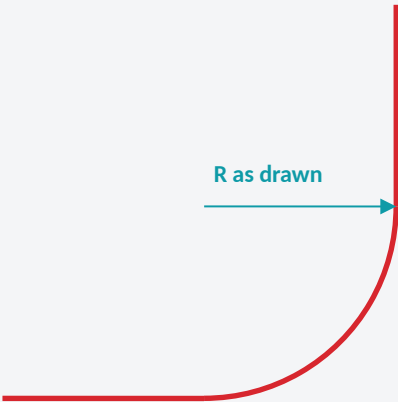
Road Geometry settings

Setting	Options (default)	What it does
Road name / ID	ROAD-01	Name on labels, report title and the Excel file name ROAD-01_RoadPro_Report.csv. Use a new name for each road.
Road width (m)	7.30	Full carriageway width, edge to edge; half on each side of the CL. Paved shoulder is added outside it.
Turning radius	Match existing (keep CL as drawn) / Manual radius at every bend	Match existing keeps your arcs exactly. Manual puts the radius below into every corner of the CL.
Manual radius (m)	10.0	Used only with Manual radius (greyed out otherwise).
Radius measured at	Centre line (CL) / Inner edge (kerb line)	Only with Manual radius. Inner edge: the value is the kerb radius and the CL radius becomes $R + \text{half width}$.
Drawing units	Meters / Millimeters	1 unit = 1 m or 1 unit = 1 mm. Every value in every dialog is still typed in metres.
Centre line input	Pick points (draw new) / Select existing Line/Pline/Arc	Draw the CL after OK, or click a centre line already in the drawing.
Show radius, TC / CT and curve data	On	Radius arrow and value, TC / CT ticks with chainage, curve data box (same as RDRAD).
Show straight sections (S1, S2...)	On	Extent bar with length, area, chainage range and bearing for every straight (same as RDSEC).

Tip Using a CL from the designer? Keep Match existing. Drawing a quick site road with sharp corners? Choose Manual radius and RoadPro rounds every bend for you.

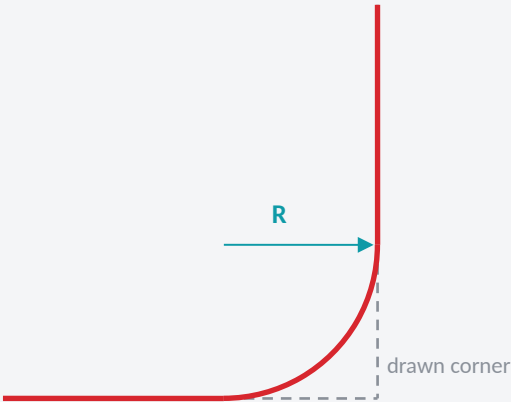
Turning radius: the two options explained

Match existing



Your arcs are kept exactly as drawn. Corners without an arc stay sharp.

Manual radius at every bend



Sharp polyline corners get the Manual radius. Good for quick site roads.

Radius measured at

Width 7.30 m	R typed = 10
At CL: inner edge	6.35 m
At CL: centre line	10.00 m
At CL: outer edge	13.65 m
Inner edge: inner	10.00 m
Inner edge: CL	13.65 m
Inner edge: outer	17.30 m

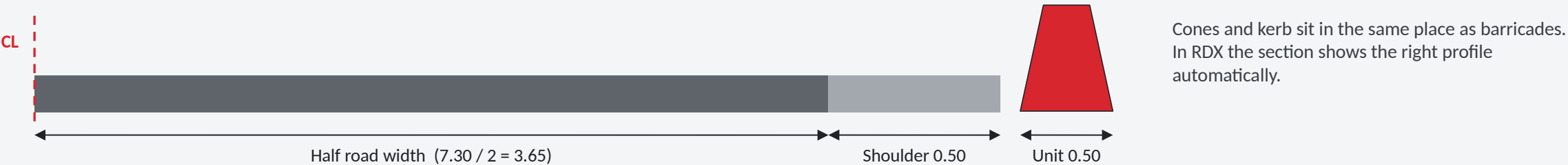
Use Inner edge when the drawing gives a kerb radius.

Rule The CL radius must be larger than half the road width + paved shoulder + unit width, otherwise the inside treatment folds over itself. Example: 7.30 m road, 0.50 shoulder, 0.50 units → CL radius more than $3.65 + 0.50 + 0.50 = 4.65$ m. RoadPro prints a warning if a bend is too tight: increase the radius or reduce the width / shoulder.

Road Edge and Centre settings

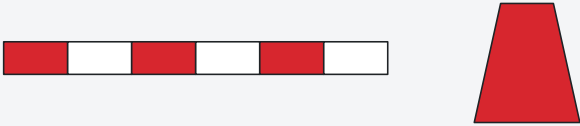
Setting	Options (default)	What it does
Left edge / Right edge	Both on	Which sides get the edge treatment. Untick one side for a road along a wall, a fence or an existing kerb.
Edge	Barricades (red / white) / Traffic cones / Kerb stone	What is placed along the edges, outside the paved shoulder.
Centre	Centre line markings (no barrier) / Barricades / Traffic cones	Markings only, or a median of barricades or cones on the CL with KEEP RIGHT signs at each nose.
Unit length / cone spacing (m)	2.00	Barricades and kerb: length of one unit. Cones: distance from cone to cone.
Unit / cone / kerb width (m)	0.50	Barricade width, cone base size or kerb width (for kerb use 0.15 - 0.30).
Paved shoulder (m)	0.50	Paved strip between the carriageway edge and the treatment. Hatched, in the section and in the report. 0 = treatment on the edge.

Where each width goes (half section)



How to add barricades, traffic cones or kerb stone

Barricades



- 1 RDP → Road Edge and Centre
- 2 Tick Left edge and / or Right edge
- 3 Edge = Barricades (red / white)
- 4 Unit length 2.00, width 0.50
- 5 OK and draw the CL

Red / white units with black outline. Report: red and white units per side. RDX: water-filled or New Jersey profile with its height.

Traffic cones



- 1 RDP → Road Edge and Centre
- 2 Tick the sides you want
- 3 Edge = Traffic cones
- 4 Unit length = cone spacing, e.g. 3.00
- 5 Width = cone size, e.g. 0.40

Red cones with a white band (ROAD-CONE, ROAD-CONE-BAND). Report: number of cones per side. RDX: 0.75 m cone.

Kerb stone



- 1 RDP → Road Edge and Centre
- 2 Tick the sides you want
- 3 Edge = Kerb stone
- 4 Unit length = kerb unit, e.g. 1.00
- 5 Width = kerb width, e.g. 0.15

Grey kerb units with outline (ROAD-KERB). Report: kerb length in m per side. RDX: kerb with 150 mm upstand.

Median on the centre line

Centre = Barricades or Traffic cones

Treatment follows changes

RDW, RDT and RDJ move or cut it for you

Just one line somewhere?

Use RDL, the single line command (slide 30)

Signs and Markings settings

Setting	Options (default)	What it does
Speed limit km/h	On, 30	Speed limit sign after each entry. The speed also picks HDS sign sizes, warning distances and L1 / L2 patterns.
Bend ahead before (m)	On, 30	Bend warning sign before every curve. With HDS on, the distance comes from the speed (50 – 300 m).
Road works ahead (with plate)	On	Road works triangle with a distance plate at the entry of each direction.
Chevron boards on bends	On	Chevron boards on the outside of every bend.
Keep right at median	On	KEEP RIGHT sign at each nose of a barricade or cone median.
Lane direction arrows	On	White lane arrows on the straights (5.0 m or 7.5 m by speed).
At tie-in	STOP sign / GIVE WAY sign / No sign	Control sign before each tie-in end of the road.
Two-way traffic	On	Signs for both directions. Off = one-way: signs one way and NO ENTRY at the far end.
Sizes and distances by speed (HDS)	On	Plate sizes and warning distances from Oman HDS 2017 Sec. 19 by speed. Off = Symbol and Spacing below.
Sign set	Permanent / Temporary (road works)	Permanent: yellow / black chevrons. Temporary: black / yellow road-works style.
Symbol (m) / Spacing (m)	2.0 / 15	Size of the sign drawing on plan, and the spacing between signs in a group.

Surface and Centre Line settings

Setting	Default	What it does
Hatch road surface	On	Fills the road between the edges.
Hatch pattern	SOLID	Any AutoCAD pattern: AR-CONC, ANSI31 ...
Pattern scale (not SOLID)	1.0	Scale for patterns other than SOLID.
Show CL text in centre line	On	Red CL linetype with the letters CL.
Road markings	On	White centre line and yellow L4 edge lines (same as RDM).
Centre marking	Standard L1 / L2 / L2A	See the three options on the right.
SLOW markings before bends	Off	SLOW written on the road before each bend.
Delineator posts on curves	On	Posts on curves at HDS spacing by radius.

Centre marking options

Standard L1 / L2 / L2A by speed



Double continuous white



Single continuous L2A



Yellow L4 edge lines are drawn in all three cases.

Chainage, road ends and report settings

Chainage

Setting	Default	What it does
Add chainage ticks and labels	On	Tick and label at every interval.
Interval (m)	20	Distance between chainage marks.
Start chainage (m)	0	Chainage of the first CL point. Type 1000 or 1+000.
Text height (m)	1.0	Labels, curve data and report tables.

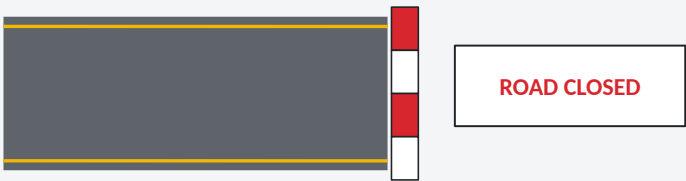
Road Ends and Report

Setting	Default	What it does
Start end / Finish end	Tie-in line	Tie-in line, Road closed or None at each end.
Report tables + Excel (CSV) file	On	Runs the report (RDR) right after the road is built.
Typical cross section drawing	On	Asks for a point to place a typical section (RDX).



Tie-in line (existing road)

Red dashed line across the road with E / N, plus the control sign (STOP / GIVE WAY) set in panel 3.



Road closed (barricade + sign)

Barricade across the full width and a ROAD CLOSED board. Use for dead ends and work limits.



None

The road simply ends. Use when another road or drawing continues it.

Everything on its own layer

Layer	Contents
ROAD-CL	Centre line, red CL linetype (holds the road data)
ROAD-EDGE	Left and right carriageway edges
ROAD-SURFACE	Surface hatch
ROAD-SHOULDER	Paved shoulder hatch
ROAD-BARRIER-RED / -WHITE	Barricade unit fills
ROAD-BARRIER-OUTLINE	Black outline of units
ROAD-CONE / ROAD-CONE-BAND	Traffic cones and white band
ROAD-KERB	Kerb stone units
ROAD-CHAINAGE	Chainage ticks and labels
ROAD-CURVE	Radius, TC / CT, curve data
ROAD-SECTION	Straights S1, S2 ...

Layer	Contents
ROAD-SIGN (-RED -WHITE -YELLOW -BLUE)	Posts, plates and symbols
ROAD-MARKING (-FILL)	White lines, arrows, text
ROAD-MARKING-YELLOW	Yellow L4 edge lines
ROAD-DELINEATOR	Delineator posts on curves
ROAD-TIEIN	Tie-in line and E / N
ROAD-WIDENING	Widening and taper labels
ROAD-JUNCTION	Junction labels, corner R, RDL labels
ROAD-ISLAND	Splitter islands
ROAD-REPORT	Report tables
ROAD-XSEC ...	Cross section parts and text
ROAD-01, ROAD-02 ...	Road name groups

Tip Freeze or turn off layers for clean plots (e.g. ROAD-CHAINAGE). Black outlines look white on a dark screen but plot black.

Radius and straight sections on the plan

RDRAD

Every curve

```
C1
R inner = 10.000 m
R CL    = 13.650 m
R outer = 17.300 m
L (CL)  = 21.441 m
A       = 156.52 m²
Δ       = 90°00'00"
```

Radius line with arrow from the centre point, R on the line, TC and CT ticks across the road with chainage. Layer ROAD-CURVE.

RDSEC

Every straight

```
S1 STRAIGHT
L   = 45.230 m
A   = 330.18 m²
CH  0+012.000 - 0+057.230
BRG 45°12'30"
```

Extent bar with end ticks, label parallel to the road. Bearing is whole-circle from North. Layer ROAD-SECTION.

1

Type RDRAD (or RDSEC)

Select the road centre line on layer ROAD-CL.

2

Labels are added

The command line says how many curves / straights were labelled.

When to use If you switched the labels off in RDP, deleted them, or changed the road with RDW / RDT. Erase the old labels on ROAD-CURVE / ROAD-SECTION first so they are not doubled.

Signage placed automatically, traffic keeps right



Road works ahead

Entry of each direction



Speed limit

One spacing after entry



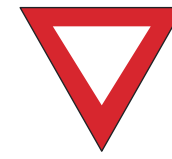
Bend ahead

Distance by speed



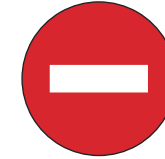
STOP

Before each tie-in



Give way

Option at tie-ins



No entry

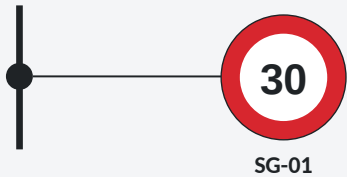
Far end, one-way road



Keep right

Median nose

How each sign is drawn on the plan



Post and plate. Black dot outside the edge treatment; plate faces the traffic.

Leader, symbol and ID. IDs SG-01, SG-02 ... follow the chainage order.

Sizes. By speed (HDS) or your Symbol size.

Also drawn and reported

- Chevron boards on the outside of bends (permanent yellow / black, temporary black / yellow)
- ROAD CLOSED boards at closed ends
- White lane arrows on the straights, delineator posts on curves
- STOP / GIVE WAY on every junction branch (RDJ)
- Sign schedule in the report: ID, sign, plate size, chainage, side, facing, post E / N

Road markings: draw, remove and quantities

1

Type RDM

Select the road centre line.

2

Choose Draw or Remove

Road markings [Draw/Remove] <Draw>: press Enter to draw.

3

Markings are drawn

Centre line by your Centre marking setting, yellow L4 edge lines, bend warnings, arrows, SLOW (if on).

4

Remove

Deletes the markings RDM drew and clears their quantities from the report.

Line	Use	Pattern / size
L1	Lane / centre line	2/6, 3/9, 4/12 m by speed, white
L2	Warning before bends	6/2, 9/3, 12/4 m
L2A	No overtaking, bends, approaches	Continuous
L4	Edge line	Yellow, 120 mm (150 mm over 100 km/h)
L5	Beside an auxiliary lane	1 m / 1 m
L5/3	Across a side road mouth	600 / 300 mm
L7	Stop line	Solid line + STOP text (2.1 m)
L8	Give way	Double broken line + 3.75 x 1.25 m triangle
Arrows	Lane direction	5.0 m or 7.5 m by speed
Report	Quantities	Length per line type and paint area in m ²

Good to know New roads: tick Road markings in RDP and you do not need RDM. RDJ redraws the markings of both roads with the junction gaps and adds turning-area markings.

Cross sections with widths, layers and heights

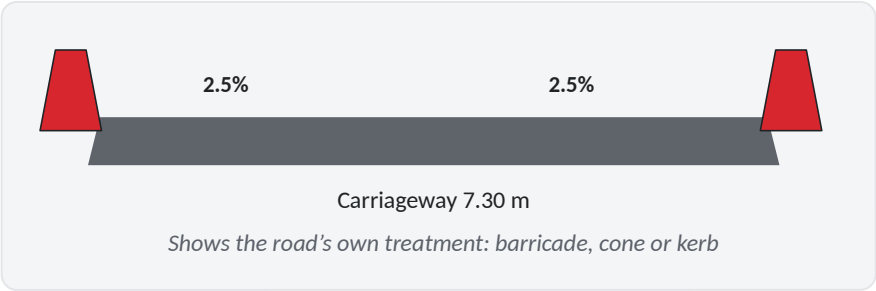
- 1

Type RDX
Select the road centre line.
- 2

Fill the Cross Section dialog
Choose what to draw and set the values (table).
- 3

Pick the placement point
Typical / one chainage: point for the CL at finished level. Every interval: top-left corner of the sheet.
- 4

Sections are drawn
Every interval: 3 per row, up to 60 sections. The note says curve or straight.



Setting	Options (default)	Notes
Draw	Typical / At one chainage / At every chainage interval	Typical = one generic section
Chainage (m)	0	For At one chainage; 0+150 allowed
Interval (m)	20	For every interval
Crossfall (%)	2.5	Carriageway slope
Crossfall type	Camber / One-way falls right / falls left	Camber falls both sides
Verge beyond barricade (m)	1.0	Ground shown outside
Pavement layers 1 - 3	Asphalt 0.05 / Base 0.20 / Sub-base 0.15	Name + thickness; 0 = not used
Barricade profile	Water-filled / New Jersey, height 1.00	Used when the edge is barricades
Sign post	On, clearance 1.50, sign 0.90	Post with height to the plate

Lane widening step by step

- 1

Type RDW, select the road CL

The dialog shows the road chainage range and width.
- 2

Side and size

Side Left / Right / Both, Extra width 3.65 m.
- 3

Where

Start and End chainage of the full-width lane, Taper in 30 m, Taper out 30 m.
- 4

Shape

Taper type straight or curve; Match point fillet (radius 30 m) or direct.
- 5

Options and OK

Move barricades (cones and kerb too), lane arrow, labels and dimension.
- 6

Result

New edge drawn, old edge trimmed, treatment moved, markings and report updated.



Both sides, different chainages, taper shapes and rules

Both sides with different chainage

- Set Side = Both sides. The top block becomes the LEFT side.
- Tick Different chainage on right side: the right gets its own width, start, end, tapers and fillet radius.
- Untick it and both sides use the same values.

Taper type and match point

Straight (linear) taper: straight line from old to new edge.

Curve (reverse-curve) taper: smooth S-shape.

Fillet at match points: rounds the joins with the fillet radius (labelled R=30).

Direct link: sharp joins, no fillet.

Rules that keep it inside the road

- Start – taper in must be at or after the road start.
- End + taper out must be at or before the road end.
- End must be larger than Start.
- Keep junctions away from widened or tapered edges.

Options at the bottom of the dialog

Move barricades to the new edge: barricades, cones or kerb follow the new edge.

Lane arrow in the new lane: white arrow in the widened lane.

Labels, width dimension, match points: text on ROAD-WIDENING with chainages.

Road taper: change the width from a chainage onward

- 1

Type RDT, select the road CL

The dialog shows the chainage range and the design width.
- 2

Side

Left, Right or Both sides (default Both).
- 3

Taper start and end chainage

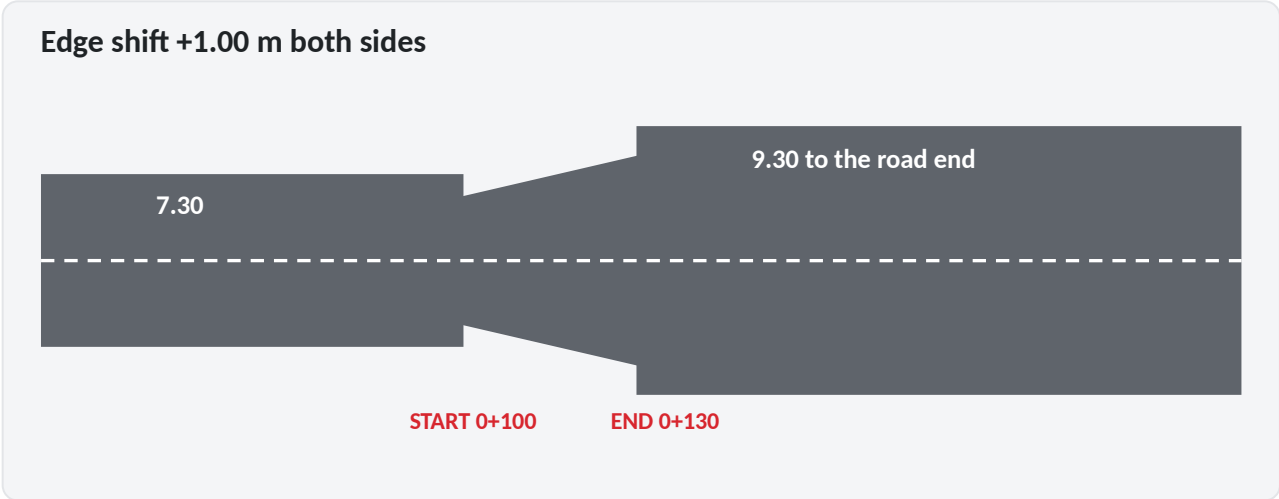
Default 100 and 130: the width changes over these 30 m.
- 4

Edge shift per side (m)

+ = wider road, - = narrower road. +1.00 both sides makes 7.30 → 9.30 m.
- 5

Shape and options, OK

Taper type, match point, fillet radius, barricades follow, labels.



Setting	Default	Notes
Edge shift per side (m)	+1.00	- values narrow the road
Different chainage on right	Off	Own start, end, shift, radius
Taper type / match point	Straight / fillet	Fillet radius 30 m
Barricades follow new edge	On	Cones and kerb too
Labels and match points	On	On ROAD-WIDENING

More tapers? The new width continues to the road end. Run RDT again at another chainage to change it again (e.g. back to 7.30).

Junction / tie-in step by step

1

Build the main road first with RDP

The branch uses your RDP settings for barricades, signs and chainage.

2

Type RDJ, select the MAIN road CL

The Road Junction dialog opens and shows the main road range and width.

3

Joining road (branch)

Branch name ROAD-02, width 7.30, Branch centre line: Draw new or Select existing.

4

Junction settings

Corner radius 10, control STOP / GIVE WAY, corner treatment, turning-area markings.

5

Aux lane and island, then OK

Auxiliary lane on the main road, splitter island on the branch.

6

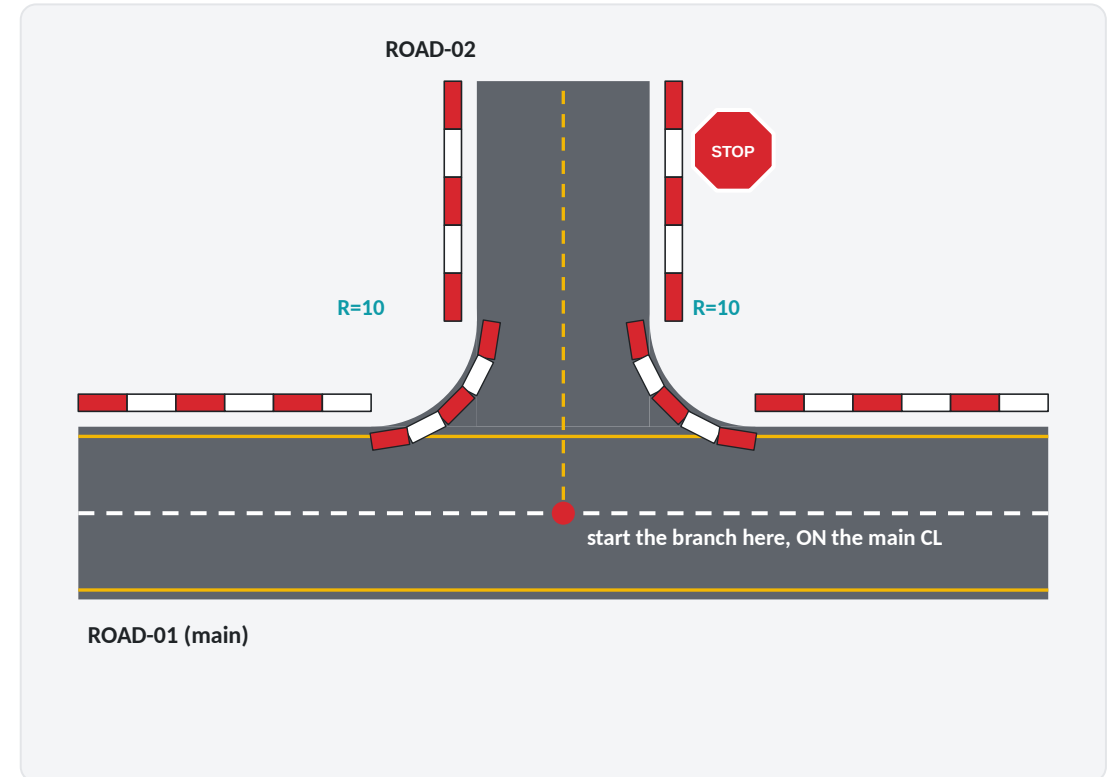
Draw the branch CL

First point ON the main road CL (snap Nearest), then draw outward and press Enter.

7

Junction is built

Branch road, main edges cut, kerb returns, corners, signs, markings, summary printed.

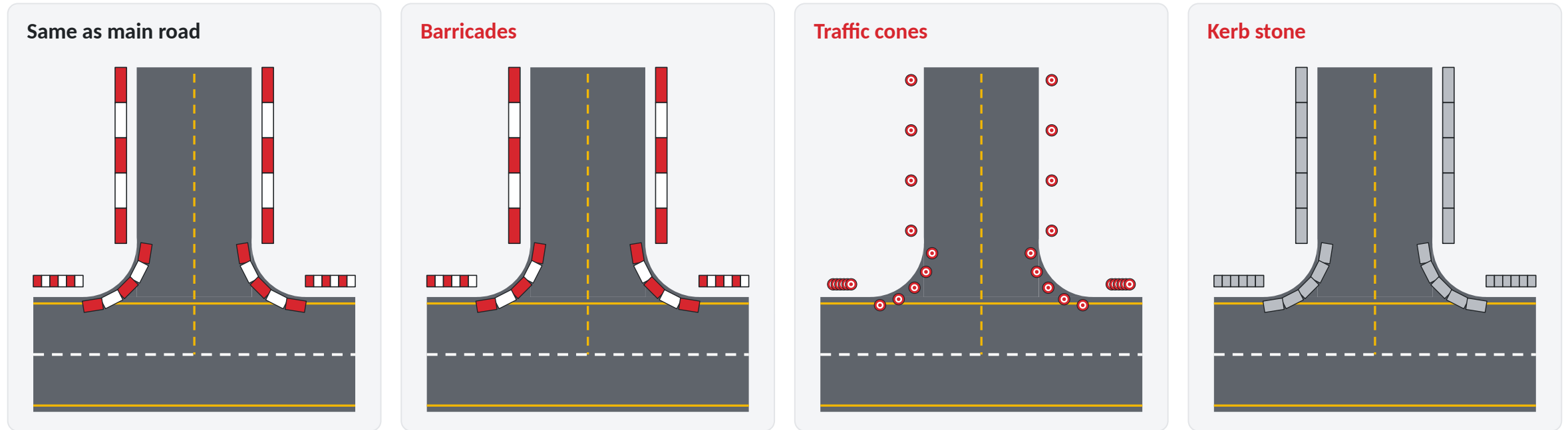


Crossroads? Run RDJ once for each side at the same chainage. Several branches (J1, J2 ...) can join the same main road.

Road Junction dialog: every setting

Setting	Options (default)	What it does
Branch road name / ID	ROAD-02	Name of the joining road (labels, report).
Branch road width (m)	7.30	Carriageway width of the branch.
Branch centre line	Draw new (from main road CL) / Select existing	Draw after OK, or click a line that starts on the main CL.
Corner (kerb return) radius (m)	10.0	Radius of both kerb returns.
Control on the branch	STOP / GIVE WAY / No sign	Sign and L7 stop line or L8 give-way line on the branch.
Edge treatment around the corners	On	Places a treatment along both kerb returns.
Corner treatment	Same as main road / Barricades / Traffic cones / Kerb stone	NEW in 3.3: choose what goes around the corners (slide 28).
Road markings in the turning area	On	L5/3 across the mouth, L2A approach, turn arrow, STOP / triangle.
Add auxiliary lane (two taper lines)	On	Extra lane on the main road at the junction.
Lane width / long / short / storage	3.65 / 60 / 30 / 30 m	Width, approach taper (long), departure taper (short), storage length.
Island / width / length	No island / Kerbed / Painted, 1.5 / 15 m	Splitter island on the branch.

How to add barricades, cones or kerb stone at junction corners



1

RDJ → select main CL

Open the Road Junction dialog.

2

Tick Edge treatment around the corners

Untick to leave the corners open.

3

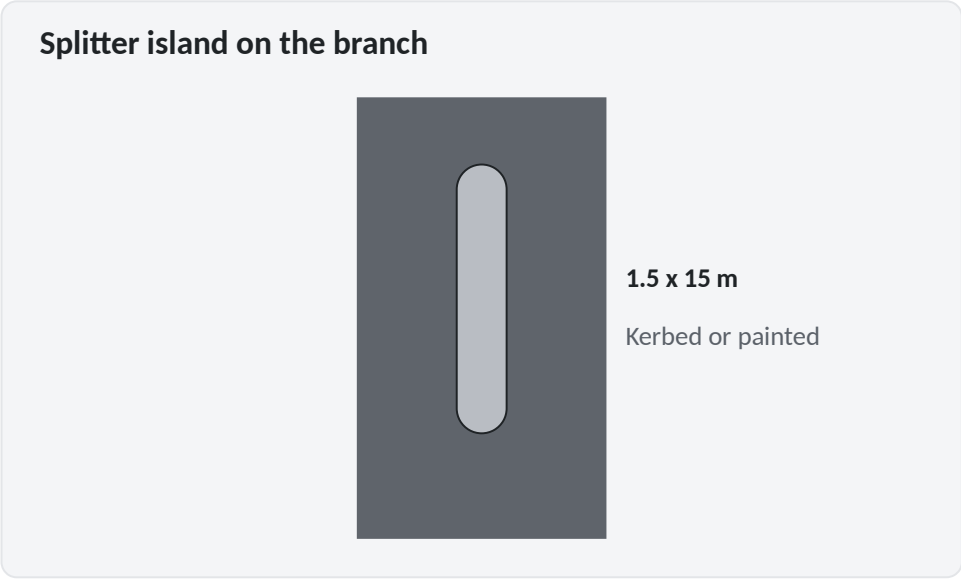
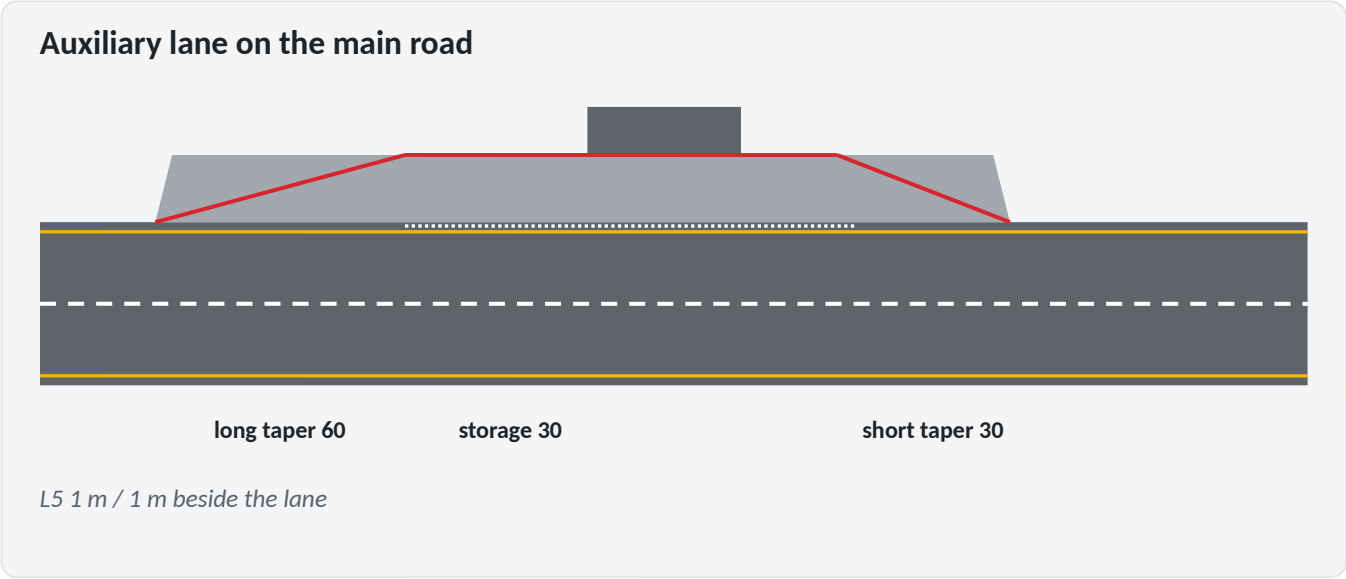
Choose Corner treatment and press OK

Same as main road uses the main road Edge; size = RDP Unit length / cone spacing and width.

```

===== ROAD PRO - JUNCTION J1 =====
Branch       : ROAD-02  width 7.30 m
Corner R     : 10.00 m
Corners      : 14 traffic cones
               around the corners
Control      : STOP sign
  
```

Auxiliary lane and splitter island



Setting	Default	Range used	Notes
Lane width (m)	3.65	3.0 – 3.65	Width of the auxiliary lane
Approach taper, long (m)	60	by speed	Entry into the lane, before the junction
Departure taper, short (m)	30	by speed	Exit back to the main road
Storage length (m)	30	by traffic	Full-width part at the junction
Island width / length (m)	1.5 / 15	—	Lanes beside the island under 2.75 m give a warning

Single line of barricades, cones or kerb stone

Use RDL when you need one run anywhere, without building a road:

- Lane closure or cone taper on an existing road
- Work zone or excavation boundary
- Kerb along a footpath, parking or island edge
- Barricades on both sides of a trench or a temporary path
- A ring of cones round a manhole (circle)

1

Draw the line

Line, polyline, arc, spline, circle or ellipse on any layer, in the run direction.

2

Type RDL and select

Select one or more objects, press Enter. The dialog opens.

3

Choose type, placement and size

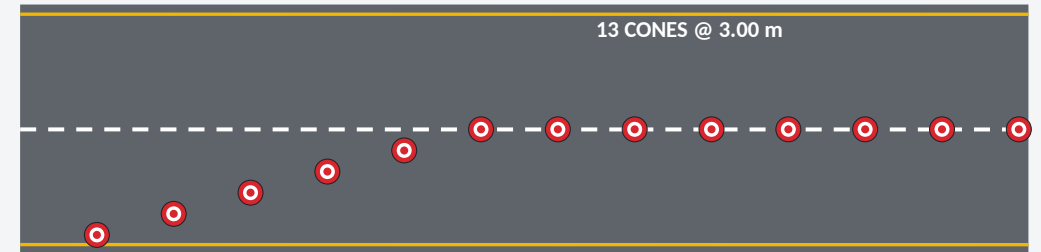
Barricades / Traffic cones / Kerb stone; on the line, left, right or both.

4

Press OK

Units are placed, the quantity label is added, totals print. U undoes the run.

Example: cone taper closing a lane



Draw a polyline along the closure, RDL → Traffic cones, On the line, spacing 3.00.

```
Command: RDL
Select lines, polylines, arcs or splines
for the single line run: 1 found, Enter
===== ROAD PRO - SINGLE LINE =====
Traffic cones    : 13
Type U to undo this run in one step.
```

Single Line dialog: every setting

Setting	Options (default)	What it does
Type	Barricades (red / white) / Traffic cones / Kerb stone	What to place along the selected objects.
Placement	On the line (centred) / Offset to the left / Offset to the right / Both sides	Left / right are seen looking along the line from its start point.
Offset from the line (m)	0.50	Distance from the line to the units for left, right and both sides.
Unit length / cone spacing (m)	2.00	Length of a barricade or kerb unit, or spacing of cones.
Unit / cone / kerb width (m)	0.50	Width of the unit or size of the cone.
From distance along line (m)	0	Start the run part-way along the line.
To distance (m, 0 = line end)	0	Stop the run before the line end.
Quantity label on the drawing	On	e.g. 24 BARRICADES (12 R / 12 W), 13 TRAFFIC CONES or 48.0 m KERB STONE.

On the line



Offset left



Offset right



Both sides



Make the report and the Excel file

1

Save the drawing

The Excel (CSV) file is written in the same folder as the DWG.

2

Type RDR, select the road CL

Any RoadPro road: main road or branch.

3

Read the summary

Printed on the command line (F2 shows it all).

4

Excel file is saved

ROAD-01_RoadPro_Report.csv next to the DWG.

5

Place the tables

Pick the top-left corner, or Enter to skip the drawing tables.

6

Open Excel?

Yes opens the CSV, No continues. Close it before you run RDR again.

```
Command: RDR
Select the road centre line: pick
===== ROAD PRO REPORT - ROAD-01 =====
Centre line length : 412.350 m
Road surface area  : 3010.16 m2
Edge treatment     : Barricades
Barricade units    : 418 (209 red / 209 white)
Signs              : 14
Excel report saved : D:\Project\ROAD-01_...csv
Pick top-left corner for report tables: pick
Open the Excel report now? [Yes/No]: Y
```

Remember Run RDR after the last change (RDW, RDT, RDJ, RDM) so every quantity is up to date. Enter at the table prompt only skips the drawing tables, never the Excel file.

What is inside the report

Summary

Road name, date, units, start / end chainage, length, width, edge lengths, surface area, straights and curves, design radius, minimum radius

Edge treatment

Barricade units red / white per side, traffic cones per side (nos), kerb stone per side (m), centre median, unit size, paved shoulder and area

Signs and markings

Signs, chevrons, lane arrows, delineators, sign set; marking lengths per line type and paint area (m²)

Curve data

Each curve: TC / CT chainage, radius, arc length, deflection, centre and TC / CT E / N

Road sections

Every straight and curve: chainage range, length, edge lengths, area, bearing

Setting-out

E / N of CL, left edge and right edge at every chainage interval

Sign schedule

ID, sign, plate size, chainage, side, facing direction, post E / N

Widening, taper and junction

Extra areas, new edge offsets, road width at the end, kerb returns TC / IP / CT with E / N

From a blank drawing to a finished road with a junction

- 1 **APPLOAD** Load RoadPro.lsp. Save the drawing as SITE-ROAD.dwg.
- 2 **RDP** Geometry: ROAD-01, width 7.30, Match existing, Meters, Pick points.
- 3 **RDP** Edge: Left + Right, Barricades, 2.00 x 0.50, shoulder 0.50. Centre: markings.
- 4 **RDP** Signs: 50 km/h, HDS on, Temporary, STOP at tie-in. Chainage 20 from 0.
- 5 **RDP** Ends: start Tie-in, finish Road closed. Report and section on. OK.
- 6 **RDP** Draw the CL: 3 straights and an arc, Enter. Place tables, open Excel, place section.
- 7 **RDW** Right side, 3.65 m, 0+100 to 0+180, tapers 30 / 30, fillet 30.
- 8 **RDJ** ROAD-02, 7.30 m, R 10, STOP, corners Traffic cones, aux lane on. Branch from 0+300.
- 9 **RDL** Polyline round an excavation: Barricades, Both sides, offset 1.00.
- 10 **RDX** At every chainage interval, 20 m: pick the sheet corner.
- 11 **RDR** Final report: run on ROAD-01 and on ROAD-02.

Result Complete plan, sections, sign schedule, quantities and setting-out for both roads.

Standard values used (Oman HDS 2017, Section 19)

Sign plate sizes by speed (mm) and warning distance

Speed	Triangle	Circle	STOP	GIVE WAY	Warning
50	600	600	750	750	50 m
60	750	750	900	750	75 m
80	900	750	1200	900	150 m
100	1200	900	-	-	200 m
120	1500	1200	-	-	300 m

Delineator post spacing on curves (S)

Radius (m)	500	300	200	100	75	50	25
Spacing S (m)	50	30	20	15	12	10	7

Approach tangents 2S, 3S, 6S (max 100 m). Posts 0.30 m beyond the paved shoulder. Sign lower edge 1.5 m above ground (2.1 m over a sidewalk). Warning triangles yellow; chevrons yellow / black permanent, black / yellow temporary; cones red with a white band.

Road markings

Line	Use	Pattern
L1	Lane / centre line	2/6 - 3/9 - 4/12 m
L2	Warning (bends)	6/2 - 9/3 - 12/4 m
L2A	No overtaking	Continuous
L4	Edge (yellow)	Solid, 120 mm
L5	Beside aux lane	1 m / 1 m
L5/3	Across side road	600 / 300 mm
L7 / L8	Stop / give way	Line + STOP / triangle

Please note Values follow the Oman Highway Design Standards 2017, Section 19 (GCC manual based). For projects in Qatar, check against the Qatar Traffic Control Manual (QTCM) and your project specification. Every value can be changed in the dialogs.

Troubleshooting and quick fixes

Problem	Fix
Unknown command RDP	Load RoadPro.lsp with APPLOAD. Full AutoCAD only, not AutoCAD LT.
Road is 1000 times too small or too big	Set Drawing units to Millimeters for mm drawings (Meters for m).
"No RoadPro data on this object"	Select the red centre line on layer ROAD-CL of a road built by RDP or RDJ.
Warning: edge treatment tighter than the radius	Increase the radius, or reduce the width, shoulder or unit width (slide 12).
Black outline not visible	Dark screen background: outlines show white but plot black.
Excel file could not be saved	Close the old CSV in Excel, save the DWG, then run RDR again.
Junction not formed	Start the branch exactly ON the main CL (snap Nearest), away from widened or tapered edges.
Auxiliary lane skipped	With its tapers it would run past the road end: move the junction or shorten the tapers.
Widening runs outside the road	Start – taper in and End + taper out must stay inside the road chainages.
Chainage not accepted	Type 100 or 0+100 as a real road chainage (includes the start chainage).
RDL placed nothing	From / To outside the line length, or spacing larger than the line. Set To = 0 for the line end.
Settings look wrong	Type ROADPRORESET to restore all defaults (width 7.30 m, radius 10 m).

Quick reference: shortcuts and default values

RDP

Build road

RDR

Report + Excel

RDRAD

Radius labels

RDSEC

Straight sections

RDX

Cross sections

RDW

Lane widening

RDT

Road taper

RDJ

Junction / tie-in

RDM

Road markings

RDL

Single line (new)

RDP default	Value	RDW / RDT / RDX	Value
Road width	7.30 m	Extra lane width	3.65 m
Manual radius	10.0 m	Widening tapers	30 / 30 m
Unit / cone spacing	2.00 m	Taper edge shift	+1.00 m
Unit width	0.50 m	Fillet radius	30 m
Paved shoulder	0.50 m	Crossfall	2.5 %
Speed	30 km/h	Barricade height	1.00 m
Chainage interval	20 m	Sign clearance	1.50 m

RDJ / RDL default	Value
Branch width	7.30 m
Corner radius	10.0 m
Corner treatment	Same as main
Aux lane / tapers	3.65 / 60 / 30 m
Island	1.5 x 15 m
RDL offset / unit	0.50 / 2.00 m
RDL To distance	0 = line end

Build your next road with RoadPro

Version 3.3 · 12 October 2026 · RoadPro.lsp for AutoCAD

RDP

RDW

RDT

RDJ

RDL

RDM

RDX

RDR



Developed by <https://www.exceltokml.com/>

Standards reference: Oman HDS 2017 Section 19. Check QTCM and your project specification for Qatar.