

# Improvements for Carlson Takeoff R10

## General

- **AutoCAD 2018 OEM engine** – Upgraded from AutoCAD 2013 to AutoCAD 2018 OEM engine.
- **64 bit** – Engine upgraded from 32-bit for more memory access.
- **3D Viewer Window** – Added function to set sun position by location and time. Added function to load solid models (.mdl files) and ability to set display properties for solids.
- **Text Mask** – Added support for curve/arc text.
- **Sequential Numbers** – Added method for fixed symbol size and size text to fit.
- **Hatch Wizard** – Added setting for transparency and option whether to prompt for exclusion areas.
- **Draw Table** – Added method to import Microsoft Excel from selected sheet with ability to link table to xls file. Added many more controls for the table style and option to auto split long tables.
- **3D Entity To 2D** – Added support for hatch, leader, solid and 3D face entities.
- **Offset To Layer** – Added option to draw easement polyline around source polyline.
- **Median Offset** – Added new method that uses offset intersection method.
- **Edit Table Values** – Added functions to sort rows by selected field, to add columns and to delete columns.
- **Move Text With Leader** – Added options for curved leaders and to draw a box around the text.
- **Shrink Wrap Entities** – Added method to create interior hole boundary polyline.
- **Block Data Report** – New command to report the number of different types of blocks in the dwg along with their attributes.
- **Text File To Report Formatter** – New command to load a comma delimited text file into the Report Formatter.
- **Report Formatter** – Added option for double space between rows. Added left/center/right justification controls per field. Added prefix/suffix per field. Added method for user-defined field as a percentage of total for the field.

## Takeoff Commands

- **Edit Assign Polyline Elevations** – Overhauled user interface for smoother workflow. Added report function and controls for grip sizes.
- **Elevate Pads By Grade Rules** – Added option for dz to inner pad after elevating main pad such as a garage slab within a building pad. Added option to set vertical offset and option to maintain 3D polyline by using a dz instead of fixed elevation such as for an exposed basement.
- **2D To 3D Polyline By Points** – Added option whether to filter by description and put options into a dialog.
- **Material Quantities** – Added block attributes to the report.

## Surface Commands

- **Triangulate and Contour** – Added option to auto densify breaklines. Added option for label layers to use main contour layer as prefix.
- **Display Last TIN Error Log** – New command to show the last data error log from Triangulate and Contour.
- **Triangulation File Utilities** – Added new merge TINs method that retriangulates from original point data. Added functions to offset, divide and multiply by another TIN. Added function to break bent edges.
- **Design Pad Template** – Added method for creating retaining wall at the grade limits.
- **Cut/Fill Labels** – Added method for gradient colors.
- **Draw Spot Elevations** – Added option to prompt for second elevation.

## Road Commands

- **Design Template** – Added a new curb style with batter and rise. Added subgrade method to fit surface to subgrade.
- **Draw Typical Template** – Added subgrade legend. Added settings for slope decimals, distance suffix and labels in inches.
- **Template Grade Table** – Added function to return to defaults.
- **Template Point Centerline** – Added support to apply to the TIE point.
- **Process Road Design** – Added method for divided highways to use separate centerlines for stationing and for road design. Added use of material density for reporting subgrade tons by material.
- **Road Network** – Added support for creating an island inside cul-de-sacs. For output of existing ground profiles, added option to create left/right offset profiles. Added option to skip creating intersection curb return for crossings like an overpass or RR. Added method for intersections for second template point profile.
- **Tag Curb Ramp** – New command to locate positions along alignment for creating curb ramps for Process Road Design and Road Network.
- **Station Polyline/Centerline** – Added options for labeling PIs at deflections. Added settings for PI station label prefix and suffix, controls to rotate perpendicular or horizontal, separate properties for layer and style, and setting for size of PI lines.
- **Label Station/Offset** – Added option to label cut/fill.

- **Calculate Offsets** – Added option to label cut/fill.
- **Offset Point Entry** – Added method for multiple offsets per station.
- **Draw Curb Ramp** – Added method to pick left/right ends, option to set ramp slope and option to taper back. Added method to select driveway polylines for ramp area. Added method to updating crossing road linework besides the curb such as sidewalks.
- **Super Elevation** – Added support for station equations. For transition part in tangent, added option to have tangent as distance as well as percent.
- **Slope At Points** – Added style settings, option to draw box with solid background and option to label horizontal.
- **Elevate Intersection Curb Return** – New command to assign elevations for a curb based on main and side road elevations.
- **Profile From 3D Polylines** - Added method to process multiple polylines and put breaks between like for curb profiles.
- **Draw Profile** – Added method to label horizontal axis elevations on both top and bottom of profile grid and added setting for label justification. For sewer labels above rim, added placement controls for vertical line. Added method to draw grid as lines on major interval with dots for minor interval. Added option for vertical elevation bar. Added separate sizes for grid tick marks on major and minor intervals.
- **Input Edit Section Alignment** – Added method to station by another reference CL.
- **Draw Section File** – Added support for drawing an unlimited number of section files. Added separate controls for major/minor grid intervals. For volume labels, added settings for label names and whether to draw elevations. Added settings to configure the printer/plotter when creating layouts. Added option to output to sheet sets. Added method to draw grid as lines on major interval with dots for minor interval. Added option for vertical elevation bar. For labeling volumes, added option to calculate volumes using all the stations in the section file or only the stations being drawn.
- **Calculate Section Volumes** – Added method to report incremental volumes by elevation zones.