Carlson 2025 Feature Updates

General

- Added support for AutoCAD 2025
- Added support for IntelliCAD 12.1
  - Create and edit advanced blocks
  - Load/Save print stamp settings and quality presets in PUBLISH command
  - Drag/Drop drawings to tool palettes
  - Latest IFC support
  - Drawing Explorer is now fully supported in DGN mode
  - DATAEXTRACTION command is now available
  - more at 12.1 Features (intellicad.org)
- MicroStation style single entity MOVE command (QMOVE)
- Shrinkwrap by Gap - improved defaults and error handling
- Better polyline width support in DGN mode (IntelliCAD)
- Northing/Easting order setting is properly supported by additional dialogs, commands and reports
- Cloud based network licensing to support sharing of license count between the 2024 and 2025 versions
- Reverse background command (REVERSE_BACKGROUND) has been added to make it easier to work with drawing with washed out colors or use a projector
- Added ability to collect crash reports from installations on AutoCAD, which was only previously available for the IntelliCAD platform
- Join Nearest: Option not to combine similar arcs

Survey

- Inverse command adds an option to support default annotation settings and additional slope labeling options
- New (ADD_TBL) command allows users to add existing linework labels to existing or new tables.
- Copy Table Command (COPY_TBL) - logic to handle line/curve copy table as a subset of the master table
- Implemented automation of new table creation if user has changed line/curve prefixes in the "Line/Curve Table Defaults" dialog
- CURVETBL and LINETBL by points now stores appropriate data for linework
- Line/Curve tables numbering system improved to recognize user input numbers. "Keep All" option is restored for conflicting references.
- Implemented restriction to copied tables to selection of existing labels

- SurvNET: dock dialog report updated: now detachable, abbreviated tabs setting and individual reports added to "Report" dialog.
- AUTOPNT: Option for centroid of polylines
- Added warning for bad values when converting Lat/Lon coordinates.
- Added ability to parse Multiple Note/attribute fields in Import Text/ASCII files.

Survey/Civil

- Centerline report - additional options on what is included in the report
- Profile ID and Centerline ID can now have an options dialog and ability to draw labels
- Station Polyline
  - "Link Labels with Linework" support added for IntelliCAD
  - Tick marks and symbols now able to be drawn at PI points
- Lot Network
  - Now supports the creation of blocks
  - Improved management of Lot Types
  - Improved synchronization between LotNET and Lot Manager
  - Lot renumber now includes block names
- Centerline Editor - UI improvements, better retention of centerline data when adding or removing spiral-only elements

Civil

- Draw Surface Boundary - ability to process multiple surfaces at the same time
- Tin File Utilities: Ability to load surfaces from Terrain entities in DGN mode
- Profile Capture
  - Recognize sewer annotation text as vertical or horizontal
  - Recognize "Both on Top" horizontal axis labels
  - Improved Sewer profile recognition
  - Improved Road profile recognition
  - Improved Slope Label recognition
  - Improved horizontal axis label recognition
  - Captured ground profile settings now apply to Draw Sewer Profile
  - Added recognition of Horizontal Lines Only grid style, road slope labels, PVI tangent lines, External Distance in Road Labels, Grid Adder Top/Bottom/Left/Right, Road VC labels, Manhole width, Pipe size
  - Added conversion and recognition of Civil 3D road/ground profiles and styles
  - Improved Manhole name recognition
  - Improved VC and K-val calculations: using pre-stored PVI instead of recalculating over distances
- Road Network and Parking Network:
  - Automatic detection of changes in project path
  - Users can adjust the precision in reports by going through the settings dialog

- o   Network files will be set as current after SaveAs
- o   Network files displayed full path in their in the tooltip
- o   Added an option to respect the general arc reduction tolerance
- o   Use of toggles in the network tree to control the processing
- o   Curb cuts are displayed as a subtree, making it easier to turn processing on/off individually
- o   Curb cuts are now saved with the Network
- Road Network:
  - o   Road Color Settings to push the Road Grades to the Material Library if missing from Material List for consistent processing between the projects
  - o   Intersections can add Clover/Clover Loop/Diamond and Diamond Return ramps
  - o   Intersections can locate a bridge for skipped intersections
  - o   Intersection data is maintained for roads that are not set to process
- Parking Network
  - o   Added ability to add multiple EOP and Parking Centerlines
  - o   Added "Copy to Left/Right" option (Advanced)
  - o   Added "Add Both" option (Advanced)
- Added CURB_RAMP_PROCESS to process Tagged Curb Cuts like Road Network
- Road Profile
  - o   Spreadsheet Editor now checks for overlapping vertical curve lengths
  - o   Improvements to number rounding and a new display precision setting
- Draw Profile
  - o   Added option to include a prefix for downhill slope tags
  - o   Added option to label slopes above or below profile
  - o   Sheet settings: improved UI and change Sheet Space Plan and Profile Lower/Upper Y to Height
  - o   Added Draw Profile Grid Style: Horizontal Grid Lines Only for Serbia styles
  - o   Added Draw Profile Road Profiles to annotate the Vertical Curve's External Distance
  - o   Added option to draw vertical line from the road profile PVI to the VC label box.
- Draw Section
  - o   Label Elevation at Zero Offset
  - o   Shows Section file names
- Design Template: Added Sidewalk as a Component within Template
- Draw Template: Added Annotation Color
- Draw Template: Better Detail Drawing
- Template, Profile and Centerline Editors changed to save and restore their positions and sizes.
- 2D to 3D by Profile usability improvements

GIS

- Improved handling of large datasets in WFS routine
- Google Images and surfaces loads the map to the location of the last session and zoom setting
- Place Image by World File will now update IMAGE definitions in the drawing if the image is moved or replaced
- Export shape files are now able to operate on a folder or a file (as previously).

Hydrology

- Sewer Network
  - Draw Sewer Table: Added new columns "Quadrant Invert" and "Size Material" and matched the user's format.
  - Sewer Plan View: Added System and Line name to the pipe labels.
  - Sewer Plan View: Drew multiple outlet funnels for multiple pipe barrels.
  - Sewer Editor: Added tailwaters for all storm events.
  - Sewer Editor to use combo box instead of pulldown, so that pipe size can be typed
  - Sewer Editor: Added Assumed Tc.
  - Edit Sewer Structure – Profile View: Added new edit options. 1) Align Invert Downstream 2) Align Invert Upstream 3) Align Crown Downstream 4) Align Crown Upstream
  - Sewer Report – 1) Added Gutter Spread Report 2) Added the Gutter Spread at Sag in the Custom and Inlet Report
  - Sewer Report: Added Reference station/offset.
  - Set Parameters for Entire Network : 1) Added Line Name 2) Added the ability to select a sewer line from the downstream structure to the upstream structure and only set the parameters for the sewer line.
  - Sewer Profile: Added "size x width" pipe label for non-circular pipes.
  - Sewer Profile: Added manhole preview window in sewer profile labels setup dialog
  - Sewer Profile: Added manhole thickness and risers
  - Sewer Profile: Added inlet symbol on top of manhole
  - Sewer Profile: Added new label location at the Grid Bottom for sewer manhole name labels.
  - Improved Sewer Settings now match drawing units
  - Improved dynamic drawing and labeling of sewer profiles after revisions
  - Sewer Editor: Added option to treat the headall pipe as culvert and use HY8 outlet control method to calculate the headwater as upstream HGL
- Utility Network
  - Better Pipe Material editing – 1) Added pipe material as the main pipe properties and Removed "Material" from the attribute list. 2) Updated the draw plan view label to include pipe material; 3) Added pipe material in

F2F 4) Set pipe material to the attribute material when loading an older utilnet file (2023, 2024)

- o Utility Profile: Added the utilnet connection label set up and used the utilnet connection attribute list
- o Added load file prompt when restart the UTILNET command and default to the last .util file.
- Culvert design will now check for missing Inlet coefficients
- Added options for TR55 in Watershed and Sewer Network Tc calculation
- Added draw options for Pressure Pipe/Utility Network
- Added NOAA download button in rainfall library
- Added two custom rainfall return periods to support European rainfall events and updated all hydrology programs.

Mining

- Improved Surface Mine Reserves mine limit polylines performance
- Isopach Autorun - Control number of decimals for contour labels for individual runs
- Drillholes
    - o Parameter Compliance now allows for an unlimited number of conditions (previously limited to 18 parameters)
    - o Automatically reports issues with problematic drillholes (duplicate holes, out of order strata, etc) in a docked dialog
    - o Provides zooming options to easily locate problematic holes
- Block model
    - o performance and reporting improvements for SMR strata qualities and breakout quantities, BM editor, BM statistics.
    - o Improvements to BM export file sizes and size of the model itself
- Pitmaster Command
    - o Added pit design wizard to design a bench-by-bench pit
    - o Added crest limit option to the workflow
    - o Added ability to make switchbacks and minimum radius selection for switchbacks
    - o Introduced "Add Flat Road" option - Adds a patch of road on the bench before continuing ramp.
    - o Added functionality to design multiple ramps simultaneously
    - o Added Output Options: Including creating TINs, joining pit TIN with topography TIN and option to show the intersecting polyline.
    - o Added "Stop Ramp" button
    - o Added option to taper bench when custom transition is zero
    - o Added elevation as bench height target in addition to fixed height

Point Cloud

- When user has Inertial Lab's PC Master Pro GL installed, the Point Cloud Manager will show a button to launch the software

- Draw contours to CAD now allows users to draw index contours to a different layer.
- Bare Earth by expansion is improved on very sparse point clouds and large point clouds will have bare earth processed faster
- Extract Profile, Improved algorithm for smoothing/simplifying profiles. Simplified controls for polyline simplification.
- Survey by Grid now only calculates estimated points and the point preview with "Show Dynamic Preview" enabled
- Plane Extraction now has a designated "Base Of Wall" mode for extracting the plane and ground contact polyline
- Create Tin now has a toggle for saving the TIN file with colors or not
- Cloud Items now store the last orthomosaic image used for image based feature extraction.
- Added Cloud Compare routine. Allows users to compare cloud points against a set of truthed points and generate reports based on this comparison.

Feature Extraction

- Paint Lines Command added to extract paint lines from an image (alpha)
- Grates Command Added - Extract the outlines of grates. (beta)
- Paint Lines, Gutter and Grates commands automatically use the geotiff in the drawing if there is one instead of asking to select one from a file. If multiple geotiffs exist in the image, the software prompts to select one
- Trench Extraction - extracts trench center line, top of pipe polylines, marks shallow bury depth areas and objects crossing the trench, such as pipes and roots
- Curbs 3D - Extracts gutter and top and back of curb polylines in 3D using the point cloud and an ortho image
- Added option to Parking Lines and Paint Stripes to extract from an image and project the results onto the point cloud.

Takeoff

- Cut/Fill labels performance is significantly improved
- Added ability to add tench to an existing TIN surface
- Define Drillhole - added ability to have drillhole attributes and better defaults
- Add drillhole attributes to Geotech for drillhole log reports
- Added text erasure/OCR to RAS2VEC and LOADPDF to clean up linework import (experimental).
- Input Trench workflow improvements
- Implemented logic to make entities drawn by "Import PDF File" more visible against a drawing's background.