

# SurveyTools<sup>™</sup> for BricsCAD<sup>®</sup> V23.0

# **Features and Benefits**

19 July 2023

# MicroSurvey<sup>\*</sup>

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# SurveyTools for BricsCAD V23.0

#### Release Date: July 20, 2023

SurveyTools for BricsCAD is an all-in-one solution for surveying workflows by MicroSurvey®. The combined solution includes leading technology from MicroSurvey, Bricsys and the trusted industry partner, Leica Geosystems. As Hexagon companies, we work together to enhance day-to-day workflows between our solutions. Land surveyors will benefit from this collaboration by accelerating their productivity with industry-specific tools developed by surveyors for surveyors while benefiting from BricsCAD's Al-driven drafting tools and point cloud workflows. This initial release had the primary objective of bringing our survey tools to the BricsCAD platform and ensuring data integrity for you.

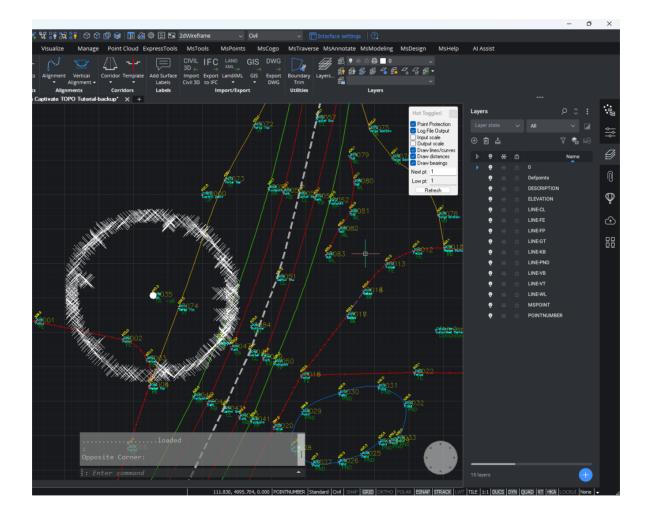
#### Licensing

| Feature                      | Benefit   |
|------------------------------|---|
| Check out a floating license | Take your floating license offline by checking it out for up to four days. License seats are consumed for the entirety of the checkout period, ensuring you have access to a license offline or for important projects.   |
| Check in a floating license  | Check in floating licenses any time within the checked out period. After the checkout period has expired, licenses will be automatically returned and the program will run in expired mode if offline. Licenses will automatically become available to other users with access to the floating license. |



## AutoMAP

| Feature   | Benefit  |
|---|--|
| Use AutoMAP to automate linework, symbols, layer assignment, and labels | Automatically generate linework, symbols, and assign layers and styles from point descriptions on import. AutoMAP is our take on field to finish workflows. Users can quickly set up their intended layers, linework, blocks/symbols, colours, line types, and point labels to be generated each time they import a file in the future. This system can automate much of the required user interaction required when completing drawings, plans, plats, or drawing deliverables. |





#### Active Coordinate Editor

#### Feature Benefit

Active Coordinate Editor -Dynamically view, sort, and edit point data Using the Active Coordinate Editor, you can view, sort, select, and manipulate the points in your drawing where they are updated in real time. Smart linework is defined by the points, so the linework and labels will also update when points are shifted, rotated or scaled.

| Br     | ricsCAD      | Ultimate (NOT        | FOR RESALE Lic    | ense) - [Survey    | Tools Capti | vate TOPC | ) Tutori  | al.dwg]   |        |          |         |           |          |              |         |
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|        | 3017         | 4991.223             | 110.518           | 400.005            |             |           | H         |           |        |          |         |           | 0        | 1            |         |
|        | 3018         | 4986.862             | 107.178           | 399.961            | FE          |           | H         |           |        |          |         |           | 0        | 1            |         |
|        | 3019         | 4986.862             | 107,178           | 399.961            | FE          |           | H         |           |        |          |         |           | 0        | 1            |         |
|        | 3020         | 4983.132             | 105.192           | 399.943            | FE          |           | H         |           |        |          |         |           | 0        | 1            |         |
|        | 3021         | 4974.135             | 101.005           | 399.869            | FE          |           | H         |           |        |          |         |           | 0        | 1            |         |
|        | 3022         | 4987.084             | 115.394           | 400.057            | FE          |           | П         |           |        |          |         |           | 0        | 1            |         |
|        | 3023         | 4986.900             | 127.761           | 400.116            | FE          |           | Π         |           |        |          |         |           | 8        | 1            |         |
|        | 3024         | 4982.008             | 112.855           | 399.966            | PND         |           |           |           |        |          |         |           | 9        | 1            |         |
|        | 3025         | 4981.126             | 111.558           | 399.952            | PND         |           |           |           |        |          |         |           | 9        |              |         |
|        | 3026         | 4980.582             | 109.924           | 399.953            | PND         |           |           |           |        |          |         |           | 9        |              | 1 11    |
|        | 3027         | 4980.480             | 107.996           | 399.999            | PND         |           |           |           |        |          |         |           | 9        |              |         |
|        | 3028         | 4981.517             | 106.520           | 399.977            | PND         |           |           |           |        |          |         |           | 9        |              |         |
|        | 3029         | 4984.189             | 107.241           | 399.932            |             |           |           |           |        |          |         |           | 9        |              |         |
|        | 3030         | 4985.585             | 109.949           | 399.953            |             |           |           |           |        |          |         |           | 2        |              |         |
| _      | 3031         | 4986.036             | 112.784           | 400.033            |             |           |           |           |        |          |         |           | 2        | _            | l'      |
|        | 3032         | 4984.783             | 114.687           | 400.009            |             |           |           |           |        |          |         |           | 2        | -            |         |
|        | 3033<br>3034 | 4982.252             | 114.114           |                    | PND         |           | <u>Ц</u>  |           |        |          |         |           | 8        | -            |         |
|        | 3034         | 4982.100<br>4992.671 | 113.622<br>96.422 | 399.954            |             |           | <u>H</u>  |           |        |          |         |           | ¥.       |              |         |
|        | 3035         | 4992.671<br>4976.544 | 96.422            | 400.016<br>399.907 |             |           | <u> </u>  |           |        | ~        |         |           | ¥.       |              | 1.      |
|        | 3036         | 4976.344             | 94.009            | 399.898            |             |           | <u>+</u>  |           |        |          |         |           | 8        | -            |         |
|        | 3038         | 4975.646             | 97.301            | 399.090            |             |           | <u>+</u>  |           |        |          |         |           | 8        | -            |         |
|        | 3039         | 4975.190             | 98.406            | 399.913            |             |           | +         |           |        |          |         |           | <u>×</u> | -            |         |
|        | 3040         | 4974.881             | 99.359            | 399,909            |             |           | +         |           |        |          |         |           | 0        |              |         |
|        | 3041         | 4983.603             | 103.543           | 399.940            |             |           | $\exists$ |           |        |          |         |           | 0        |              |         |
|        | 2042         | 4000.000             | 400 700           | 200.022            |             |           | <u>+</u>  |           |        |          |         |           | -        | -            | ا الت   |



### Import and Export Industry Data

| Feature                     | Benefit   |
|-----------------------------|---|
| Import/Export industry data | We have strived to be manufacturer agnostic. We import and export data collector formats from all of the big manufacturers to ensure SurveyTools for BricsCAD will work for you. We also of course work with ASCII and landXML files.   |
|                             | MSTraverse       MsAnnotate       MsModeling       MsDesign       MsHelp         Import       Esport       Esport       Esport         ector       File       Import Leica DBX (Viva/Captivate)         Import Leica GSI8/GSI16 Standard       Import Leica GRE / GIF 10 MicroSurvey         Import Leica GRE / GIF 10 MicroSurvey       Import EMXS Raw         Import Geodimeter 400+ Line by Line (Old)       Import Geodimeter 400+ Stacked (New)         Import Nikon DTM 300 Coordinates       Import Nikon DTM 300         Import Nikon DTM 500       Import Nikon DTM 500         Import Nikon DTM 500       Import Nikon 700 (raw Nikon)         Import Nikon DTM 500       Import Nikon 700 (raw Nikon) |

**→** SMI

**R**22

**R33** 

→ T RR

105

FC4

JXL

Import SMI RAW file

Import Sokkia SDR2/22/24

Import TDS 48/500 RW5

Import Trimble JobXML

Import Sokkia SDR33/Powerset

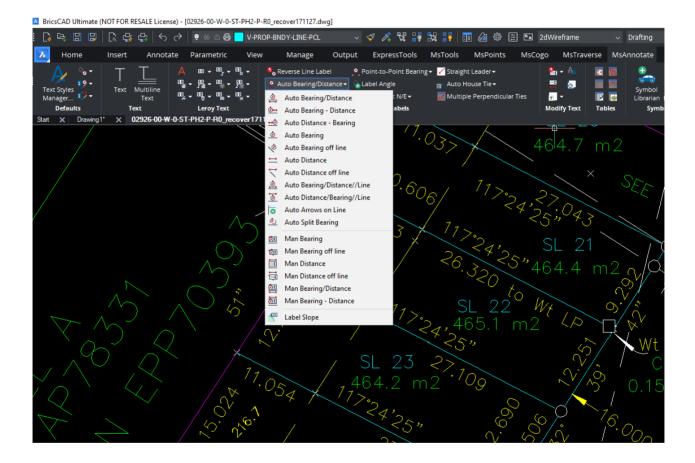
Import Topcon 210/310 Series

Import Topcon FC4 / Onboard



#### Survey Specific Annotations

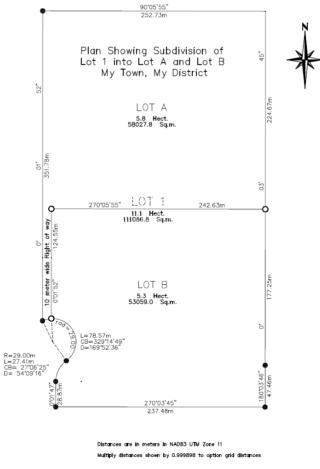
| Feature   | Benefit  |
|---|--|
| Annotations optimized for<br>Surveyors with easy scale<br>factor management | We have been building software for Land Surveyors since 1985. We can label everything that you could want to label in a variety of formats. We can apply grid/ground scaling to the labels so the project can use grid coordinates while the labels are converted to ground. |





### Single-Command Coordinate Geometry Computations

| Feature   | Benefit  |
|---|--|
| Powerful, intuitive, and<br>efficient COGO computations<br>with integrated labelling and<br>point symbols | Using our COGO command, you can create points and optional linework to efficiently compute points and linework at specified azimuths/bearings and distances, compute bearing/bearing intersections, distance/distance intersections, incorporate offsets, inline arithmetic operations, copy bearings or distances from other lines, and compute inverses from one easy to use command using only the keyboard (You can click too if you prefer!). Our online training project is in a grid coordinate system, we are working with ground distances for the entered distances and labelling. The goal is to subdivide a parcel in half on the east line, the dividing boundary parallel to the north line, and leave a 10-meter access corridor along the western edge for the northerly parcel to access the cul-de-sac. This is starting with the parcel lines already drawn using the COGO command. |







### **Traverse Editor**

| Feature                                    | Benefit  |
|--|--|
| QA, Adjust, and Recompute<br>Traverse Data | In the Traverse Editor, you can view and correct blunders in target height, prism constants, incorrect setup or backsight point ID's and more before recomputing the traverse. This will update all points in your project that were created by the traverse. Traverses can also be adjusted by all the common techniques. |

BricsCAD Ultimate (NOT FOR RESALE License) - [SurveyTools Captivate TOPO Tutorial.dwg]

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|         | Note          | · · ·           | in): 05-01-201           |                        |                        |              |                 |              |                  |           |
|         | Note          |                 |                          | -09-2020 15:01         |                        |              |                 |              |                  |           |
|         | Note          |                 |                          |                        | al number : 883        |              |                 |              |                  |           |
|         | Store Pt Type | Pt Num          | North                    | East                   | Elev                   | Desc         |                 |              |                  |           |
|         | SP            | 10000           | 5000.000                 | 100.000                | 400.000                | CP           |                 |              | _                |           |
|         | SP            | 10001           | 5013.632                 | 114.681                | 400.035                | CP           |                 |              | _                |           |
|         | Note          |                 | ate: 08-09-201           |                        |                        |              |                 |              |                  |           |
|         | Note          | · · ·           |                          | 00 Trans.: 0.00        |                        |              |                 |              | _                |           |
|         | Note<br>Note  | ·               |                          | Vertical Index         | 0.00000                |              |                 |              | _                |           |
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|         | Note          |                 |                          |                        | : Known backs          | night point  |                 |              | _                |           |
|         | Note          |                 |                          | E 100.0000,EL4         |                        | signt point  |                 |              |                  |           |
|         | Note          | Atmospheric     |                          | 100.0000,224           | 100.0000,01            |              |                 |              |                  |           |
|         | Note          |                 | eica Circ Prisn          | n 0 0                  |                        |              |                 |              |                  |           |
|         | Note          |                 |                          | E 114.6814.EL4         | 400.0352CP             |              |                 |              |                  |           |
|         | Occupied Pt   | BS Pt           | BS Azm                   | BS Read                | Inst Ht                |              |                 |              |                  |           |
|         | 10000         | 10001           |                          | 0°00'00"               | 1.760                  |              |                 |              |                  |           |
|         | Shot Type     | Shot Pt         | Targ Ht                  | Hz Ang                 | Vt Ang                 | Slp Dist     | Desc            | Par Off      | Perp (           |           |
|         | SS            | 10001           | 1.600                    | 0°00'00"               | 90°23'59"              | 20.030       | CP              | 0.000        | (                |           |
|         | Note          | Delta horiz d   | ist: 0.0047 Del          | ta height: 0.014       | 49                     |              |                 |              |                  |           |
|         | Note          | TPS Survey      |                          |                        |                        |              |                 |              |                  |           |
|         | SS            | 3000            | 1.600                    | 195°52'37"             | 90°51'06"              | 18.679       | FE              | 0.000        | (                |           |
|         | SS            | 3001            | 1.600                    | 185°36'40"             | 90°54'44"              | 15.216       | FE              | 0.000        | (                |           |
|         | SS            | 3002            | 1.600                    | 161°37'02"             | 90°42'13"              | 12.002       | FE              | 0.000        | (                |           |
|         | SS            | 3003            | 1.600                    | 151°30'59"             | 90°38'34"              | 12.627       | FE              | 0.000        | (                |           |
|         | SS            | 3005            | 1.600                    | 148°22'32"             | 90°37'58"              | 14.434       | FE              | 0.000        | (                |           |
|         | SS            | 3004            | 1.600                    | 148°22'32"             | 90°37'58"              | 14.434       | VT              | 0.000        |                  |           |
|         | SS            | 3006            | 1.600                    | 149°09'20"             | 90°32'56"              | 19.180       | FE              | 0.000        |                  |           |
|         | SS            | 3007            | 1.600                    | 149°31'51"             | 90°41'20"              | 23.835       | FE              | 0.000        |                  |           |
|         | SS            | 3008            | 1.600                    | 51°25'17"              | 90°07'14"              | 27.773       | FE              | 0.000        | (                |           |
|         | SS<br>SS      | 3009<br>3011    | 1.600                    | 53°58'34"<br>55°24'04" | 90°12'34"<br>90°19'40" | 20.949       | FE              | 0.000        |                  |           |
|         | SS            | 3011            | 1.600                    | 55°24'04"<br>55°24'04" | 90°19'40"<br>90°19'40" | 17.992       | VB              | 0.000        |                  |           |
|         | SS            | 3010            | 1.600                    | 55°24'04"<br>57°49'54" | 90°19'40"<br>90°24'08" | 17.992       | VB<br>FE        | 0.000        |                  |           |
|         | SS            | 3012            | 1.600                    | 63°52'29"              | 90 24 08<br>90°44'48"  | 15.075       | FE              | 0.000        |                  |           |
|         | SS            | 3015            | 1.600                    | 73°53'57"              | 90°44'40"              |              | FE              | 0.000        | — <del>`</del> ~ |           |
| <       | 00            |                 | 1.500                    | 100001                 | ,                      | 10.000       |                 | 0.0001       | > .:             |           |
|         |               |                 |                          |                        |                        |              |                 |              |                  |           |
|         |               |                 |                          |                        |                        |              |                 |              |                  |           |



#### Lot, Block, and Parcels

Benefit

#### Feature

Fully Featured Block, Lot, and Parcel Tools including computing lot closures.

Lots and parcels can be created, labelled, and subdivided using specialized tools. We provide a tool to compute and report on the closure of lots using only the labels. This ensures the plans your firm produces are labelled correctly.





# Point History Tracking

| Feature                     | Benefit   |
|-----------------------------|---|
| Full data traceability with | Many of our commands contain built-in reporting which can be saved for your records.              |
| point history, reports, and | Points contained in the database have history logging with time stamps for modifications to       |
| point comparisons           | the points. This combination of history logs and reporting help limit your exposure to liability. |

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|-----------------|--|--|-----------------|------------------------|-------------------|-------------|--------|-------|-------|---------|
|                 |  |  | ate Editor - Sa | . –                    |                   | Lista       |        |       |       |         |
|                 | -  | File Select Point                      | Northing        | Tools Windo<br>Easting | Elevation         | Description | Locked | Audio | Photo | History |
|                 |  | 1                                      | 9999.989        | 5119.995               | 0.000             | RAD         |        |       |       |         |
| , <b>≖1</b> 58  |  | 2                                      | 10000.016       | 4824.995               | 0.000             |             |        |       |       |         |
|                 |  | 3                                      | 10015.016       | 4824.996               | 0.000             |             |        |       |       |         |
| <sup>67</sup> 1 | للتحصير 🔊  | 4                                      | 10015.039       | 4571.556               | 0.000             | ici osc     |        |       |       |         |
|                 | History of Point 7   |  |                 |                        |                   |             |        |       | ×     |         |
| · · · -         |  |  |                 | Copy to Clip           | board             |             |        |       | -     |         |
| 3 <b>5</b><br>  | History of Point 7<br>2008/9/26 16:18:<br>Point added at<br>2023/7/14 16:42:<br>N changed fror<br>E changed fror | (N,E,EI) = (100<br>41<br>n 10049.85101 | 9 to 10049.839  |                        | 000), descriptior | n=", note=" |        |       |       |         |



## Smart Linework and Labels

| Feature   | Benefit   |
|---|---|
| Dynamic bearing/azimuth and distance line labelling | Smart Lines, arcs, polylines and labels:  |
| with scaling  | This is where the magic happens. Our line and polyline database is point defined,<br>meaning when points move the linework updates. The labels for linework reads<br>the information from the line, and updates when changes happen. Linework<br>contains scale information, which allows us to have dynamically updating line and<br>polyline labels with scale factors applied if you choose to apply them. |

| 1                                      |  |   |       |               |       |              |  |
|--|--|---|-------|---------------|-------|--------------|--|
|  | <u>4</u> 2                               |   |       |               |       |              |  |
|  | CAD Line C                               | Computation   | 5     |               |       | ×            |  |
| 123.69/                                |  | Line Information: Survey Data. CAD line entity is 2D.<br>Connecting: From 141 |       |               |       |              |  |
| —— <del>ф</del> ——                     |  | То  | 14    |               |       | 20.414.5115  |  |
|  | Bearing: N12°04'15"E<br>Rotated Bearing: |   |       |               |       |              |  |
| 10                                     | From N:                                  | 10818.000   |       | Horizontal    | dist: | 65.993       |  |
|  | From E:                                  | 5056.000  |       | Scaled h      | oriz: | 66.000       |  |
| ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | From Z:                                  | om Z: 0.000   |       | Slope dist:   |       | 65.993       |  |
|  | To N:                                    | 10882.534   |       | Scaled sl     | ope:  | 66.000       |  |
|  | To E: 5069.8<br>To Z: 0.000              |   | % Gra |               | ade:  | 0.000 %      |  |
|  |  |   | _     | Delta Z:      |       | 0.000        |  |
|  | Angle/Angle                              |   | Tan   | gent to Arc   | T     | urned Angle  |  |
|  | Traverse                                 |   | D     | Deflection    |       | List Line >> |  |
|  | Propo                                    | rtioning  |       |               |       |              |  |
| 441                                    | ۵  | dd Lines to (   | Coo   | rdinate Datal | base  |              |  |
|  | ок                                       |   |       | Help          |       | Curve Calcs  |  |
|  |  |   |       |               | _     |              |  |
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